



Draft Environmental Assessment

Nez Perce Tribe Redundant Telecommunications Tower, Kamiah ID

FEMA – Tribal Homeland Security Grant EMW-2014-SS-00135-S01

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Executive Summary

The Nez Perce Tribe has been awarded a Tribal Homeland Security Program grant from the US Dept. of Homeland Security- Federal Emergency Management Agency (FEMA) to construct a one-hundred-forty foot telecommunications tower. Service resulting from this project will enable redundant fixed wireless broadband telecommunications into the community of Kamiah, Idaho on the Nez Perce Tribe Reservation.

The location and construction activities in the Proposed Action are activities analyzed by the following regulatory entities: Federal Communications Commission, Federal Aviation Administration, Nez Perce Tribe Programs, and US Fish & Wildlife Service.

The Proposed Action addresses the current lack of redundant connectivity that impacts critical community facility connectivity and enhances public safety. The Proposed Action will enable redundant gigabit wireless telecommunications infrastructure to be deployed. Results of the Proposed Action will enhance telecommunication service to the community of Kamiah, Tribal Police, Tribal governance and KIYE, the tribally owned locally originated FM broadcast station.

The No Action Alternative offers no redundancy in telecommunications connectivity between the major Tribal communities, Lapwai and Kamiah, which are located approximately seventy-five miles (east to west) across the Nez Perce Reservation.

The Proposed Action will construct a short (900 ft) access roadway, trench about 3,375 ft of electrical conduit, erect a new 140' telecommunications tower and place wireless network equipment on the new tower and on two existing towers, and install a small equipment hut for the new tower. On the existing towers, work will be limited to placement of network equipment on the tower (Tribal Unit 60 and KIYE) with no additional ground disturbance. Construction is planned for the fall of 2015.

The resulting impacts of the Proposed Action are short term, construction related, air quality emission increases in the immediate vicinity. There are no negative effect on Sensitive, Threatened, Endangered species or migratory birds anticipated; and positive improvements to the telecommunications capacity in Kamiah, Idaho on the Nez Perce Reservation are expected to result from the Proposed Action.

The Nez Perce Tribal Historic Preservation Office has completed a review of the Proposed Action per the FCC Section 106 guidelines; no adverse impacts are expected.

No long term negative effects to environmental resources will result from implementation of the Proposed Action.

Chapter 1: Introduction, Purpose, and Need

Introduction

The Nez Perce Tribe has been awarded a Fiscal Year 2014 Tribal Homeland Security grant from the US Dept. of Homeland Security- Federal Emergency Management Agency (FEMA) to construct a one-hundred-forty foot telecommunications tower. Service resulting from this project will enable redundant fixed wireless broadband telecommunications into the community of Kamiah, Idaho on the Nez Perce Tribe Reservation.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). FEMA is required to consider potential environmental impacts before approving actions and projects to proceed. The purpose of this EA is to analyze the potential environmental impacts of the proposed telecommunications tower. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Purpose

The Nez Perce Tribe Reservation encompasses 1,203 square miles within north central Idaho and includes four counties (Clearwater, Idaho, Lewis, and Nez Perce). Within the Reservation, the Nez Perce Tribe ownership is checkerboard in pattern; in the mid 1800's much of the Reservation was opened for settlement. Today the Nez Perce Tribe and its members hold approximately 750,000 acres (10%) of the land base. Within the Nez Perce Tribe Reservation are ten (10) incorporated communities and eight (8) unincorporated communities. The reservation is geographically divided into units (TU). The majority of resident premises lie outside of incorporated city limits.

In 2012 the Nez Perce Tribe constructed a 175 mile long fixed wireless broadband network to serve unserved and underserved areas across the Reservation. For the most part, the Tribe's network was built in rings to facilitate redundancy in community connectivity; however a ring was not initially possible in building network coverage into Kamiah which is in the eastern portion of the reservation (See Figure 1). Also, in 2011, KIYE-FM, a tribally owned and operated noncommercial radio station went on the air. The KIYE broadcast is delivered from a Kamiah studio to a main transmitter on the prairie (on Tribal Unit 1945) utilizing the Tribe's broadband network. The purpose of the project is to help maintain connectivity of government facilities and the KIYE broadcast, and to establish a redundant network link to serve the community of Kamiah, Idaho. The purpose of the Tribal Homeland Security Grant Program is to help build and sustain tribal preparedness capabilities, including emergency communications.

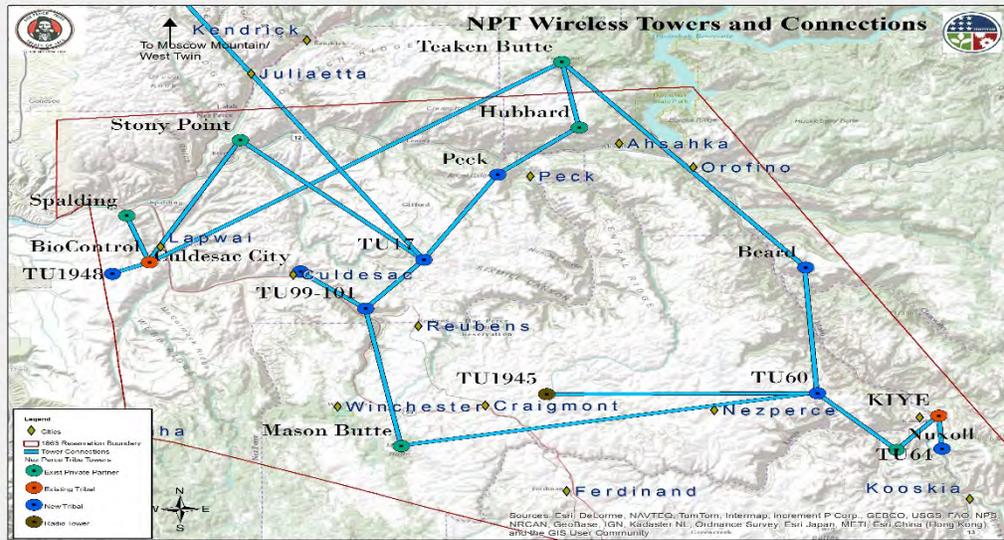


Figure 1. Map of Nez Perce Tribe Reservation telecommunications network

Need

The 2012 wireless telecommunications network that now covers much of the Nez Perce Reservation did not adequately support the community of Kamiah and the FM radio broadcast station, KIYE. Currently, the broadband connectivity in Kamiah is provided by a single 200 megabit per second connection to the Tribe’s telecommunications network. The lack of a redundant connection results in isolation of tribal communications to/from Kamiah when the Tribe’s primary telecommunications network wireless link fails.

Chapter 2: Alternative Analysis

There are two alternatives being considered in this EA:

- 1) No Action Alternative
- 2) Proposed Action Alternative, deploy a redundant fixed microwave path to serve Kamiah

Alternatives considered and dismissed are also briefly discussed.

2.1 No Action

Under the No Action Alternative, no FEMA funding would be provided and the Tribe's broadband network will be maintained and operated as is. Kamiah will continue to be isolated in times of telecommunications outages between the fixed wireless links in TU 60 – in Nuxoll and KIYE. Connectivity in and out of Kamiah would be at risk of failure in emergency situations when it's most needed.

2.2 Proposed Action: Deploy redundant fixed microwave path to serve Kamiah

The Proposed Action will construct 1) a 900 ft access roadway to build and maintain the telecommunication tower, 2) install 3,375 ft of buried power line, 3) grade an 80 ft by 80 ft compound, and 4) erect a 140 ft tall self-supporting telecommunications tower. Construction activities will be completed within Tribal Unit 62 (See Figure 2 and Appendix B-Maps and Photos). In addition, telecommunications equipment (radios/antenna) will be placed on the new tower and on two existing towers to create a network ring. The new telecommunication tower is located off Woodland Road at latitude 46.2756 north and longitude -116.0216 east and the access road begins at latitude 46.2775 north and longitude -116.0177 east.

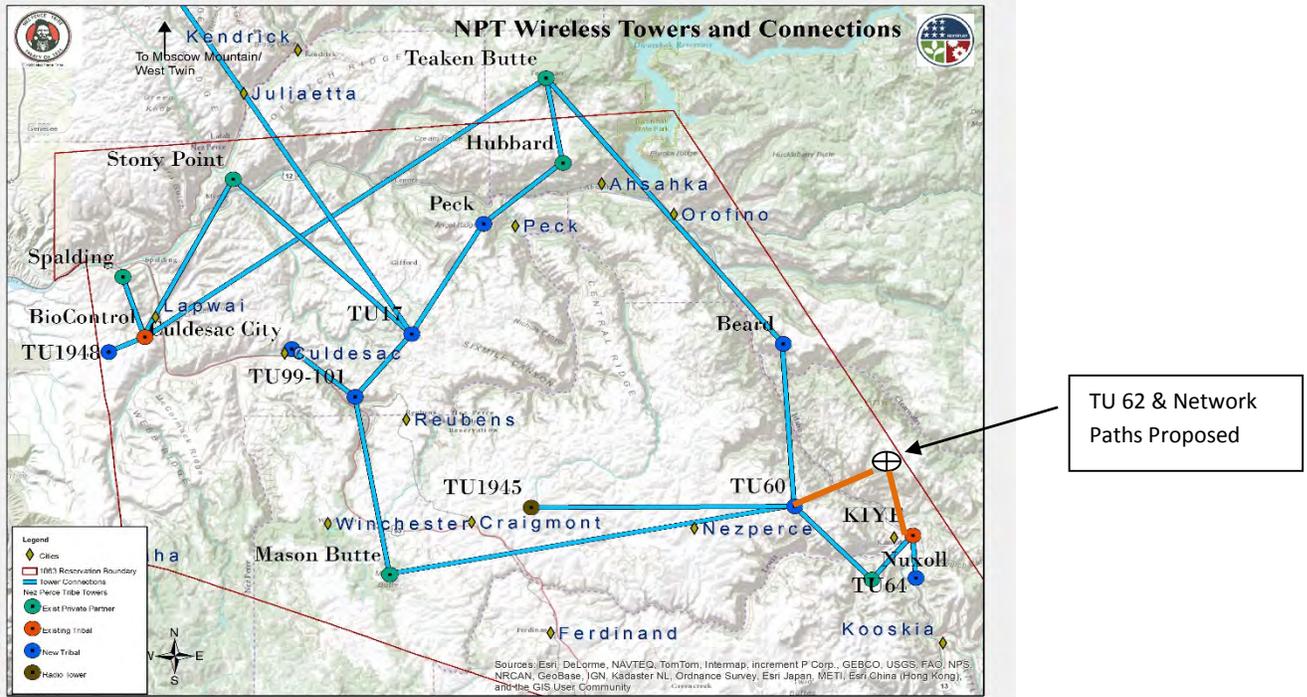


Figure 2. Map of Nez Perce Tribe Reservation proposed telecommunication tower and network paths

Access Road Construction

A 16 ft wide roadway right of way will be cleared of vegetation. Full bench construction will be used to create a running surface, including ditches. At the access road's beginning and junction with Woodland Rd an 18 inch culvert will be installed for stormwater drainage (see Appendix B-Maps). The roadway surface will be rocked with a six inch overlay of four inch minus pit run and cut/fill slopes will be seeded with grass for erosion control.

Electrical Service

Electrical service of 200 amps/240 volts will be delivered from the electrical service lines near the junction of Woodland & Rupp Road the closest location (Appendix B-Maps and Photos), where an overhead extension will be constructed to Tribal Unit 62. Thereafter conduit will be plowed in along a 3,375 foot path with pull boxed located every 800 linear feet. The conduit trench will be about forty inches deep and one foot wide. A 40 Kilowatt diesel back-up generator and 215 gallon above ground fuel tank may also be placed within the new tower site compound in the event of power outages.

Compound & Tower Construction

Vegetation will be removed from an 80 ft by 80ft compound, the area graded and leveled, and the tower foundation excavated (about 29ft by 29ft square and 6ft deep) according to manufacturer specification (Appendix C – Tower Construction Specifications). The tower will be stacked to 140ft above ground level. To support an eight by 12 ft communications equipment hut, two concrete stringers (8 inches wide by 8 feet long) will be poured. The compound will be layered with a weed barrier cloth and rocked with a

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4 inch overlay of 2 inch minus crushed rock. The compound will be enclosed with six ft high security fencing topped with three strand barbed wire.

The 140ft tower has been determined by the Federal Aviation Administration to be of no hazard to aviation (ASN 2014-ANM-2869-OE) therefore will not host an air traffic safety light.

Microwave installation detail

Two three foot diameter dish antenna with 11 Gigahertz licensed radios will be attached to the new 140 ft tower at 120 ft above ground. Each of these will link to radio/antennas mounted on existing towers: 1) KIYE the 100 ft tower on Tribal Unit 1359C at 401 Idaho Street in Kamiah (ASR 1274065) (latitude 46.2273 north and longitude -116.0266 west) at the height of 60 ft above ground; and the 180 ft tower on Tribal Unit 60 at 2948 Hwy 64 in Nezperce (ASR 1281282) (latitude 46.2513 north and longitude -116.1389 west) at the height of 140 ft above ground.

2.3 Alternatives Considered but dismissed

Several communication tower site options were considered and dismissed due to lack of proximity to power, and the requirement for line of sight to the existing towers for network connectivity.

Chapter 3 Affected Environment and Environmental Consequences

In this Chapter a description of the existing site conditions and potential impacts of each Alternative will be identified by resource area. The potential impacts will be characterized based on the following categories:

None/Negligible: The effects on the environment will be either be undetectable or localized and well below regulatory standards.

Minor: The effects on the environment will be measurable but localized and affect only the small vicinity where the action takes place; and, be well within regulatory standards. Mitigation measures could reduce potential adverse effects.

Moderate: Impacts on the environment will occur, be measureable, and have both localized and regional scaled impacts. Impacts would be within or below regulatory standards and will require mitigative measures to reduce potential adverse effects.

Major: The impacts to the environment will be readily measurable have significant consequences on the local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be require to reduce impacts, though long term adverse impacts to the resource will result from the action.

Impacts are predicted based on the degree of change or loss of the resource from the baseline conditions. Impacts may be direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later or are farther removed from the area but are still reasonably foreseeable (40 CFR Part 1508).

The following table provides a summary of findings.

Table 1. Summary of Potential Impacts

Resource	No Action Alternative	Proposed Action Alternative
Air Quality	None	Minor impacts during construction
Climate	None	None
Cultural & Historic Resources	None	None; a site survey and report in accordance with Section 106 was completed and no historic or culturally significant resources were identified
Geology & Soils	None	None to minor during construction
Water Resources	None	None; there are no bodies of water or wetlands within the project area
Biological Resources (Vegetation, Wildlife, Fish, Threatened and Endangered Species, Migratory Birds)	None	Negligible impacts are expected on site vegetation community from construction; there are no bodies of water or fish habitat within or adjacent to the project area; field reconnaissance found no evidence of threatened, endangered or sensitive species in the project area; and mitigative measures to reduce impacts on migratory birds are incorporated
Socioeconomics and Environmental Justice	Negligible impacts will result when communications networks fail	None; no adverse effects to public health or environmental effects on minority or low-income populations are expected
Security	None	None; the access road will have a locked gate, the compound will be secured with a security fence
Public Safety	Moderate adverse impacts to public safety and government service communications will continue to be inoperable when the network single link into Kamiah fails.	Moderate; positive impacts are expected in the community of Kamiah and across the Reservation with the deployment of a redundant communications network link into Kamiah supporting emergency responder communications and public information distribution on KIYE-FM
Hazardous Materials	None	None; there are no hazardous material used in the Proposed Action

3.1 Physical Resources

3.1.1 Air Quality

The Nez Perce Reservation is not part of an air quality district. In its 1990 revision of the federal Clean Air Act (CAA), the United States Congress recognized that Indian Tribes have the authority to implement air pollution control programs within the exterior boundaries of their reservations, similar to the authority states have to implement CAA programs within their state boundaries (excluding reservations). The U.S. Environmental Protection Agency's (EPA) Tribal Authority Rule gives Tribes the ability to develop air quality management programs, write rules to reduce air pollution and implement and enforce their rules in Indian Country. Thus, on the 1863 Nez Perce Reservation, the Nez Perce Tribe and EPA have the authority to implement the CAA.

The Nez Perce Tribe has operated an air quality program since 1998 and currently conducts activities under an EPA CAA 103 grant and an EPA Direct Implementation Tribal Cooperative Agreement (DITCA). EPA DITCA funding provides for administration of the EPA CAA Federal Implementation Plan, or FIP, on the reservation. The FIP is a set of air quality rules, known as the Federal Air Rules for Reservations (FARR), governing air pollution activities on the Nez Perce Reservation.¹

Existing Air Quality issues on the Nez Perce Reservation

The Nez Perce Reservation covers approximately 1,200 square miles and portions of five north central Idaho counties: Nez Perce, Latah, Idaho, Clearwater, and Lewis. These five counties are, generally, what has been defined in a Memorandum of Agreement with EPA, Nez Perce Tribe, and the Idaho Department of Environmental Quality as the Clearwater Air shed. The complex geography of the area (prairies, rolling hills, moderate to deep river valleys, forests, and mountains) contributes to varied microclimatic conditions.

Sources of Air Pollution

The Tribe's 2001, 2005 & 2008 emissions inventories, six years monitoring data, results of a community-based air toxics and school air toxics studies, and FARR and EPA permits show that air pollution sources within the exterior boundaries of the 1863 Nez Perce Reservation include three EPA-permitted major (Title V) sources (lumber mills), hot mix asphalt plants, boilers, unpaved roads, gravel mining and rock crushing operations, numerous smaller business area sources (smaller mills, gas stations, airports, etc.), mobile sources, aerial application of pesticides, and agricultural operations. An estimated 35 of the non-Title V business sources are FARR "registered" sources, with at least two having or in the process of having synthetic minor permits from EPA.

Agricultural, forestry, and open burning are significant air pollution sources impacting the Reservation, with around 50,000 agricultural acres burned annually. An estimated one-third of the agricultural acreage burned in North Idaho (north of the Salmon River) takes place on the Nez Perce Reservation. Significant agricultural and forestry burning takes place in the Clearwater Air shed outside of the 1863 Nez Perce Reservation boundary, and smoke can impact on-reservation communities. Wildfire smoke impacts the Clearwater Air shed every year. Woodstove use is prevalent and winter inversions trap these emissions in

valley communities. Indoor air quality issues on the Reservation are a factor due to poorly ventilated, constructed and/or maintained buildings.

Air quality issues of concern on and adjacent to the reservation include fine particulates (PM_{2.5}) from the sources discussed above (especially from combustion and burning), visibility, air toxics, indoor air quality, drift from aerial application of pesticides, and atmospheric deposition. Issues also exist for off-reservation tribal lands in usual and accustomed treaty areas, such as the Columbia River Gorge National Scenic Area, Hell's Canyon, and the Wallowa's, and include regional haze, air toxics, and atmospheric deposition.

3.1.2 Climate, Greenhouse Gases and Global Warming

The proposed project area lies within the Nez Perce Reservation, north central Idaho. Across the reservation the weather varies; Lapwai/Lewiston is a low point with a very mild Mediterranean climate and elevation of 750 ft, has average maximum temperature 63 degrees (Fahrenheit), average minimum temperature 41 degrees, average total annual precipitation of 12.7 inches, and average annual snowfall of 15.6 inches; compared to Nezperce, which lies on the Camas prairie at an elevation of 2,900 ft, has an average maximum temperature 56 degrees, average minimum temperature 34 degrees, average total annual precipitation of 21 inches, and average annual snowfall of 43 inches.

Greenhouse gases (Ghg) are components of the atmosphere that trap heat relatively near the surface of the earth, and therefore, contribute to the greenhouse effect and global warming. Most Ghg's occur naturally in the atmosphere, but increases in their concentration result from human activities. Global temperatures are expected to rise as human activities continue adding heat trapping gases to the atmosphere. Draft guidance on how to consider the effects of climate change and greenhouse gas emissions in NEPA documents is available from CEQ (2014), which suggests that quantitative analysis should be done if an action would release more than 25,000 metric tons of greenhouse gases per year.

3.1.3 Geology & Soils

The Nez Perce Reservation lies within three physiographic regions as described by US Geological Survey: the Northern Rocky Mountains region takes in the majority of the Reservation; the Walla Walla Plateau and Blue Mountain Section regions are represented on the western most edge of the Reservation. TU 62 lies within the Northern Rocky Mountain region which can be topographically characterized by alpine ridges, large U shaped valleys indicating the area has been glaciated. Major drainages are deeply incised with steep break lands.

Soil surveys have been completed across the Reservation by county; Table 2 represents the soil types for the new tower site location.

Table 2. Proposed Tower Site Soil types and development ratings

Site	Soil Type	Excavation Rating	Concrete corrosion Rating
TU 62	Kooskia silt loam	Very limited	Moderate
TU 62	Jacknife silt loam	Very limited	Low

Specific soil reports, generated via the USDA Natural Resource Conservation Service Web Soil Survey database (<http://websoilsurvey.nrcs.usda.gov>) for the construction site have been included in Appendix D.

The soils on the proposed construction site, Kooskia silt loam and Jacknife silt loam are likely to slough in shallow excavations. The typical profile of each is 0 – 18 inches silt loam and 18-60 inches silty loam/clay; they are moderately well drained. The soil induced electrochemical action that can weaken/corrode concrete risk is low to moderate. The soils data was taken into consideration for the tower foundation specification.

The Farmland Protection Policy Act of 1981 (FPPA), as amended (7 U.S.C. §§ 4201 et seq.), requires that Federal agencies minimize the extent to which their programs contribute to the unnecessary conversion of prime farmland, unique farmland, and land of statewide or local importance to non-agricultural uses. Farmlands subject to FPPA requirements may be forestland, pastureland, or cropland but cannot be urban built-up land. According to the USDA, a portion the project area has designated prime farmlands, Kooskia silt loam, which are traversed by the proposed access road near Woodland Road (see Appendix D).

3.1.4 Consequences of Alternatives

No Action Alternative

The No Action Alternative would have no impact on air quality, climate or geology and soils because no change to existing conditions would occur. The telecommunications network single link service would be maintained into the community of Kamiah.

Proposed Action Alternative

As a result of the Proposed Action tower construction minor temporary construction related adverse impacts to air quality and soils will likely occur as soil is exposed and excavated. Site grading, trenching, and placement of rock/gravel surfaces could result in localized fugitive dust, if necessary this can be minimized by periodically wetting the work area. According to the NRCS Soil Survey report, site soil and geological conditions have been determined suitable for the proposed tower to be built on. Long term adverse impacts will be minimized with rock surfacing and seeding exposed cut/fill banks to reduce risk of erosion and result in negligible negative impact on air quality and soils in and adjacent to the project

area. Although a small portion of the project has prime farmlands, placement of the gravel access road through it and construction of the tower uphill would not preclude future agricultural uses, hence the project would not constitute a conversion in land use or loss of prime farmlands. No changes to geological conditions are expected given the small scale of the project and relatively shallow site work. Given the small scale of the proposed action and lack of permanent emissions, construction and operation of the tower are not expected to affect climate conditions. No impacts to physical resources are anticipated from installation of additional equipment on the existing towers in Nezperce and at KIYE in Kamiah, because no construction is occurring.

3.2 Water Resources

There are many fresh water resources across the Nez Perce Reservation; all springs, seeps and tributaries feed the Clearwater River, which flows west to the Snake River and onto the Columbia River. Water quality is a key factor for the Nez Perce Tribe; its treaty rights include the ability to harvest anadromous fish from the rivers. This right has driven development of the Nez Perce Fisheries program, which is a global leader in fish habitat and run restoration within the Clearwater and Snake River systems.

The project area is in the Clearwater River drainage, however as depicted on the topographic map of the project site, there are no surface waters in or proximate to it. Executive Order (EO) 11990, Protection of Wetlands, requires Federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. According to the U.S. Fish and Wildlife Service's National Wetlands Inventory (2015), there are no wetlands proximate to the project area. EO 11988, Floodplain Management, requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The Nez Perce Tribe does not participate in the National Flood Insurance Program and thus does not have Flood Insurance Rate Maps available to delineate Special Flood Hazard Areas (floodplains). Based on the topographic map of the project area which has no notable surface waters in or proximate to the access road or tower site, there is no floodplains or flood hazards present.

The Middle Fork of the Clearwater River was designated a Wild & Scenic River in 1968. This drainage is outside of the proposed project area.

3.2.1 Consequences of Alternatives

No Action

The No Action Alternative will have no impact on water resources because no construction activities would occur.

Proposed Action

The Proposed Action construction site is located along a major ridge line; there are no floodplains, wetlands or streams in or proximate to the project area, so these resources will not be impacted. As described above, the ground disturbing activities associated with the Proposed Action include site grading, foundation excavation; access roadway construction, and power line trenching. All soil surface disturbance contract specifications will include erosion control measures to reduce the chance of soil

movement from the site. By implementing soil erosion reduction through construction best management practices the Proposed Action will minimize any stormwater caused soil erosion.

No impacts to water resources are anticipated from installation of additional equipment on the existing towers in Nezperce and at KIYE in Kamiah, because no construction is occurring.

No permits under the Clean Water Act are required to implement the proposed action.

3.3 Biologic Resources

The Nez Perce Reservation lies across several EPA defined eco-regions: in the west Canyons and Dissected Uplands and Highlands dominate the landscape; in the south Nez Perce Prairies; and, to the north and east the landscape is characterized as Grassy Potlatch Ridges, Lower Clearwater Canyons and the Clearwater Mountain Breaks. The Proposed Action is located within the Clearwater Canyons and Clearwater Mountain Breaks region. Botanical and wildlife surveys were conducted of the proposed tower site on June 10, 2015 (see Appendix E).

3.3.1 Vegetation

The project area is located along a major ridgeline above the Clearwater River, northwest of Kamiah. The site vegetation is dominated by Ponderosa pine (*Pinups ponderosa*), Douglas fir (*Pseudotsuga menziesii*) and understory shrubs ninebark (*Physocarpus capitatus*), thimbleberry (*Rubus parviflorus*) and with a mix of exotic grasses and remnants native forbs. During the survey evidence of logging was observed and no rare plant species were encountered.

3.3.2 Wildlife & Fish

The project area does not have streams, wetlands or bodies of water; therefore no aquatic habitat or fish are present.

The project area does have signs of use by terrestrial and avian wildlife for foraging, shelter and bedding. Tribal Unit 62 is a large contiguous landscape (1,409 acres) of mature Ponderosa pine/Douglas fir with several species of shrubs that provide forage for wildlife. No rare wildlife species were observed during the survey. TU 62 does have potential habitat for some species of concern, flammulated owl, pygmy nuthatch, and some bats.

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. §§ 703–711), provides Federal protections for migratory birds and their nests, eggs, and body parts from harm, sale, or other injurious actions. The act includes a “no take” provision. Many species of migratory birds occur in the Clearwater basin using a variety of habitats. Habitats used by the many species of birds include:

- Water Habitats: Loons, Grebes, Herons, Osprey, Kites, Eagles, Shore birds, Dippers, Gulls and Terns;
- Open Forest Habitats: Hawks, Warblers, Tanagers, Goatsuckers, Hummingbirds, Flycatchers, Jays, Magpies, Crow, Chickadees, Titmice, Nuthatches, Wrens, Thrashers, Waxwings, Finches, Turkeys
- Forest Edges & Disturbed areas: Starlings, Blackbirds, Meadowlarks, Orioles, Shrikes;
- Open rangelands: Magpies, Crows, Pipits, Falcons, Owls

A complete list of bird species known to occur within the Nez Perce Reservation has been included in Appendix E. The project location is not located within any known bird concentrations.

3.3.3 Threatened, Endangered, Sensitive Species

The Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §§ 1531–1544), was established to conserve, protect, and restore Threatened and Endangered species and their habitats. Section 7 of the ESA (16 U.S.C. § 1536) requires Federal agencies to ensure their actions do not jeopardize the continued existence of listed species and do not result in adverse modification to designated critical habitat. The US Fish & Wildlife Service (USFWS) was consulted and provided the following species to consider in the project area.

Table 3. Listed, Proposed and Candidate Species and Proposed Critical Habitat on the Nez Perce Reservation

Species Common Name	Bull Trout	Spaldings catchfly
Scientific Name	<i>Salvelinus confluentus</i>	<i>Silene spaldingii</i>
County	Status	Status
Idaho	Threatened, Proposed Critical Habitat	Threatened

Bull trout critical habitat designated by the USFWS, September 30, 2010 includes the Clearwater River, Snake River Hells Canyon Complex, and the Salmon River basin; these drainages encompass all flowing water across the Nez Perce Reservation. The Proposed Action will take place within the Clearwater River drainage, which is designated Bull trout habitat; however, there are no bodies of water in the project area.

Spalding’s catchfly is a species primarily of the Palouse prairie. It grows on mesic grassland prairies at low- to mid- elevations. Associated species include Idaho fescue (*Festuca idahoensis*), bluebunch wheatgrass (*Agropyron spicatum*), Nutka rose (*Rosa nutkana*), purple avens (*Geum triflorum*), sticky geranium (*Geranium viscosissum*), balsamroot (*Balsamorhiza sagittata*), and scattered Ponderosa pine (*Pinus ponderosa*). There are small portions of potential suitable habitat for Spalding’s catchfly within the Proposed Action area and across the Nez Perce Reservation, however the project site is too dry to support Spalding’s catchfly.

3.3.4 Consequences of Alternatives

No Action

The No Action Alternative will have no impact on biological resources because no FEMA funded activities would occur.

Proposed Action

The Proposed Action construction site is located along a major ridge line; there are no wetlands or streams present, so no impacts to aquatic resources or fish are expected.

The ground disturbing activities associated with the Proposed Action described above include site grading, foundation excavation, access roadway construction, and power line trenching. In the access roadway construction and to clear the 80' x 80' compound, twenty trees have been marked for removal. Within the access roadway and tower compound all understory vegetation will be removed and site maintenance activities will eradicate vegetation from these areas. The total area of vegetative removal will be about 20,800 square feet or 0.44 acres. Site development activities could have minor, localized, and scattered impacts to wildlife through habitat modification. Various factors, including changes in food sources, shelter, population density, and dispersal effort, would determine the severity of impacts to non-listed wildlife. However, within the scope of the 1,409 acres of available habitat in TU62, the Proposed Action will have a negligible effect on wildlife and habitat. USFWS provided concurrence to a no effect determination to ESA listed species on June 16, 2015 (see Appendix E).

To reduce potential impacts on migratory bird populations the design specifications will include non-guyed tower construction; no lights on the tower; and, the light on the communications hut will be downward tilted, shielded and motion activated. Moreover, construction will be scheduled outside of the migratory bird nesting season, which ranges from March through September depending on location and species. If site development cannot occur outside of the nesting season a qualified biologist can survey the site to ensure no active nests are present, or include conservation measures if some are found. Based on the site location and by implementing these conservation measures impacts to migratory birds will be negligible as a result of the Proposed Action.

All soil surface disturbance contract specifications will include placement of seed to reduce the potential for invasive weeds to populate the site. In addition, ground disturbing equipment will be washed prior to entering the site to minimize the possibility of invasive non native vegetation establishment. By these mitigative measures during and following construction the Proposed Action will have negligible impacts on site and surrounding vegetation.

No impacts to biological resources are anticipated from installation of additional equipment on the existing towers in Nezperce and at KIYE in Kamiah, because no construction is occurring and the equipment will not increase the height of the towers.

3.4 Historic, Cultural & Native American Resources

The National Historic Preservation Act of 1966 (NHPA) directs the federal government to consider the effects of its actions on historic and cultural resources under Section 106. The Nez Perce Tribe has designated a Tribal Historic Preservation Officer (THPO) and in accordance with the NHPA the Proposed Action has been evaluated for cultural resource impacts and provided to both State and THPO in Idaho and neighboring Tribes. Construction and modification of communications towers are subject to Federal Communications Commission (FCC) licensing, and consequently undergo Section 106 review under the NHPA. FEMA uses the FCC's Section 106 process for its compliance under the authority of a Program Comment issued in 2009 by the Advisory Council on Historic Preservation. The Nez Perce entered project information into the FCC's Tower Construction Notification System to begin the compliance

process. The Nez Perce Tribe Cultural Resource program staff was contacted and a site review effort was performed in 2014. The THPO/Tribal Archaeologist completed a report of the field reconnaissance and records research findings (see Appendix F-Cultural Resource Report).

3.4.1 Consequences of Alternatives

No Action

The No Action Alternative would have no impact on cultural resources or historic properties because no site development activities would occur without FEMA funding.

Proposed Action

The survey of the project area did not identify any cultural resources that may be affected. The Proposed Action Alternative has been reviewed by the Nez Perce Tribe Cultural Resource program archaeologist and the THPO who determined actions will have no effect on historic or cultural resources on 9/29/2014 and 1/16/2015 respectively (through Bureau of Indian Affairs NEPA checklist). No comments were provided from neighboring tribes. No impacts to cultural resources are anticipated from installation of additional equipment on the existing towers in Nezperce and at KIYE in Kamiah, because no construction is occurring.

3.5 Socioeconomic Resources

3.5.1 Environmental Justice

Executive Order 12898, Environmental Justice for Low income and Minority populations (1994), directs agencies to make achieving environmental justice part of its mission. It requires agencies to avoid highly disproportionate and adverse environmental and economic effects to minority and low income populations. The Nez Perce Tribe has approximately 3,700 members and the Reservation is located across four counties in north central Idaho (Clearwater, Idaho, Lewis, and Nez Perce). The project area is located within Idaho County on the Nez Perce Reservation.

The following demographics are reported on the Nez Perce Reservation for all races from the US Census.

The total population includes all people living within the exterior boundaries of the Nez Perce Reservation. According to the US Census (2010) there were 2,310 Native Americans included in the total population of 18,437 people of all races living with the Nez Perce Reservation (Figure 3).

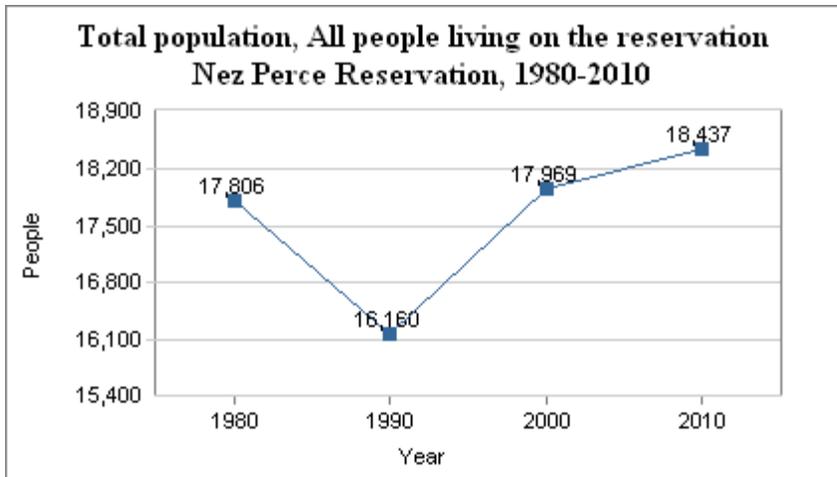


Figure 3. Graph showing total population living on the Nez Perce Reservation from 1980 to 2010.

Poverty rate reporting is a percentage of people living below the poverty threshold. In 2013, 3,111 people lived in households with income below the poverty threshold on the Nez Perce Reservation (Figure 4).

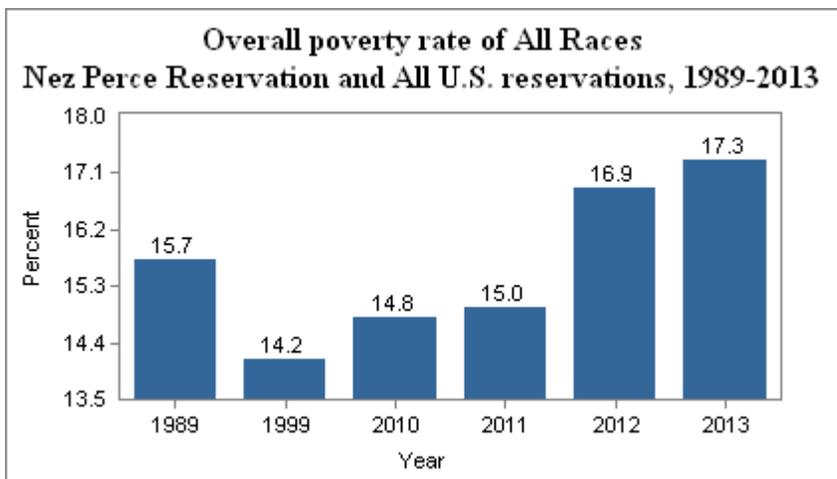


Figure 4. Graph showing total poverty rate of all US reservation from 1989 to 2013.

The Proposed Action Alternative will enhance telecommunication capacity and make the network resilient in times of natural and human caused disasters affecting the community of Kamiah and across the Nez Perce Reservation. All populations within the service area would equally benefit from the improved service. Also the project location is remote, there is no development proximate to it that could be affected by site development. Accordingly no detailed analysis for impacts to minority and low-income populations was conducted.

3.5.2 Economic Resources

Within the Reservation and across north central Idaho the low population density (Clearwater County 3.6, Idaho 1.8, Lewis 7.8 persons per square mile respectively) is locally recognized as a double edged sword. The low densities offer a rural lifestyle with scattered pockets of small communities nestled along river edges, atop prairies or at the foothills of the Clearwater Mountains. Natural resourced based economies

continue to drive local sustainability; due to the remote nature of the region and its superior natural resources and the quality of life that is often associated with natural settings a small number of niche manufacturers have established offering new living wage earning opportunities; government employment continues to be the largest employment sector (local government, schools, agencies) and health care is a sector experiencing growth. The Nez Perce Tribe (government and enterprises) was recently identified as the third largest employer in the four county region encompassing the Reservation.

The vast majority of newcomers to the Reservation are older and relocating for the scenic qualities of the area. According to the latest Census data the population across the Reservation shows an 8.9% drop in ages 18 and under, compared to a 13.6% growth in Idaho and 3% growth Nationally; a growth of 7.7% of those over 18 – 62, compared to 21% growth in Idaho and 11% growth Nationally; and a growth of 21.3% of those over 62, compared to 33% growth in Idaho and 13% growth Nationally. The data suggests this region of Idaho is growing slower and older than the rest of the state.

3.5.3 Noise

The Nez Perce Reservation lies within a very rural and remote part of Idaho. The four counties that lie within the Reservation have an average of 4.4 persons per square mile. Major transportation corridors are limited in Idaho to two state highways within the Reservation: Hwy 95 north-south; Hwy 12 east-west; secondary state and local highways cross the Reservation connecting communities to the more major routes. Rural areas have ambient noise levels of 30-40 decibels (dBA).

According to a report on Construction noise by the British Columbia Workmen’s Compensation Board the noise produced by operation of construction equipment measure in A rated dBA is presented in the following table.

Table 4. Noise production of typical construction equipment

Equipment	dBA avg	dBA range
Dozers	96	89-103
Excavators	87	86-90
Mobile cranes	100	97-102
Graders, trucks, concrete pumps, mixers	< 85	

Noise production on site during the times of construction will range from ambient levels of 30-40 dBA to peaks of 142 dBA when mobile cranes are in operation. Construction activities will operate during normal working hours (7 am – 5 pm) and are expected to be no longer than two weeks. It is not likely that noise levels on the tower development site will impact area residents or other potentially sensitive noise receptors as there is no development within one-quarter of a mile.

3.5.4 Traffic

The proposed new tower site is accessible from a two lane paved county roadway. The route to the Proposed Action site includes several switchbacks as the roadway travels up the canyon land above the Clearwater River from Kamiah, Idaho. Because the site is relatively remote, there is little traffic in the vicinity and construction and operation of the tower will not noticeably change traffic patterns.

3.5.5 Public Services and Utilities

The lack of available telecommunications infrastructure has been a driving factor in the Nez Perce Tribes efforts to deploy reliable/redundant telecommunications network connections across the Reservation. Transportation corridors are limited across the Reservation: one north-south highway (ID 95) and one east-west highway (US 12); local highway District and or County roadways make up the bulk of transportation corridors. The Proposed Action Alternative site will be access from an existing two lane paved county roadway.

Electricity to the Proposed Action Alternative site is served by Idaho County Light & Power Coop Assoc.; a 3,375 foot line extension will be included to connect the proposed tower site to the utility grid. The utility has sufficient capacity to support the proposed tower operation.

3.5.6 Public Health and Safety

Construction workers will adhere to all required safety regulations under the applicable Tribal Occupational Safety & Health Administration (TOSHA) guidelines. Guidelines related to the Proposed Action include: OSHA Title 29 CFR Part 1910 General Industry and Part 1926 Construction.

The site proposed for construction is not publicly accessible and the newly constructed access road will be gated to further reducing public access.

3.5.7 Consequences of Alternatives

No Action

The No Action Alternative will have no impact on most of the socioeconomic resources of the community of Kamiah, Idaho or across the Nez Perce Reservation, because no funding would be provided or site development completed. The No Action Alternative would perpetuate existing telecommunications connectivity vulnerabilities for public safety entities and government services in the community of Kamiah which could impact responses in an emergency.

Proposed Action

In the Proposed Action Alternative, construction of a telecommunications tower, and installation of additional communication equipment on two existing towers will benefit public safety and commercial mobile carries interested in expanding coverage in the community of Kamiah, Idaho. The addition of broadband backhaul with a redundant loop will benefit communications capacity for public safety, government services and private sector entities located in and near Kamiah, Idaho. The entire population would benefit from the improved service. The enhanced telecommunications capacity in Kamiah and Nezperce is likely to bring long term positive impacts related to environmental justice, economic opportunity and public safety.

The Proposed Action Alternative will have no negative impacts on Socioeconomic Resources of the community of Kamiah or across the Nez Perce Reservation.

3.6 Hazardous Materials

The site proposed for development is not within or adjacent to known Brownfield sites or areas with known hazardous substances. The site has had no prior development, but was logged. The proposed development does not include the use of hazardous materials.

3.6.1 Consequences of Alternatives

No Action

The No Action Alternative would not generate any concerns related to hazardous materials, because no site activities would occur.

Proposed Action

The Proposed Action Alternative does not propose to use or store hazardous materials. There would be no concerns of or impacts from hazardous materials related to implementation of the Proposed Action Alternative.

3.7 Cumulative Impacts

CEQ regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for Federal projects. Cumulative effects are defined as:

... the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.7).

Cumulative effects were determined by combining the effects of these alternatives with other past, present, and reasonably foreseeable future actions.

The Nez Perce telecommunications network redundancy project will construct a new telecommunications tower and utilize two existing towers in deploying a redundant wireless backbone loop to serve the community of Kamiah, Idaho. There have been no other recent tower or major infrastructure projects constructed in the past two years. Verizon Wireless has proposed to construct a cellular tower near the community of Kamiah during the fall of 2015. The proposed Verizon Wireless site is about 3 miles southeast of the Proposed Action.

Cumulative impacts as a result of the Verizon Wireless project being implemented in a similar timeframe of the Proposed Action is not expected to cause any long term negative environmental or cultural resource impacts in the general project area because it is so rural and each project is relatively small. The Proposed Action combined with the Verizon project will offer long term positive benefits to the public safety and emergency management communications capacity, to providing government services, and public information broadcast across KIYE –FM air waves.

Chapter 4 Agency Coordination and Public Involvement

The following resource or regulatory entities were contacted during development of this EA.

Nez Perce Tribe Programs:

- Biological Resources: for botanical and wildlife resource site assessment
- Forestry: for site access considerations, forestry impacts and road construction/reconstruction guidance
- Cultural Resources: for archaeological assessment
- Environmental Restoration & Waste Management: for air quality
- Land Services: for site development impacts on agricultural and grazing leases on Tribal Units
- Geographic Information Systems: for spatial analyses and map development

US Fish & Wildlife Service: for information about ESA-listed species

Federal Aviation Administration: regarding off-airport tower construction and air navigation hazards

The Nez Perce Tribe holds a General Council for all of its members and the public twice yearly (May & September) where project and government operations updates are provided. The Proposed Action Alternative was included in the agenda package for tribal members September 4-6, 2014 and May 7-9, 2015. The Nez Perce Tribal Executive Committee and Subcommittee agendas are made available to Tribal members and public participation is encouraged during Subcommittee project development presentations. The Nez Perce Tribal Executive Committee discussed the Proposed Action Alternative on September 23, 2014 and approved the tower siting on TU 62 on January 29, 2015. Through these public venues there were no initial public comments received regarding the Proposed Action Alternative.

A public notice is required for the Draft EA and is included as Appendix G. The public and agencies will have the opportunity to comment on the Draft EA for 30 days after publication of the notice. The notice identifies the action, location of the proposed site, participants, how to access the Draft EA, and how to submit comments. FEMA and the Tribe will review all substantive written comments for issues that need to be addressed and will incorporate any resolutions into the Final EA, as appropriate.

Chapter 5 Applicable Environmental Permits, Conditions, and Mitigation Measures

The following permits will be required for project implementation.

From the FAA, Off Airport Tower Construction Permits for each of the tower sites has been initiated through the FAA online Form 7460.

From the Bureau of Indian Affairs, Timber Cutting Permit has been processed and a Service Line Agreement for electric service will be completed following construction.

From Idaho County a road construction permit for ingress/egress along Woodland Road has been issued.

From the Nez Perce Tribe a Timber Cutting Permit has been issued.

The Tribe would comply with the following project conditions and mitigation measures during project implementation:

- The Tribe is responsible for securing all applicable Tribal, State and Federal permitting before site work and complying with conditions therein.
- Before and during site work, the Tribe is responsible for selecting, implementing, monitoring, and maintaining Best Management Practices to control soil erosion and sedimentation, reduce spills and pollution, and habitat protection.
- The Tribe should avoid construction activities, including staging and vegetation removal, within the project area between March and September (migratory bird nesting season). If activities must occur during migratory bird nesting season, then the Tribe must have a qualified biologist conduct a site survey of the project area to determine if there are active migratory bird nests in the area. If active migratory bird nests are identified and could be affected, then the Tribe must coordinate with the USFWS prior to proceeding with the work to determine if a permit under MBTA is required or if other measures can be taken to address adverse impacts to migratory birds.
- In the event that cultural resources are discovered during project activities, and in compliance with Tribal and Federal laws protecting cultural resources, including Section 106 of the NHPA, work in the immediate vicinity would cease, the area would be secured, and the THPO and FEMA would be notified.
- Any change to the approved scope of work would require re-evaluation for compliance with NEPA and other laws and EOs before implementation.

Chapter 6 Conclusion

The Nez Perce Tribe's broadband network is delivered for the most part across a redundant loop therein offering resilient connections in times of partial network failure; however, the link serving the community of Kamiah is not along a network loop. The Proposed Action addresses the current lack of redundant connectivity impacting critical community facility and public safety communication. This Proposed Action will enable redundant gigabit wireless telecommunications infrastructure to be deployed, enhancing service to the community of Kamiah, Tribal Police, Tribal governance and KIYE, a tribally owned locally originated FM broadcast station.

This EA and the evaluations considered in it indicate no significant negative impacts will result from implementation of the Proposed Action Alternative.

Chapter 7 Preparers

Preparer:

Christina St Germaine
Project Leader
Nez Perce Tribe Department of Technology
Services
PO Box 365
Lapwai, ID 83540

FEMA Reviewer:

Science Kilner
FEMA Region 10
Deputy Regional Environmental Officer
130 228th Street SW
Bothell, WA 98021

Chapter 8 References

- Eaton, S. 2000. *Workers Compensation Board of BC Engineering Section Report: Construction Noise*. February.
- Idaho Department of Labor. 2015. Regional Economist, Kathryn Tacke for data regarding demographics, poverty and employment <http://lmi.idaho.gov>.
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- _____. 2014. E-mail communication with John DeGroot, Director Forestry to Chris St. Germaine requesting assistance in road layout and timber cruise. October 27, 2014.
- _____. 2014. E-mail communication with Jeff Cronce, Forester regarding cruise data for project. November 25, 2014.
- _____. 2015. Memo communication from Kerry Barnowe-Meyer, Wildlife Biologist, Wildlife Division to Chris St. Germaine regarding tower site wildlife and botanical surveys. June 16, 2015.
- Noise Pollution Clearinghouse. 2015. Information on ambient noise levels. Available at: www.nonoise.org. Accessed June 2015.
- Norman, Jared. 2014. *Cultural Resources Survey for the Proposed Kamiah Telecommunications Tower*. Nez Perce Tribe Cultural Resource Program, Lapwai, ID
- University of Idaho. 2015. Nez Perce Reservation demographic data. Available at: www.indicatorsnorthwest.org. Accessed July 2015.
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- _____. 2015. E-mail communication with Bob Kibler, Biologist, USFWS, to Chris St. Germaine, Nez Perce Tribe, regarding ESA consultation. June 16, 2015.

APPENDIX A

Nez Perce Tribe Resolutions

NP 14-433 Accepting Tribal Homeland Security Grant fund award

NP 15-150 Authorizing the use of Tribal Unit 62 for telecommunications tower construction

RESOLUTION

WHEREAS, the Nez Perce Tribal Executive Committee has been empowered to act for and on behalf of the Nez Perce Tribe, pursuant to the Revised Constitution and By-Laws, adopted by the General council of the Nez Perce Tribe on May 6, 1961 and approved by the Acting Commissioner of Indian Affairs on June 27, 1961; and

WHEREAS, the Nez Perce Tribe (Tribe) is a federally recognized Indian Tribe that provides essential government services on and adjacent to the Nez Perce Reservation; and

WHEREAS, the Tribe has developed a large wide area wire network for services necessary to operate for business, emergency response, and law enforcement; and

WHEREAS, the Tribe was awarded funds from the Tribal Homeland Security Grant Program (THSGP) to construct a tower to serve as a redundant connection into Kamiah; and

WHEREAS, the Department of Technology Services staff has coordinated with the Tribal Historic Preservation Office to insure the new tower site location and construction efforts will not impact cultural historic values; and

WHEREAS, a site on Tribal Unit 62, located at 46°16'32.28"N and 116°1'17.77"W provides the best coverage and connectivity; and

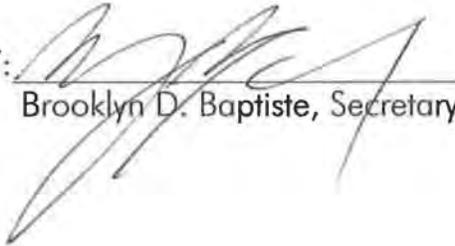
WHEREAS, the tower site construction and access roadway will impact less than one (1) acre of the 135 acre Tribal Unit under the National Environmental Policy Act (NEPA) Exclusion Rules.

NOW, THEREFORE, BE IT RESOLVED, that the Nez Perce Tribal Executive Committee (NPTEC) hereby authorizes the use of one (1) acre of Tribal Unit 62, located at 46°16'32.28"N and 116°1'17.77"W for access and tower site construction funded by a grant awarded by the Bureau of Homeland Security Tribal grant program for a total not to exceed \$220,000.00; and

BE IT FINALLY RESOLVED, that the NPTEC Chairman and Secretary are hereby authorized to sign the required documents for the tower site construction and the NPTEC Treasurer is hereby authorized to disburse funds accordingly.

CERTIFICATION

The foregoing resolution was duly adopted by the Nez Perce Tribal Executive Committee meeting in Special Session, January 27, 2015 in the Richard A. Halfmoon Council Chambers, Lapwai, Idaho, a quorum of its Members being present and voting.

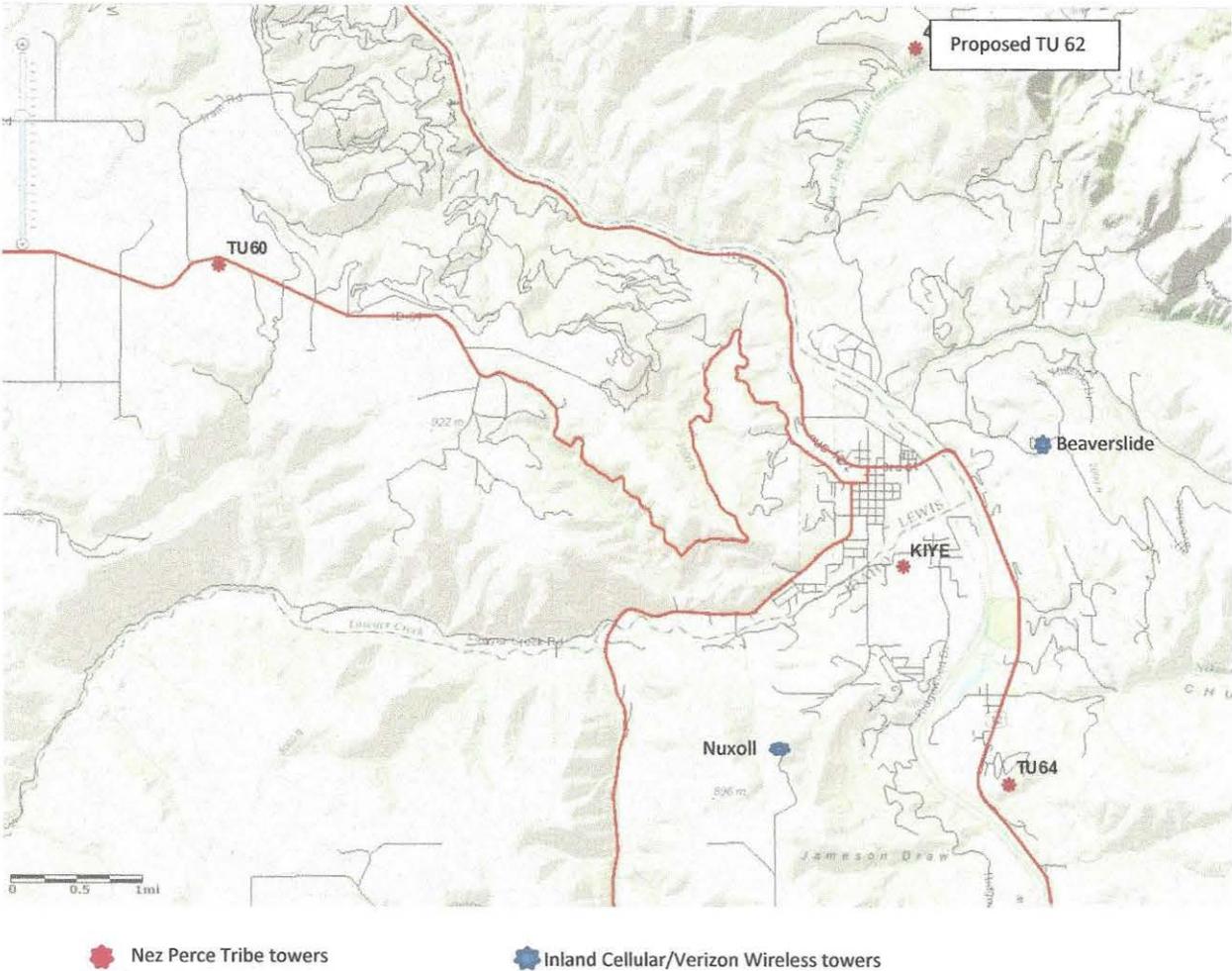
BY: 
Brooklyn D. Baptiste, Secretary

ATTEST:

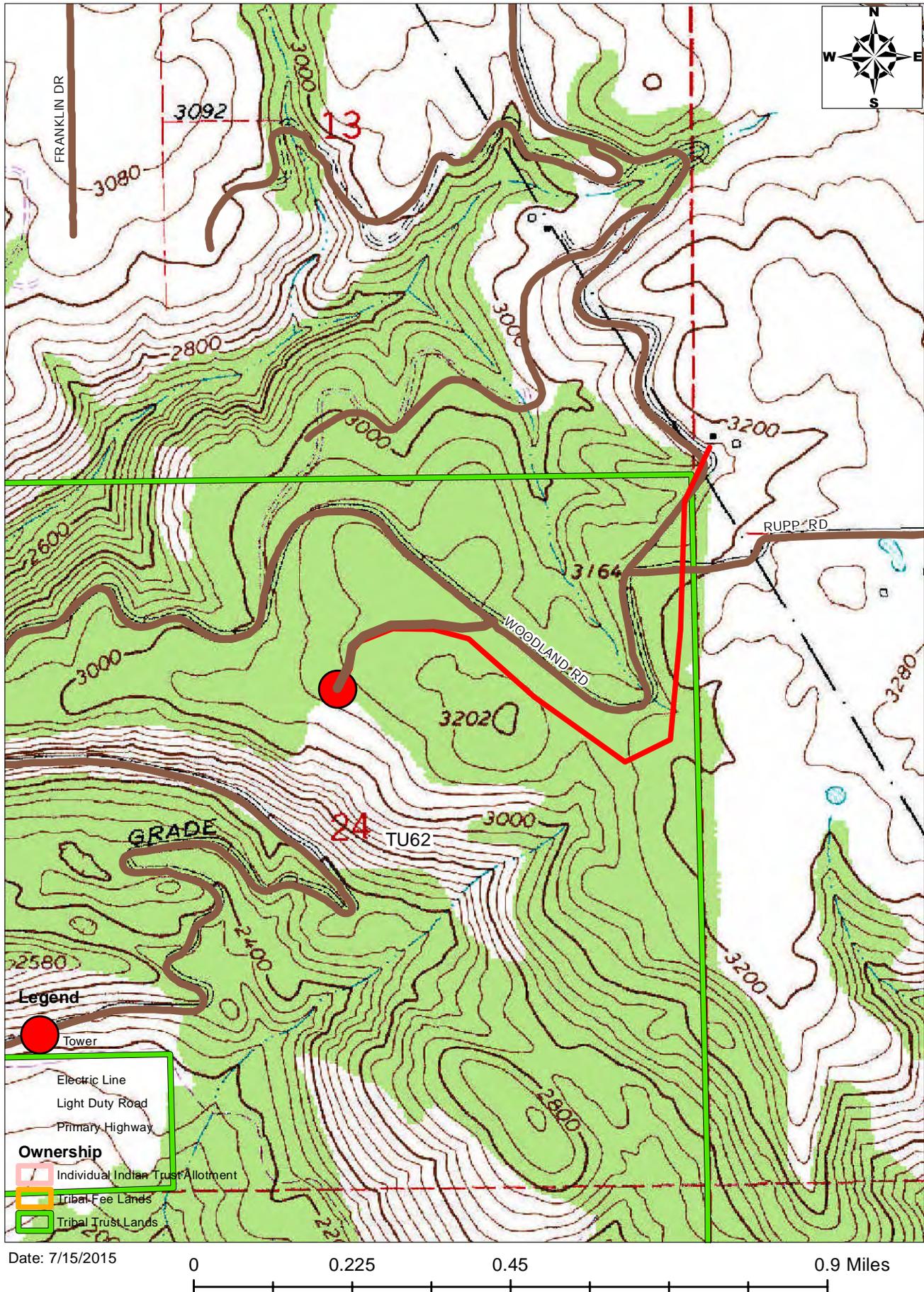

Silas C. Whitman, Chairman

APPENDIX B: Maps and Site Photos

Towers in vicinity of Kamiah ID



TU-62 Tower Site



The information depicted within this map/image was compiled from a variety of credible sources and maintained by the Land Services - GIS Program. This map/image does not contain land survey grade information; therefore, should not be used to determine exact land parcel boundaries. The user assumes all responsibility for the suitability of this map/image for a specific application. This product is property of the Nez Perce Tribe and its use is thereby restricted.

Idaho County Light & Power Cooperative Electric Utility Grid



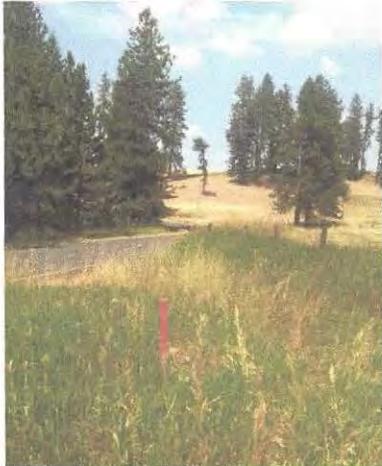
TU 62 Site Photographs



Access point of ingress/egress from Woodland Rd



Path through TU 62 of access road



Aerial link Elec Service



Transition from aerial to buried line



Buried line path



TU 62 Proposed Tower Site



Inland Cellular existing Beaverslide tower and site of proposed Verizon Wireless tower

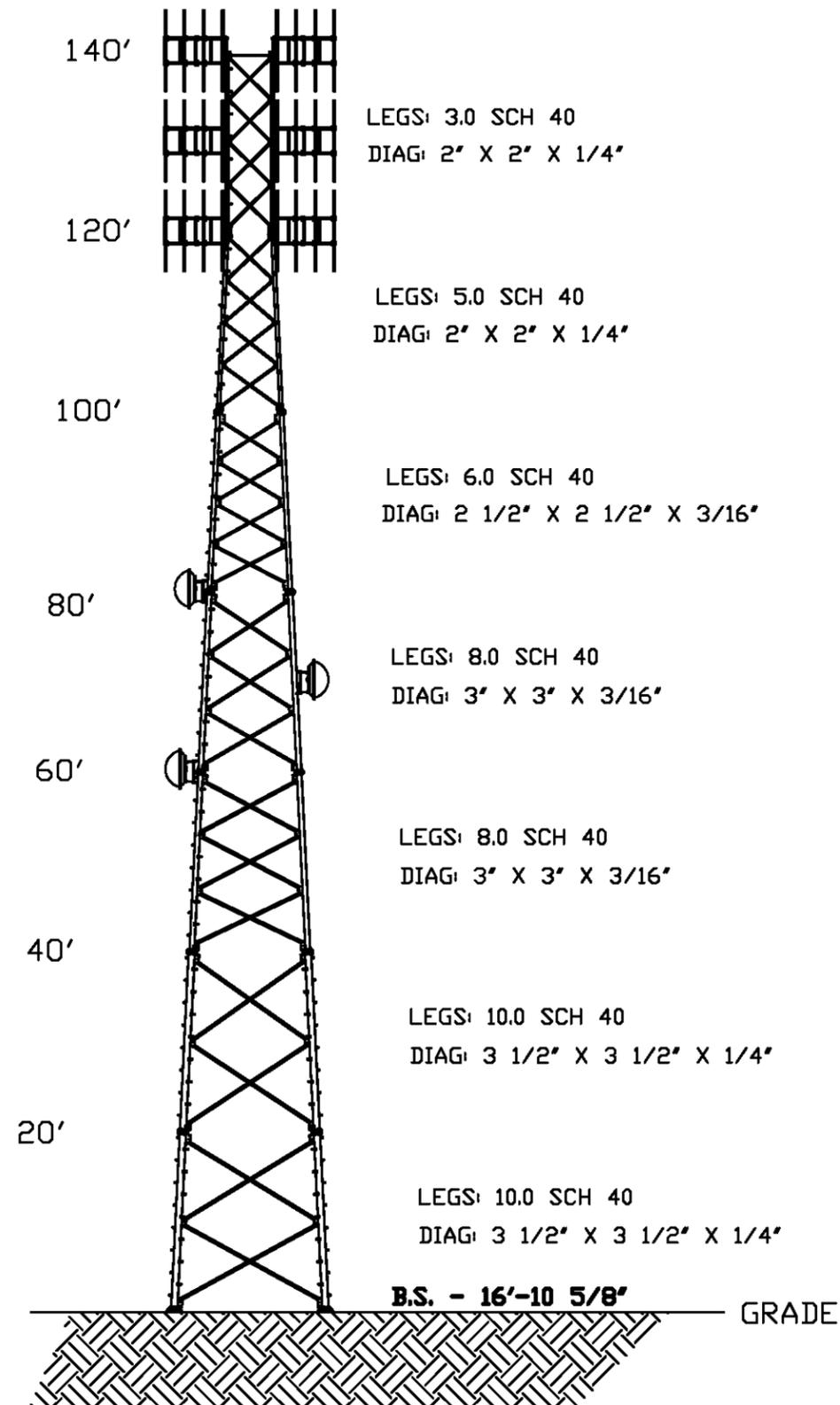
APPENDIX C: Tower Specifications



EHRESMANN ENGINEERING, INC.
 CONSULTING ENGINEERS
 4400 WEST 31ST STREET
 YANKTON, SD 57078
 (605) 665-7532
 (605) 665-9780

TOWER DESIGN LOADS:

- OPTION #1 - PROPOSED TOWER WITH
- PROPOSED ANTENNAS
 - ANALYSIS PER TIA-222-G
 - 90 MPH WIND & NO ICE
 - 40 MPH WIND & 1/4" ICE
 - STRUCTURAL CLASS II
 - EXPOSURE CATEGORY C
 - TOPOGRAPHIC CATEGORY 2
 - CREST HEIGHT 1619' FT
 - IDAHO COUNTY, ID
 - SITE LOCATION:
 - LATITUDE: 46° 16' 36.42" N
 - LONGITUDE: 116° 2' 9.72" W



ELEV.	ITEM	RAD.	AZ.	LINE
140'	(3) 14' EEI T-FRAMES	---	---	
140'	(12) 8' X 1' X 6" PANELS	---	---	(12) 1 5/8"
140'	(12) RRU 19.7' X 17' X 7.2'	---	---	
140'	(3) DC6-48 60-18-8F	---	---	
130'	(3) 14' EEI T-FRAMES	---	---	
130'	(12) 8' X 1' X 6" PANELS	---	---	(12) 1 5/8"
130'	(12) RRU 19.7' X 17' X 7.2'	---	---	
130'	(3) DC6-48 60-18-8F	---	---	
120'	(3) 14' EEI T-FRAMES	---	---	
120'	(12) 8' X 1' X 6" PANELS	---	---	(12) 1 5/8"
120'	(12) RRU 19.7' X 17' X 7.2'	---	---	
120'	(3) DC6-48 60-18-8F	---	---	
80'	ANDREW 4' DISH	YES	---	EW63
70'	ANDREW 4' DISH	YES	---	EW63
60'	ANDREW 4' DISH	YES	---	EW63

NOTES:

1. TOWER DESIGNED ACCORDING TO TIA-222-G.
2. ANTENNA LOADS FROM MANUFACTURING SPECIFICATIONS AND ANDREWS BULLETIN 1015F.
3. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY, A.W.S. D 1.1.
4. ALL TOWER MEMBERS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO ASTM A123.
5. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE, ASTM A153.
6. BOLTS
 - A. BOLTS IN TENSION ASTM A325
 - B. STEP BOLTS ASTM A307
7. ALL ITEMS MUST BE INVENTORIED AT THE TIME OF DELIVERY TO THE JOB SITE/STORAGE FACILITY. ANY SHORTAGES REPORTED AFTER THIS DELIVERY WILL BE THE RESPONSIBILITY OF THE CONTRACTOR/OWNER

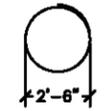
ANY PROBLEMS THAT OCCUR WITH SCHEDULING, TRANSPORTATION, DELIVERY, FOUNDATION INSTALLATION, ERECTION OR ANY ITEMS FURNISHED BY EEI MUST BE REPORTED IMMEDIATELY TO ALLOW EEI TIME TO TAKE CORRECTIVE MEASURES. EEI WILL MAKE EVERY EFFORT TO REPAIR/REPLACE NECESSARY ITEMS IN AN EXPEDITED MANNER AND/OR WILL PURSUE CORRECTIVE MEASURES IN THE MOST ECONOMICAL WAY POSSIBLE AT OUR DISCRETION. HOWEVER, UNDER NO CIRCUMSTANCES WILL EEI PAY FOR OR BE RESPONSIBLE FOR ANY DOWN TIME OR EXPENSES INCURRED DUE TO DOWN TIME.

8. TOWER LEGS SHALL BE 50 KSI. ALL OTHER STEEL SHALL BE ASTM A36 MINIMUM.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EHRESMANN ENGINEERING, INC. AND SHALL NOT BE REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS OF THE MANUFACTURE OR SALE OF ITEM(S) WITHOUT WRITTEN PERMISSION.

SITE: TU-62, ID (NEZ PERCE TRIBE)

140' EHRESMANN SELF SUPPORTING TOWER	
EHRESMANN ENGINEERING, INC. CONSULTING ENGINEERS 4400 WEST 31st. STREET YANKTON, SD 57078 (605) 665-7532 (605) 665-9780	DATE: 04/30/15
	BY: TR
	CHECKED:
J.D. 94160	DWG # 94160-C01 SHT C01 OF

MATERIAL LIST				
ITEM	QTY	GRADE	DESCRIPTION	
A	70	60 KSI	#10 BARS BOTH WAYS (TOP)	28'-6"
B	70	60 KSI	#10 BARS BOTH WAYS (BOTTOM)	28'-6"
C	48	60 KSI	#8 BARS	6'-4" 15"
D	24	40 KSI	#4 TIES ON 12" CTC	 20" LAP
E	30	105 KSI	1 1/4"Ø 105 KSI 6'-0" LONG	6'-0"

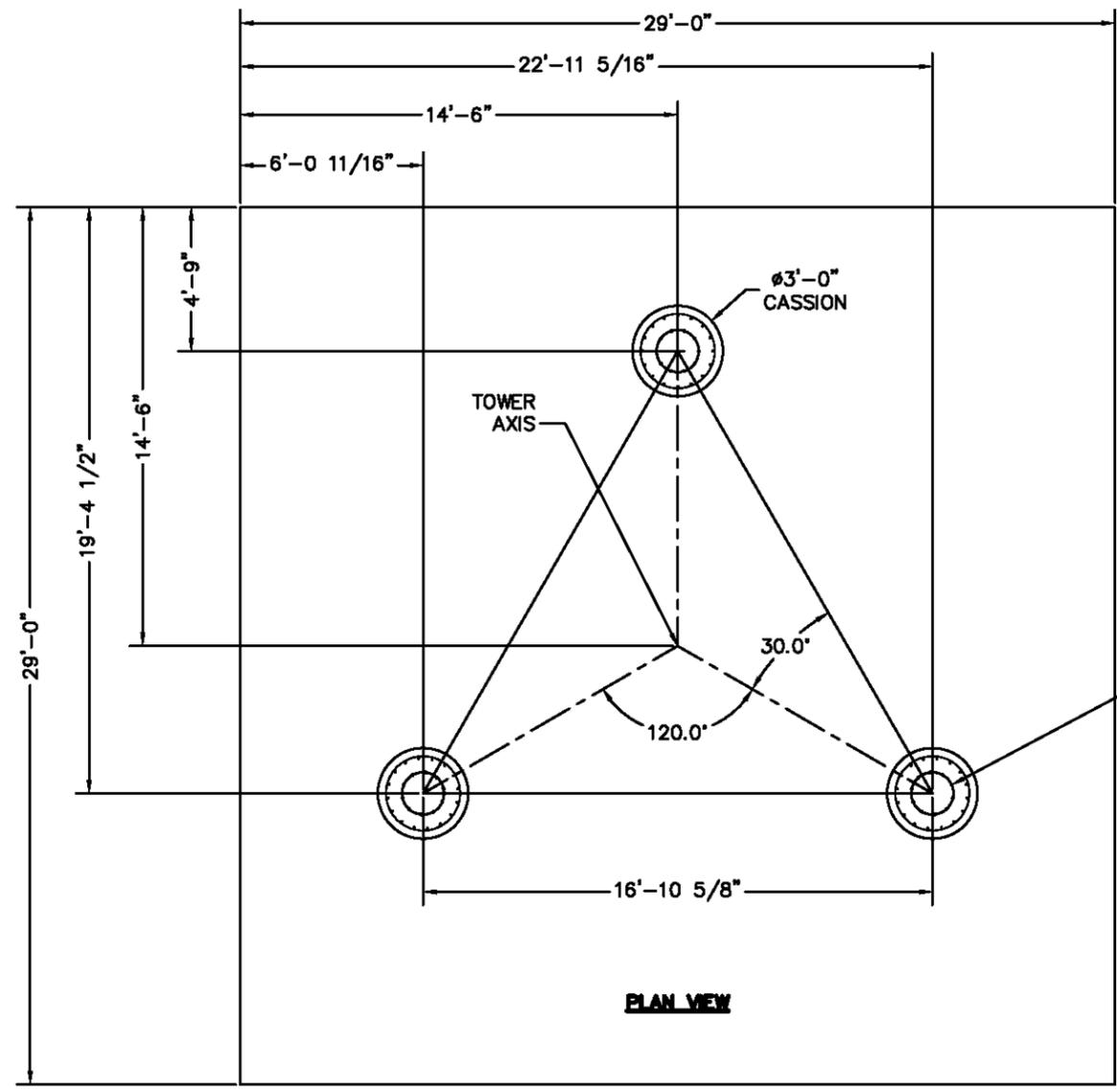
QUANTITIES SHOWN ARE FOR ONE (1) SPREAD FOOTING FOUNDATION AS SHOWN.

NOTES:

- 1.) CONCRETE SHALL ATTAIN ULTIMATE COMPRESSION STRENGTH OF 4000 PSI AT 28 DAYS.
- 2.) REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE SPECIFICATIONS.
- 3.) 3" MINIMUM CONCRETE COVER ON ALL REINFORCING STEEL.
- 4.) SIDES OF EXCAVATIONS MAY REQUIRE TO BE BRACED OR SLOPED BACK AS REQUIRED FOR STABILITY AND IN ACCORDANCE WITH ALL APPLICABLE SAFETY REGULATIONS.
- 5.) DESIGN BASED ON NORMAL SOILS.
- 6.) REINFORCING STEEL MEMBERS ARE TO BE EVENLY SPACED.
- 7.) LATERAL REINFORCEMENT, CONSISTING OF TWO (2) HORIZONTAL TIES SHALL BE DISTRIBUTED WITHIN 5" OF THE TOP OF THE COLUMN PER ACI 318, SEC. 7.10.5.6.
- 8.) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL PRACTICES AND PROCEDURES UTILIZED DURING WORK REQUIRED ON THE FOUNDATION DO NOT ENDANGER THE SAFETY OF ANY PERSONNEL NOR THE STRUCTURAL INTEGRITY OF THE FOUNDATION.
- 9.) ALL BACK FILL TO BE PLACED IN 6" LIFTS AND COMPACTED TO ASTM D-1557 STANDARDS.
- 10.) EXPOSED EDGES OF FOUNDATION TO BE CHAMFERED 1" X 45°.
- 11.) ACI STANDARDS APPLY TO BENDING REINFORCING STEEL. (ACI 318-LATEST EDITION; SECTION 7.2)
- 12.) USE STEEL TEMPLATES PROVIDED BY EEI FOR PROPER ANCHOR BOLT PLACEMENT.
- 13.) REFERENCE EEI "TERMS AND CONDITIONS RELATED TO SALES" AND "ANCHOR ROD TIGHTENING" SHEETS FOR ADDITIONAL NOTES.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EHRESMANN ENGINEERING, INC. AND SHALL NOT BE REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS OF THE MANUFACTURE OR SALE OR ITEM(S) WITHOUT WRITTEN PERMISSION.

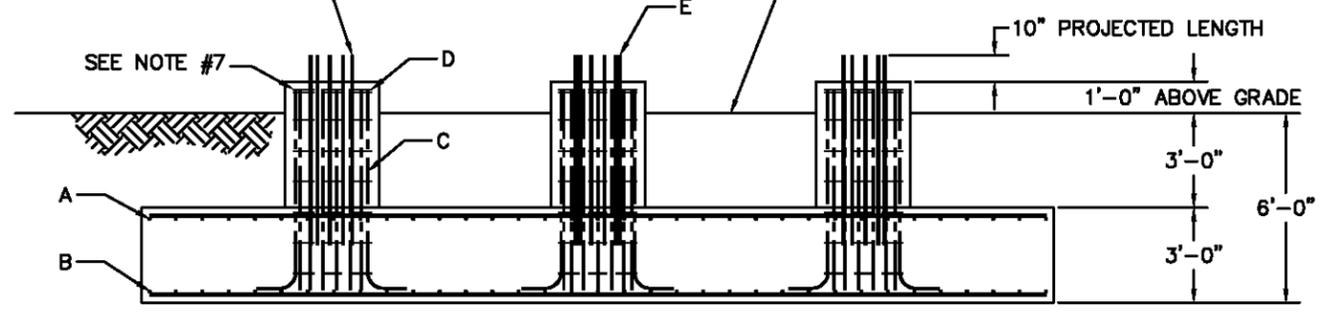
ONSITE SOILS MUST BE VERIFIED TO MEET OR EXCEED THOSE DEFINED AS NORMAL SOILS TO INCLUDE THE FOLLOWING MINIMUM CHARACTERISTICS:
 - ALLOWABLE SOIL BEARING AT BASE OF EXCAVATION = 4000 PSF
 - NO WATER ENCOUNTERED TO BASE OF EXCAVATION.
 - MINIMUM DRY UNIT WEIGHT OF SOIL = 110 CU/FT



(10x) 1 1/4"Ø ANCHOR BOLTS X 6'-0" LG - EVENLY SPACED ON A 16 3/4" BOLT CIRCLE

THE CLEAR DISTANCE FROM THE TOP OF CONCRETE TO THE BOTTOM LEVELING NUT IS NOT TO EXCEED 1.0 TIMES THE DIAMETER OF THE ANCHOR BOLT

CONTRACTOR MUST PROVIDE POSITIVE DRAINAGE AWAY FROM TOWER CENTER TO PREVENT PONDING AND SOILS AT BASE OF FOUNDATION FROM BECOMING SATURATED.

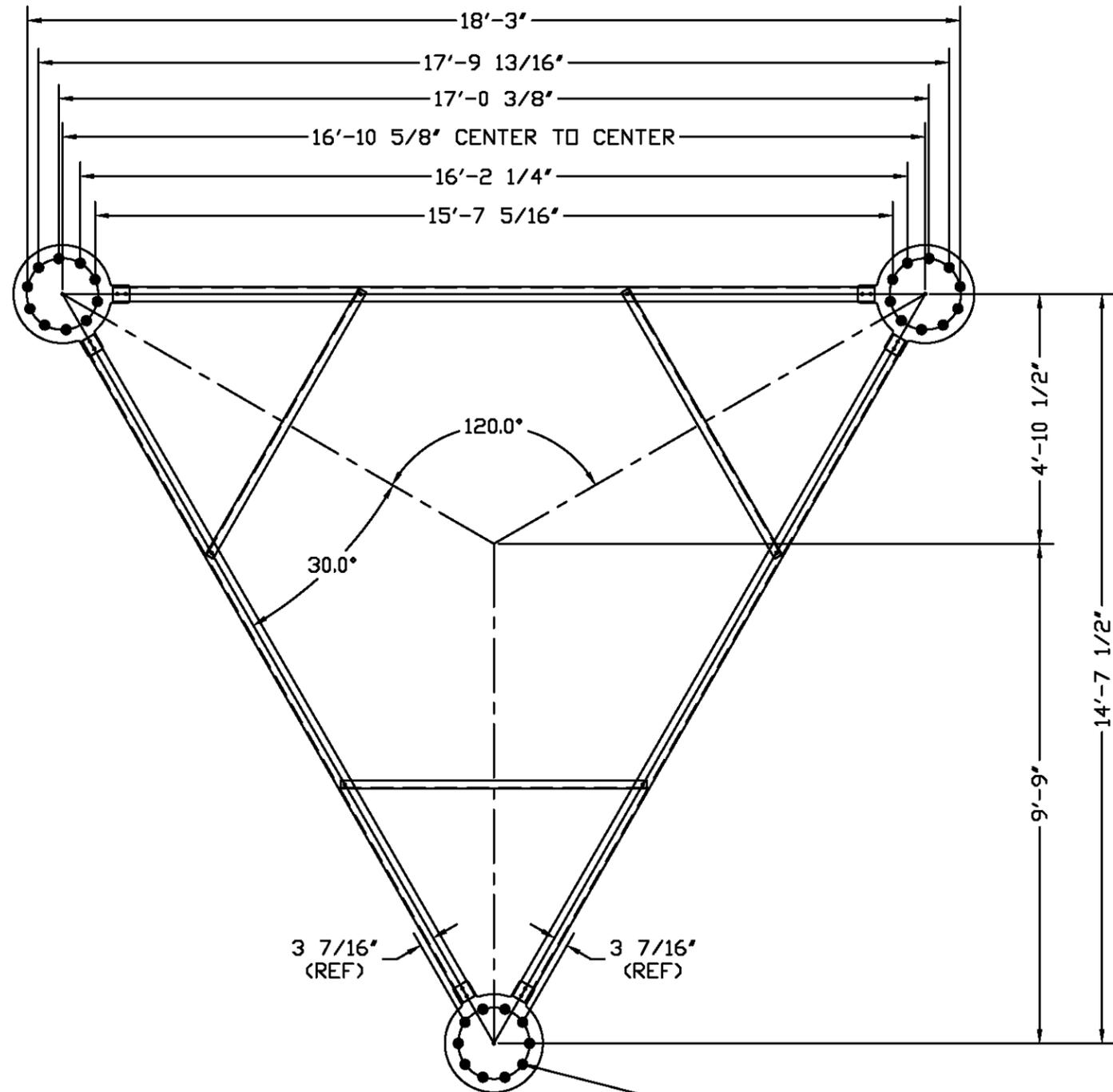


DESIGN REACTIONS:

TOTAL SHEAR = 72.108 KIPS
 MAX. UPLIFT PER LEG = 410.051 KIPS
 MAX. COMP. PER LEG = 449.678 KIPS
 OVERTURNING MOMENT = 6386.308 FT KIPS
 CONCRETE QTY = 96.59 CU YDS

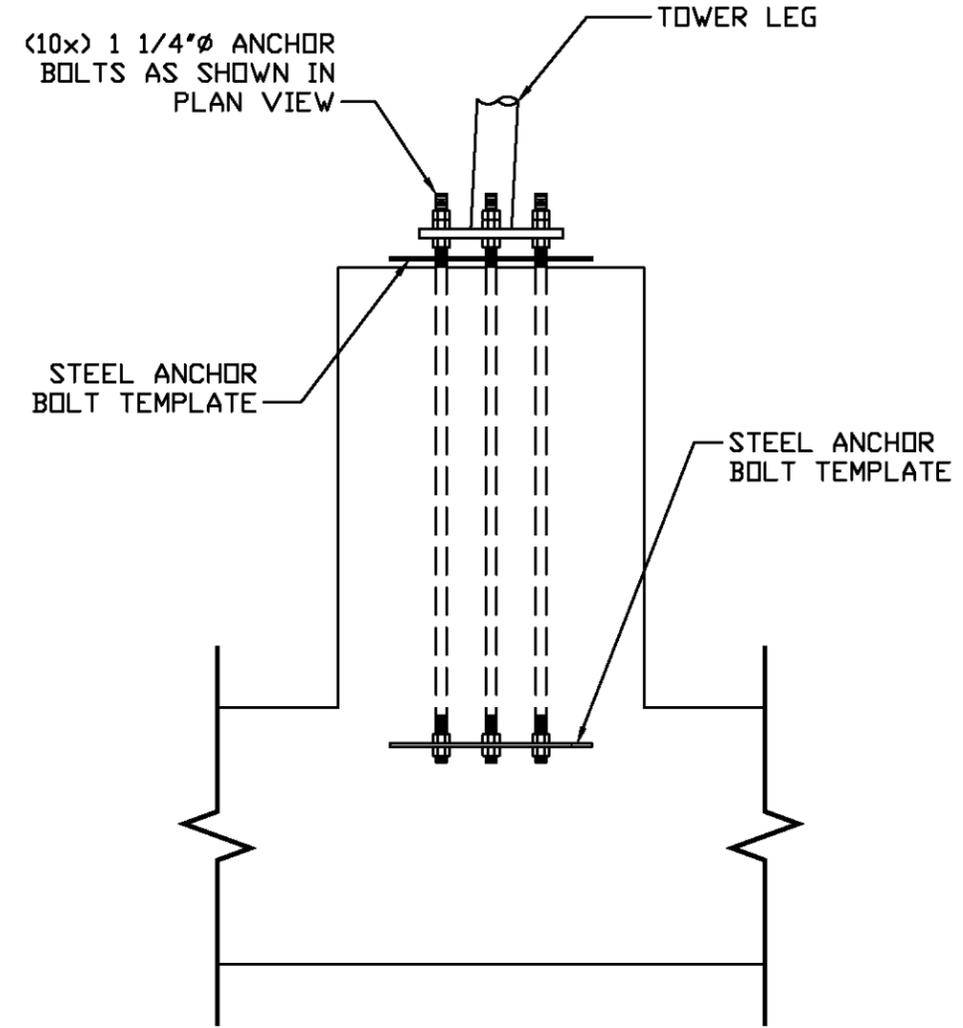
SITE: TU-62, ID (NEZ PERCE TRIBE)

SPREAD FOOTING FOUNDATION 140' EEI SSTA		
EHRESMANN ENGINEERING, INC. CONSULTING ENGINEERS 4400 WEST 31st. STREET YANKTON, SD 57078 (605) 665-7532 (605) 665-9780		DATE: 04/30/15
		BY: TR
		CHECKED:
J.O. 94160	DWG # 94160E01	SHT E01 OF



TYPICAL PLAN VIEW ANCHOR BOLTS

(10x) 1 1/4"Ø ANCHOR BOLTS USE STEEL ANCHOR BOLT TEMPLATES, FURNISHED BY EEI TO CORRECTLY PLACE ANCHOR BOLTS IN PIERS.



BASE PLATE SETTING

- NOTES:**
- 1.) SET ANCHOR BOLTS IN TEMPLATE AND EMBED IN FRESH CONCRETE.
 - 2.) AFTER CONCRETE HAS SET REMOVE TOP TEMPLATE.
 - 3.) SET TOWER IN PLACE USING LEVELING NUTS TO PLUMB TOWER.

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF EHRESMANN ENGINEERING, INC. AND SHALL NOT BE REPRODUCED OR USED IN WHOLE OR IN PART AS THE BASIS OF THE MANUFACTURE OR SALE OF ITEM(S) WITHOUT WRITTEN PERMISSION.

SITE: TU-62, ID (NEZ PERCE TRIBE)

FOUNDATION AND TEMPLATES	
EHRESMANN ENGINEERING, INC. CONSULTING ENGINEERS 4400 WEST 31st. STREET YANKTON, SD 57078 (605) 665-7532 (605) 665-9780	DATE: 04/30/15
	BY: TR
	CHECKED:
J.D. 94160	DWG # 94160E02 SHT E02 OF

APPENDIX D: Soils Data

Custom Soil Resource Report for Kooskia Area, Idaho County, Idaho

TU 62



How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

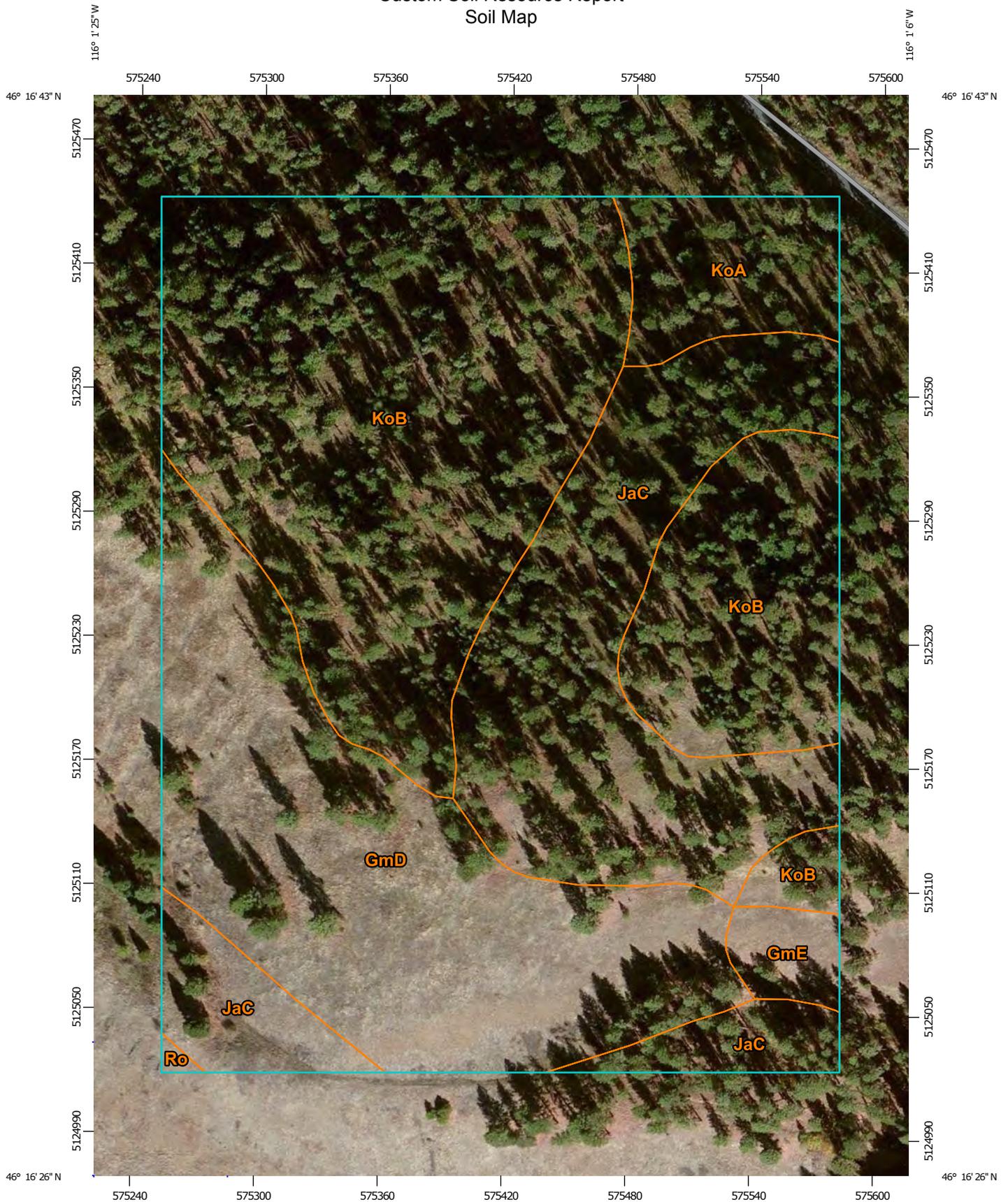
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

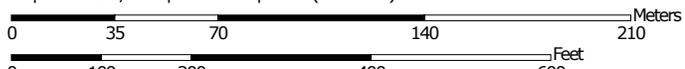
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:2,550 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kooskia Area, Idaho County, Idaho
 Survey Area Data: Version 9, Sep 8, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 3, 2010—Jul 5, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Kooskia Area, Idaho County, Idaho (ID618)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GmD	Gwin-Mehlhorn stony loams, 12 to 45 percent slopes	8.9	25.6%
GmE	Gwin-Mehlhorn stony loams, 45 to 65 percent slopes	0.6	1.6%
JaC	Jacknife silt loam, 12 to 25 percent slopes	8.5	24.7%
KoA	Kooskia silt loam, 0 to 7 percent slopes	1.8	5.3%
KoB	Kooskia silt loam, 7 to 12 percent slopes	14.7	42.6%
Ro	Rock outcrop	0.1	0.1%
Totals for Area of Interest		34.5	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

Custom Soil Resource Report

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kooskia Area, Idaho County, Idaho

GmD—Gwin-Mehlhorn stony loams, 12 to 45 percent slopes

Map Unit Setting

National map unit symbol: 55bl
Elevation: 1,600 to 5,000 feet
Mean annual precipitation: 14 to 28 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Gwin and similar soils: 55 percent
Mehlhorn and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gwin

Setting

Landform: Canyons
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess and/or colluvium over bedrock derived from basalt and/or greenstone

Typical profile

A - 0 to 8 inches: stony loam
Bt - 8 to 18 inches: very cobbly silty clay loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 12 to 45 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Mehlhorn

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over bedrock derived from basalt and/or igneous rock

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Typical profile

A - 0 to 10 inches: stony loam
Bt - 10 to 28 inches: clay loam
R - 28 to 38 inches: bedrock

Properties and qualities

Slope: 12 to 45 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C

GmE—Gwin-Mehlhorn stony loams, 45 to 65 percent slopes

Map Unit Setting

National map unit symbol: 55bm
Elevation: 1,600 to 5,000 feet
Mean annual precipitation: 14 to 28 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Gwin and similar soils: 65 percent
Mehlhorn and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gwin

Setting

Landform: Canyons
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess and/or colluvium over bedrock derived from basalt and/or greenstone

Typical profile

A - 0 to 8 inches: stony loam
Bt - 8 to 18 inches: very cobbly silty clay loam
R - 18 to 28 inches: bedrock

Custom Soil Resource Report

Properties and qualities

Slope: 45 to 65 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

Description of Mehlhorn

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loess over bedrock derived from basalt and/or igneous rock

Typical profile

A - 0 to 10 inches: stony loam
Bt - 10 to 28 inches: clay loam
R - 28 to 38 inches: bedrock

Properties and qualities

Slope: 45 to 60 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

JaC—Jackknife silt loam, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: 55bw
Elevation: 1,200 to 3,000 feet
Mean annual precipitation: 22 to 26 inches

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Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Jackknife and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jackknife

Setting

Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess and/or alluvium and colluvium derived from basalt

Typical profile

A - 0 to 18 inches: silt loam
Bt1 - 18 to 26 inches: silty clay loam
Bt2 - 26 to 60 inches: silty clay

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

KoA—Kooskia silt loam, 0 to 7 percent slopes

Map Unit Setting

National map unit symbol: 55c9
Elevation: 2,000 to 3,300 feet
Mean annual precipitation: 23 to 26 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kooskia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kooskia

Setting

Landform: Hillslopes, plateaus

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over colluvium derived from basalt

Typical profile

O_i - 0 to 1 inches: slightly decomposed plant material

A - 1 to 10 inches: silt loam

B_t - 10 to 17 inches: silt loam

2E - 17 to 31 inches: silt loam

2B_t - 31 to 60 inches: silty clay

Properties and qualities

Slope: 3 to 7 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (K_{sat}): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 24 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C

KoB—Kooskia silt loam, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 55cb

Elevation: 2,000 to 3,300 feet

Mean annual precipitation: 23 to 26 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 100 to 130 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Kooskia and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kooskia

Setting

Landform: Hillslopes, plateaus

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess over colluvium derived from basalt

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Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 10 inches: silt loam
Bt - 10 to 17 inches: silt loam
2E - 17 to 31 inches: silt loam
2Bt - 31 to 60 inches: silty clay

Properties and qualities

Slope: 7 to 12 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Ro—Rock outcrop

Map Unit Composition

Rock outcrop: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: bedrock

Properties and qualities

Slope: 65 to 100 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

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APPENDIX E: Biological Resources Information

Migratory Bird TOWER SITE EVALUATION FORM

SITE NAME: Tribal Unit 62

1. Location (provide maps if possible):

State: ID County: Idaho

Latitude: 46 16' 32.28" N Longitude: 116 1' 17.77" W GPS Grid:

City and Highway Direction

From Hwy 12 in Kamiah, cross Clearwater River and take left on Woodland Road; Follow Woodland Road about 7 miles to tower site access roadway

2. Elevation above mean sea level: 3110 ft
3. Will the equipment be co-located on an existing FCC licensed tower or other existing structure

(building, billboard, etc.)? (y/n) NO If yes, type of structure: _____

If yes, no further information is required.

If no, provide proposed specification for new tower:

4. Height: 140 ft Construction type (lattice, monopole, etc.): Self-supporting lattice
Guy-wired? (y/n) NO Number of bands: _____ Total Number of Wires: _____

Lighting (Security and Aviation): NA on tower; Equipment Shed will have a day/night automatic light

5. Area of tower footprint in acres or square feet: 6400 sq ft
6. Length and width of access road in feet: 900 ft, 16' width for 12' rockered running surface
7. General description of terrain – mountainous, rolling hills, flat to undulating, etc. Photographs of the site and surrounding area are beneficial: Mature Ponderosa Pine/Douglas fir



8. Meteorological conditions (incidence of fog, low ceilings, etc): fall/winter fog
9. Soil type(s): silt-loam
10. Habitat types and land use on and adjacent to the site, by acreage and percentage of total:
Immediate vicinity Ponderosa Pine/Douglas fir Ocean Spray/Ninebark forest; adjacent to the east agriculture production and mixed forest used for open grazing; the site lies on a ridge above the Clearwater River
11. Dominant vegetative species in each habitat type: non native grasses, Ponderosa pine
12. Average diameter breast height of dominant tree species in forested areas: 9-18"
13. Will construction at this site cause fragmentation of a larger block of habitat into two or more smaller blocks? (y/n) NO If yes, describe: _____
14. Is evidence of bird roosts or rookeries present? (y/n) NO If yes, describe: _____
15. Distance to nearest wetland area (forested swamp, marsh, riparian, marine, etc.), and coastline if applicable: Clearwater River 2 air miles
16. Distance to nearest telecommunications tower: KIYE (100') is 3.5 miles to the SSW in the valley; TU 60 (160') is 5.8 miles to the W; Nuxoll (120') is 5.6 miles S
17. Potential for co-location of antennas on existing towers or other structures: No, development intended to provide redundancy

18. Have measures been incorporated for minimizing impacts to migratory birds? (y/n) YES

If yes, describe: Equipment Shed day/night light will be down-shielded to light the immediate area only, motion activated; and, a self-supporting tower design will be specified.

19. Has an evaluation been made to determine if the proposed facility may affect listed or proposed endangered or threatened species or their habitats as required by FCC regulation at 47 CFR 1.1307(a)(3)? (y/n) YES If yes, present findings: The Tribal Botanist and Wildlife Biologist toured the site and found no indication of TES species in the project area.

20. Additional information required: _____

Bird Species known to occur on the Nez Perce Reservation

(Source: <http://www.npwrc.usgs.gov/resource/birds/chekbird/r1/nezperce.htm>)

Water Habitats

LOONS
Common Loon

GREBES
Eared Grebe
Horned Grebe
Western Grebe
Pied-billed Grebe

BITTERNs, HERONS, AND
EGRETS
Great Blue Heron

WATERFOWL
Canada Goose
Snow Goose
Mallard
Gadwall
American Wigeon

Northern Pintail
Wood Duck
Green-winged Teal
Blue-winged Teal
Cinnamon Teal
Northern Shoveler
Canvasback
Redhead
Ring-necked Duck
Lesser Scaup
Common Goldeneye
Barrow's Goldeneye
Bufflehead
Hooded Merganser
Common Merganser
Ruddy Duck

OSPREY, EAGLES
Osprey

Bald Eagle
SHOREBIRDS

Greater Yellowlegs
Spotted Sandpiper
Common Snipe

GULLS & TERNs

Ring-billed Gull
California Gull
Herring Gull
Caspian Tern

KINGFISHERS
Belted Kingfisher

Open Forest Habitats

KITES AND HAWKS
Northern Harrier
Sharp-shinned Hawk
Cooper's Hawk
Northern Goshawk
Red-tailed Hawk
Rough-legged Hawk

FALCONS
American Kestrel
GALLINACEOUS BIRDS
Gray Partridge

Chukar
Ring-necked Pheasant
California Quail

WARBLERS
Yellow-rumped Warbler
Orange-crowned Warbler
MacGillivray's Warbler
Common Yellowthroat
Wilson's Warbler
Yellow-breasted Chat

TANAGERS
Western Tanager

GROSBEAKS & BUNTINGS
Black-headed Grosbeak
Lazuli Bunting
GOATSUCKERS
Common Nighthawk

SWIFTS
Vaux's Swift

HUMMINGBIRDS
Black-chinned Hummingbird
Calliope Hummingbird
Rufous Hummingbird

WOODPECKERS
Downy Woodpecker
Hairy Woodpecker
Northern Flicker

FLYCATCHERS
Western Wood Pewee
Say's Phoebe
Western Kingbird
Eastern Kingbird
Violet-green Swallow
Tree Swallow
Northern Rough-winged
Swallow
Bank Swallow
Cliff Swallow
Barn Swallow

JAYS, MAGPIES & CROWS
Steller's Jay
Black-billed Magpie
American Crow
Common Raven

CHICKADEES & TITMICE

Black-capped Chickadee
Mountain Chickadee

NUTHATCHES
Red-breasted Nuthatch

CREEPERS
Brown Creeper

WRENS
Rock Wren
Canyon Wren
House Wren
Winter Wren
Marsh Wren
THRASHERS
Gray Catbird

PIPITS
American Pipit

WAXWINGS
Bohemian Waxwing
Cedar Waxwing

FINCHES
Rosy Finch

Pine Grosbeak
House Finch
Pine Siskin
American Goldfinch
Evening Grosbeak

WEAVER FINCHES
House Sparrow
Chestnut-backed Chickadee
Mountain Bluebird
Fox Sparrow

Turkey

OWLS
Barn Owl
Western Screech Owl
Great Horned Owl
Northern Pygmy Owl
Long-eared Owl
Short-eared Owl
Northern Saw-whet Owl

Forest Edges & Disturbed areas

BLACKBIRDS, MEADOWLARKS & ORIOLES
Red-winged Blackbird
Western Meadowlark
Brewer's Blackbird
Brown-headed Cowbird
Bullock's Oriole

WEAVER FINCHES
House Sparrow

FINCHES
Rosy Finch
Pine Grosbeak
House Finch
Pine Siskin
American Goldfinch
Evening Grosbeak

SHRIKES
Northern Shrike

Open Rangelands

JAYS, MAGPIES & CROWS
Steller's Jay
Black-billed Magpie
American Crow
Common Raven

APPENDIX F: Historic, Cultural and Native American Resources Coordination/Communication

**ARCHAEOLOGICAL AND HISTORICAL SURVEY REPORT
ARCHAEOLOGICAL SURVEY OF IDAHO**

A. KEY INFORMATION

1. **Project name:** Cultural Resource Survey for the Proposed Kamiah Telecommunications Tower
2. **Report number:** 14-NPT-23
3. **Agency name:** Nez Perce Tribe
4. **Report author:** Jared Norman, Nez Perce Tribe Cultural Resource Program
5. **Date:** September 29, 2014
6. **County:** Idaho
7. **Township, range, section:** T34N, R3E, Sec.23 and 24
8. **Acres Surveyed:** Less than 1 acre surveyed
9. **Other Maps Used:** Woodland, Idaho. USGS 7.5 [1967 Photo revised 1967]
10. **Aerial Photos:** NAIP 1 meter, Idaho

B. PROJECT DESCRIPTION

1. **Description of project and potential direct and indirect impacts to known or suspected historic properties:** The Nez Perce Tribe Department of Technology Services is proposing to install a telecommunications tower and a .29 mile long access road in Kamiah, Idaho. The road construction work will include blading of vegetative surface and shaping drainage ditches. The roadway will be rocked with a 6" layer of 4" minus pit run. The tower construction site will encompass a 100' x 100' fenced area, and a permanent compound will be 75' x 75'. The tower compound will include a telecommunications tower, communications building (8' x 12') and have a rocked overlay surface. The telecommunication tower foundation excavation will include a 30' x 30' concrete pad at a depth of 5', with three pillars poured to reach the surface to help secure the tower legs.

An archaeological pedestrian survey was needed for cultural compliance on this project prior to implementation of the project.

The proposed tower location is situated in an area previously logged and is most likely currently being used for hunting.

2. **Description of Area of Potential Effects (APE) with reference to attached map:** The APE lies three miles north of Kamiah, Idaho on Tribal Unit 62; the access roadway will traverse 0.7 miles south from Woodland Road to the Tower location (Map). CRP staff surveyed a previous location chosen for the access road, tower, and underground utility line about 1 mile west of the current location (Map). The second location was chosen because of the accessibility to power.

3. **Project acres:** < 1 acre

4. **Owner(s) of land in project area:** The Nez Perce Tribe

C. STATEMENT OF OBJECTIVES FOR SURVEY

The objectives of the survey are to identify any cultural or historic properties in the project footprint and area of direct effect, and provide a recommendation for potential NRHP eligibility of any encountered sites. The study will include background research of the project area, including previous archaeological and historical surveys, site forms, and maps.

D. LOCATION AND GENERAL ENVIRONMENTAL SETTING

1. **USGS topographic 7'5 Quad map:** Woodland, ID, [1967, photo revised 1984]

2. **Setting:** Tribal Unit 62 lies along a major ridgeline running east-west and is primarily a Ponderosa Pine/grassland forested area. There are pockets of Douglas fir and Grand fir intermixed with Ocean Spray, Ninebark, Syringa and Serviceberry. The Tribal Unit is used by deer, wild turkey grouse and hosts a variety of birds and small mammals.

E. PRE-FIELD RESEARCH

1. **Sources of information checked:**

The Nez Perce Tribe Cultural Resources Program (CRP) conducted background research to identify archeological sites and previous cultural resource surveys located within one mile of the project areas, prior to commencing fieldwork. Research was completed through the Nez Perce Tribal Historic Preservation Office (THPO).

- Overviews
- National Register
- Archaeological site records/maps
- Architectural site records/maps
- Other - Ethnographer Nakia Williamson
- Historical records/maps (Shawley Trails)
- Survey records
- Individuals/groups with special knowledge

2. **Summary of previous studies in the general area:** None

Date	Title of Survey	Author
1980	Id6-80-21 Woodland Road Right-of-Way	Kris Riddle

2. **Description and evaluation of projects in E.2:**

The Idaho County Road Department requested a long term right-of-way to improve Woodland Road. In 1980, the BLM conducted an archaeological pedestrian survey about one mile from the APE. The Principle Investigator, Kris Riddle located a historic grave just off BLM property. Mr. Riddle was informed by a local resident that no more graves were in the area (Riddle 1980).

F. EXPECTED HISTORIC AND PREHISTORIC LAND USE AND SITE SENSITIVITY

1. **Are cultural properties known in this area?** No Yes

2. **Are cultural properties expected?** Yes No

CRP staff spoke with Nez Perce Tribe Ethnographer who stated that there are no cultural properties in the vicinity of the project area.

3. What cultural themes/contexts are expected within the survey area?

<u>Theme</u>		<u>Time Period</u>
<input checked="" type="checkbox"/> Prehistoric Archaeology	<input type="checkbox"/> Military	<input checked="" type="checkbox"/> Prehistoric
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Mining Industry	<input checked="" type="checkbox"/> Historic Native American
<input type="checkbox"/> Architecture	<input checked="" type="checkbox"/> Native Americans	<input type="checkbox"/> Exploration: 1805-1860
<input type="checkbox"/> Civilian Conservation Corp.	<input type="checkbox"/> Politics/Government	<input type="checkbox"/> Settlement: 1855-1890
<input type="checkbox"/> Commerce	<input type="checkbox"/> Public Land Mngt/Conserv.	<input type="checkbox"/> Phase I Statehood: 1890-1904
<input type="checkbox"/> Communication	<input type="checkbox"/> Recreation/Tourism	<input type="checkbox"/> Phase II Statehood: 1904-1920
<input type="checkbox"/> Culture and Society	<input type="checkbox"/> Settlement	<input type="checkbox"/> Interwar: 1920-1940
<input type="checkbox"/> Ethnic Heritage	<input checked="" type="checkbox"/> Timber Industry	<input checked="" type="checkbox"/> Pre-Modern: 1940-1958
<input type="checkbox"/> Exploration/Fur Trapping	<input type="checkbox"/> Transportation	<input checked="" type="checkbox"/> Modern: 1958-present
<input type="checkbox"/> Industry	<input type="checkbox"/> Other (list)	

4. Brief description of where cultural properties associated with expected themes might be found with respect to landforms, water, vegetation, slope, fauna, and historical documentation:

G. FIELD METHODS

1. Areas examined and type of coverage: The project area falls within lands traditionally occupied by the Nez Perce. Archaeological sites are expected along historic trails and flat areas near water resources such as springs, creeks, and rivers (Shawley1984).

CRP staff surveyed the project area in 20 m intervals. Because ground visibility was moderate to good and no artifacts were observed, we did not see the need for subsurface testing. CRP staff took photographs and used a handheld Trimble GeoXT GPS unit with a GNSS receiver to record the project area and any cultural findings. Terra Sync and Pathfinder Office were used to differentially correct data and import survey area boundaries collected in the field.

2. Description of ground surface conditions: Ground surface visibility was moderate to good with some occasional weeds. Most of the project area’s ground surface was 80-100% visible.

3. Areas not examined and reasons why: None

4. Names of personnel participating in the survey in the field: Jared Norman, Field Archaeologist, Jarvis Weaskus, CRP Field Technician, and Chris St. Germaine, Information Systems Project Leader.

5. Dates of survey: September 3, 8, 9, 26, 2014

6. Problems encountered: None

H. RESULTS

1. List of all cultural properties (including previously recorded) in this area: None

2. Summary of important characteristics of properties listed above: Not applicable.

3. Recommendations for National Register eligibility of each cultural property: Not applicable.

References Cited

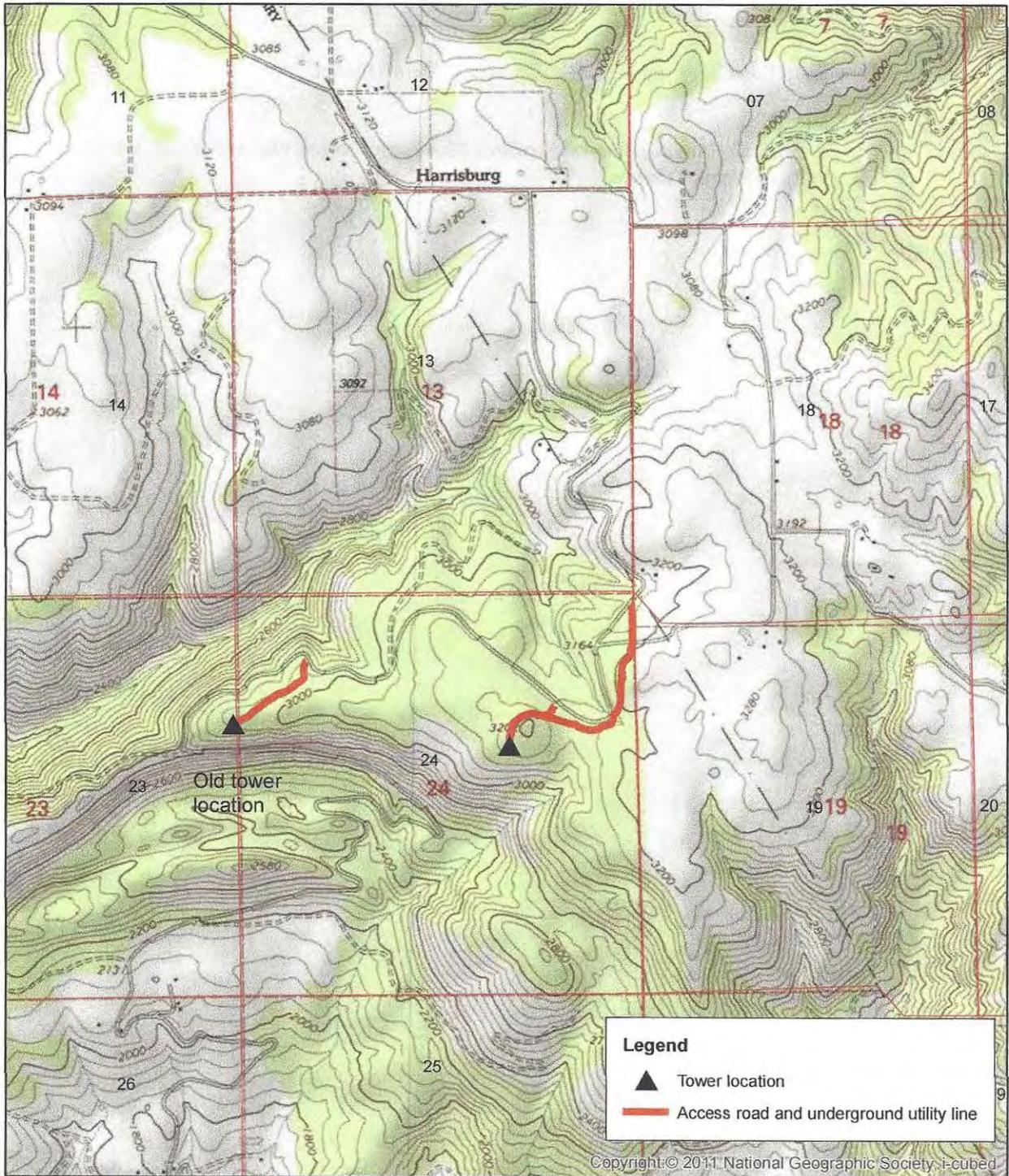
Riddle, Kris

1980 Woodland Road Right-of-Way. BLM, Coeur d'Alene District.

Shawley, Stephen D.

1984 *Nez Perce Trails*. Anthropological Research Manuscript Series, No. 44, revised edition.
University of Idaho, Moscow.

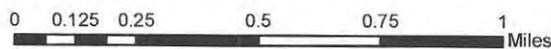
14-NPT-23
 Kamiah Telecommunications Tower
 Nez Perce Tribe Cultural Resource Program



USGS 7.5' Quadrangle
 Woodland, ID [1967] Photorevised 1984
 Idaho NAIP 1 meter
 UTM Zone 11, NAD83

T34N, R3E, Sec. 23, 24

Scale 1:24,000



Drafted By: Jared Norman
 Nez Perce Tribe
 Cultural Resource Program
 Lapwai, Idaho
 September 29, 2014



Figure 1. Flagging tape on tree marks the location of telecommunications tower. View to north. Photo 14-NPT-23-D-17.

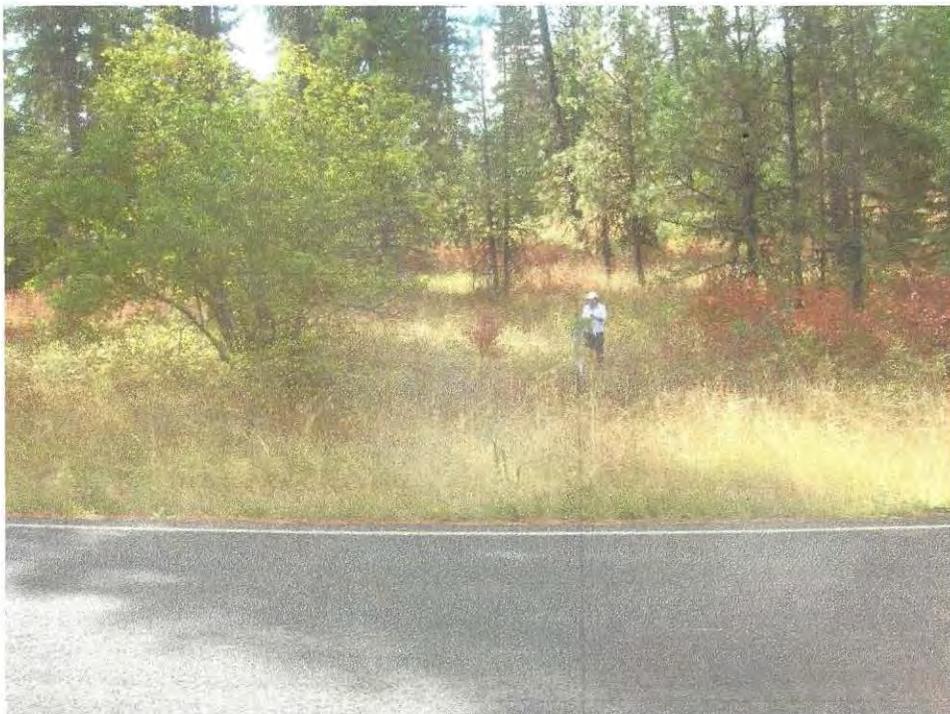


Figure 2. Location of access road, Woodland Road in the foreground. View to south. Photo 14-NPT-23-D-16.

APPENDIX G: Public Notice

PUBLIC NOTICE
Federal Emergency Management Agency
Draft Environmental Assessment
Nez Perce Tribe Redundant Telecommunications Tower, Kamiah ID

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) proposes to provide funding to the Nez Perce Tribe to build a telecommunications tower near Kamiah, ID. Funding would be provided through the Tribal Homeland Security Grant Program.

A Draft Environmental Assessment (EA) has been prepared for the proposed project pursuant to the National Environmental Policy Act of 1969 and FEMA's implementing regulations in 44 Code of Federal Regulations Part 10. The Draft EA evaluates alternatives for compliance with applicable environmental laws, including Executive Orders 11990 (Protection of Wetlands), 11988 (Floodplain Management), and 12898 (Environmental Justice). The alternatives that are evaluated in the Draft EA are (1) no action and (2) deploying a redundant fixed microwave path to serve Kamiah (proposed action).

The Draft EA is available to the public for review and download on FEMA's Website at www.fema.gov/media-library/assets/documents/ and will be available for review on August __, 2015, at the Nez Perce Tribal Office on 100 Agency Road in Lapwai from 8 am to 4:30 pm.

If no significant issues are identified during the comment period on the Draft EA, FEMA will finalize the Draft EA, issue a Finding of No Significant Impact (FONSI), and fund the project. The FONSI will be available to the public at the above website. Unless substantive comments on the Draft EA are received, FEMA will not publish another notice for this project.

The deadline for submitting written comments on the Draft EA is September __, 2015, at 5 p.m. Comments should be mailed to Science Kilner, Deputy Regional Environmental Officer, FEMA Region X, 130 228th Street SW, Bothell, WA 98021; e-mailed to science.kilner@fema.dhs.gov; or faxed to 425-487-4613.