



Tillamook County Board of Commissioners

201 Laurel Avenue, Tillamook, OR 97141

Phone: 503-842-3403

TTY Oregon Relay Service

Erin D. Skaar, Chair

Mary Faith Bell, Vice-Chair

David Yamamoto, Commissioner

November 22, 2023

Miriam Forney, Land Acquisitions Coordinator
Oregon Watershed Enhancement Board
775 Summer Street NE, Suite 360
Salem, Oregon 97301-1290

Transmitted via email to: miriam.forney@oweb.oregon.gov

Dear Miriam,

On August 2, 2023, Tillamook County received the Oregon Watershed Enhancement Board's ('OWEB') acceptance of the Tillamook People's Utility District's ('PUD') third revision of the Request for Easement ('Proposal'), dated July 2023 to construct a utility easement over the Southern Flow Corridor Project ('SFC') area as part of PUD's Tillamook to Oceanside Transmission Line Project.

As the landowner and sub-recipient of the US Fish and Wildlife Service Coastal Wetlands Program funding for SFC implementation, the county has reviewed the information provided by PUD regarding its project and has determined the Proposal is consistent with the SFC conservation easement (Instrument #2016-002688 in the Tillamook County Clerk Deed Records) and the Coastal Wetlands Notice of Federal Participation (Instrument #2016-002687 in the Tillamook County Clerk Deed Records).

The county hereby approves PUD's Proposal and submits the Proposal to OWEB for approval to grant PUD a utility easement over the SFC area.

Attached is the draft utility easement for review by OWEB and the US Fish and Wildlife Service.

Please contact Rachel Hagerty, Chief of Staff, at rachel.hagerty@tillamookcounty.gov or 503-842-3404 to with any questions.

Sincerely,

BOARD OF COMMISSIONERS FOR TILLAMOOK COUNTY, OREGON

Erin D. Skaar, Chair

Mary Faith Bell, Vice-Chair

David Yamamoto, Commissioner

Attachments:

Draft Utility Easement

Tillamook PUD's third revision of the Request for Easement ('Proposal'), dated July 2023

AFTER RECORDING RETURN TO:

Tillamook People's Utility District
P. O. Box 433
Tillamook, OR 97141

UNTIL A CHANGE IS REQUESTED
SEND TAX STATEMENTS TO:

No change in tax statements

ELECTRIC UTILITY EASEMENT

This Utility Easement ("Easement") is entered into as of the Effective Date defined below, by and between Tillamook County ("Grantor") and the Tillamook People's Utility District, an Oregon people's utility district ("Grantee").

For good and valuable consideration [MONETARY CONSIDERATION TO BE INSERTED FOLLOWING APPRAISAL], the receipt and sufficiency of which is hereby acknowledged, Grantor and Grantee agree as follows:

- 1. Grant of Permanent Easement.** Grantor hereby grants to Grantee, its licensees, successors, and assigns, a non-exclusive easement over a portion of the real property in Tillamook County identified as Tax Lot 1S1000003200 ("Property"). Grantee shall have the perpetual, non-exclusive right to aerially cross the portion of real property described and depicted on Exhibit 1 as the "100' Wide Easement" (the "Permanent Easement Area") for the transmission of electrical power, all communication lines reasonably necessary for the operation of Grantee's electric system, and associated service facilities (collectively, "Electric Facilities"). Subject to Section 3, Grantee's rights under this Easement shall include the right to manage vegetation within the Permanent Easement Area to prevent interference with the safe operation of the Electric Facilities.
- 2. Term.** Grantee's right to enter upon and use the Permanent Easement Area shall commence upon the Effective Date and shall be perpetual.
- 3. Restrictions on Grantee.**
 - 3.1.** Except in the case of an emergency, Grantee shall not conduct any vegetation management within the Permanent Easement Area without first obtaining consent from Grantor, which consent shall not be unreasonably withheld.
 - 3.2.** Grantee shall not construct roads or pathways within the Permanent Easement Area or cause any other surface alterations.
 - 3.3.** Following initial construction of the Electric Facilities, Grantee shall obtain Grantor's consent before making any modifications to the Electric Facilities within the Permanent Easement Area, which consent will not be unreasonably withheld.

Any and all modification shall be consistent with existing land use requirements and prudent utility practices.

4. Grantor's Rights and Restrictions.

4.1. Grantor's Rights. Unless otherwise prohibited by this Easement, Grantor retains the right to use the Permanent Easement Area, including for conservation and flood control, provided that such use does not interfere with Grantee's rights under this Easement or endanger Grantee's Electric Facilities. Grantor shall also have the right: (i) to require Grantee to implement an alternative chemical free noxious weed control plan as part of Grantee's construction and operation practices; and (ii) to require Grantee to clean and disinfect vehicles and equipment prior to entering the Permanent Easement Area, and to use clean, disinfected footwear and/or disposable footwear covering.

4.2. Prohibitions on Grantor's Use.

4.2.1. Grantor shall not store any hazardous materials, fuel, oil, and chemicals on, over, under, or in, the Permanent Easement Area.

4.2.2. Grantor shall not store personal property, including, but not limited to, derelict personal property such as refuse piles, equipment, or machinery, in the Permanent Easement Area.

4.2.3. Grantor shall not plant trees or vegetation within the Permanent Easement Area that would interfere with the safe operation and maintenance of the Electric Facilities.

4.2.4. Grantor shall not obstruct access to Grantee's Electric Facilities.

4.2.5. Grantor shall not change the grade or drainage patterns within the Permanent Easement Area by adding more than twelve inches (12") of fill.

4.2.6. Except after consultation with and approval by Grantee, Grantor shall not install or permit others to install any other utilities within the Permanent Easement Area.

4.2.7. Grantor shall not permit third parties to use any portion of the Permanent Easement Area in violation of the express terms of this Easement.

5. Binding Effect. This Easement runs with the land and is binding upon, inures to the benefit of, and may be enforced by the Parties and their respective successors and assigns. Grantee may assign or transfer its interests without consent of Grantor. Grantee may use agents, employees, contractors, and other authorized persons for the purposes of exercising Grantee's rights and obligations under this Easement, provided no third-party beneficiary rights are created by this Easement and provided that

Grantee is liable for the actions of such parties. This Easement shall be construed in accordance with Oregon law.

6. **Amendment.** This Easement may be amended only by an instrument in writing signed by both Grantor and Grantee. All approvals required hereunder shall be in writing.
7. **Effective Date.** The Effective Date of this Easement is the date of the last party to sign, or the date of any valid court order.

[Signatures and acknowledgements on following pages]

GRANTOR:

Tillamook County

Signature

Name: _____

Title: _____

Date: _____

STATE OF OREGON)
) ss.
County of Tillamook)

This instrument was acknowledged before me on _____, 20__, by
_____ as _____ of the
Tillamook County Board of Commissioners.

NOTARY PUBLIC for Oregon
My Commission Expires:

GRANTEE:

Tillamook People's Utility District, an Oregon special district

Signature

Name: _____

Title: _____

Date: _____

STATE OF OREGON)
) ss.
County of Tillamook)

This instrument was acknowledged before me on _____, 20__, by
_____ as _____ of
Tillamook People's Utility District, an Oregon special district.

NOTARY PUBLIC for Oregon
My Commission Expires:



CHASE, JONES & ASSOCIATES INC.

FORMERLY BOOTH & WRIGHT

LAND SURVEYORS & ENGINEERS SINCE 1885

530 NE Couch St. | Portland | Oregon 97232
(503)-228-9844 | info@chasejonesinc.com

Date: December 30, 2021
Project #: 16063

100' Wide Easement (Tillamook County – Tax Lot 1S10000003200)

A 100.00 foot wide strip of land, being 50.00 feet on each side of the following described centerline, over a portion of that tract conveyed to Tillamook County as Tax ID No. (1S10000003200) Tillamook County Deed Records, and being situated in the Southeast Quarter of Section 23, Township 1 South, Range 10 West of the Willamette Meridian, County of Tillamook, State of Oregon, said centerline being described as follows:

COMMENCING at the Southeast corner of the Southeast Quarter of said Section 23; thence North 00°50'22" East along the East line of said Southeast Quarter a distance of 689.97 feet to the **TRUE POINT OF BEGINNING**; thence South 88°21'42" West a distance of 5388.64 feet, more or less, to the West line of the Southwest Quarter of said Section 23 and the **TERMINUS** thereof.

The sidelines of the above described centerline should be shortened or lengthened to the centerline of the Trask River and Haquarton Slough.

Containing 53,493 square feet, or 1.23 acres, more or less.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Eric D. Jones

OREGON
JULY 16, 1982
ERRIC D. JONES
1996

RENEWS: 6-30-23

CHASE, JONES & ASSOCIATES INC.
 530 N. E. COUCH ST. PORTLAND, OREGON 97232
 PHONE: (503) 228-9844
 PROJECT NO.: 16063 DATE: DECEMBER 23, 2021
 1/4 SECTION: N/A SCALE: 1" = 300'

EXHIBIT MAP
 FOR A 100' WIDE EASEMENT
 OVER
 TAX LOT 1S10000003200
 (TILLAMOOK COUNTY)

SITUATED IN THE
 SOUTHEAST 1/4 OF SECTION 23, T. 1 S., R. 10 W., W.M.
 COUNTY OF TILLAMOOK,
 STATE OF OREGON

REGISTERED
 PROFESSIONAL
 LAND SURVEYOR

Eric D. Jones

OREGON
 JULY 16, 1982
 ERRIC D. JONES
 1996

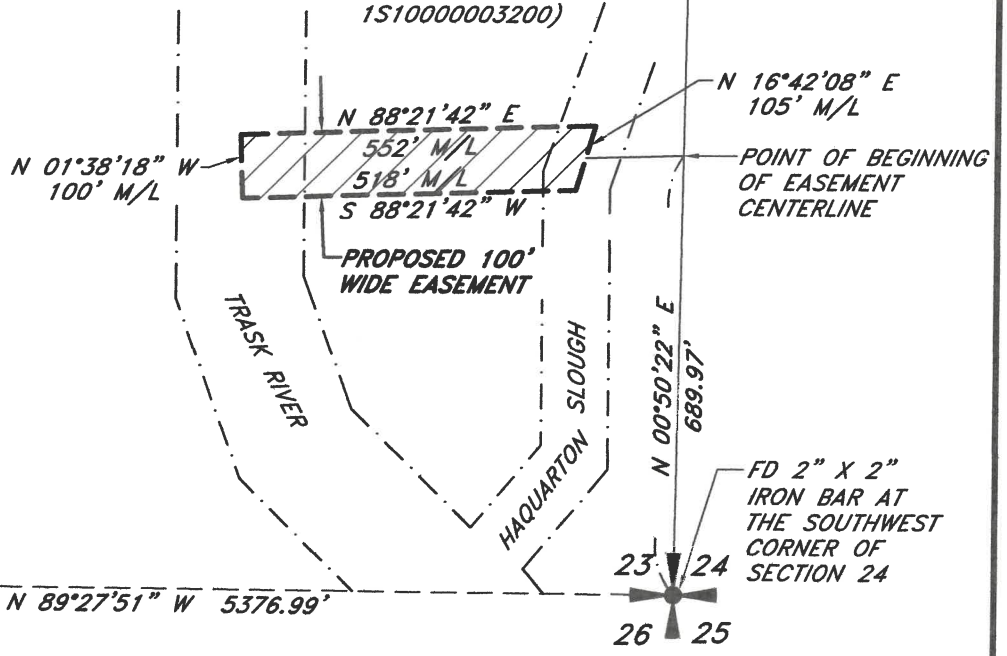
RENEWS: 6-30-23



23 24
 FD BRASS DISC
 AT THE WEST
 1/4 CORNER OF
 SECTION 24

N 00°50'22" E 2634.16'

TILLAMOOK COUNTY
 (TAX LOT
 1S10000003200)



N 16°42'08" E
 105' M/L

POINT OF BEGINNING
 OF EASEMENT
 CENTERLINE

N 00°50'22" E
 689.97'

FD 2" X 2"
 IRON BAR AT
 THE SOUTHWEST
 CORNER OF
 SECTION 24

22 23
 27 26
 CALCULATED POSITION
 FROM SURVEY B-2738
 N 89°27'51" W 5376.99'

23 24
 26 25

Tillamook People's Utility District

Tillamook to Oceanside Transmission Line

Request for Easement

Tillamook County Tax Lot 1S1000003200

July 2023

Revision 3



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Project Description

As electric loads continue to grow west of the City of Tillamook, new electric facilities are required to provide safe and reliable electricity to the 1,800 electrical customers in the area. After extensive evaluation of three main routes, each with dozens of minor route alterations including undergrounding options, Tillamook People’s Utility District (District) selected the final route for the proposed 115-kV transmission line. Approximately 8.4 miles of the 115-kV above ground transmission line (the Project) is proposed to be located in Tillamook County, and the remaining 0.2 mile of the line is proposed to pass through the City of Tillamook. The entire 8.4-mile segment of the transmission line for which Tillamook County land use approvals were obtained is shown on Figure 1–Final Route. The entire route is of similar construction comprising of mostly single wood or steel poles, with a fiber optic cable at the top of the pole, and three electrical conductors attached to the pole where two phases are on one side of the pole and the third conductor on the opposite of the pole.



Figure 1-Final Route

This section describes the main Project components proposed in the Tillamook County Land Use application process related to the County’s tax lot 1S1000003200 (Property) where Oregon Watershed Enhancement Board (OWEB) and others have easements/rights related to the Property. The Project is proposing to cross the Property aerially for approximately 532 feet with no structures, roads, or equipment access required on the Property, nor any access for future activities including operation and maintenance of the project. A Survey of proposed easement is included in Appendix A and provides a map and legal description of the proposed easement. Figure 2-Proposed Southern Flow Crossing shows a zoomed in area of the proposed crossing looking from the south to the north.

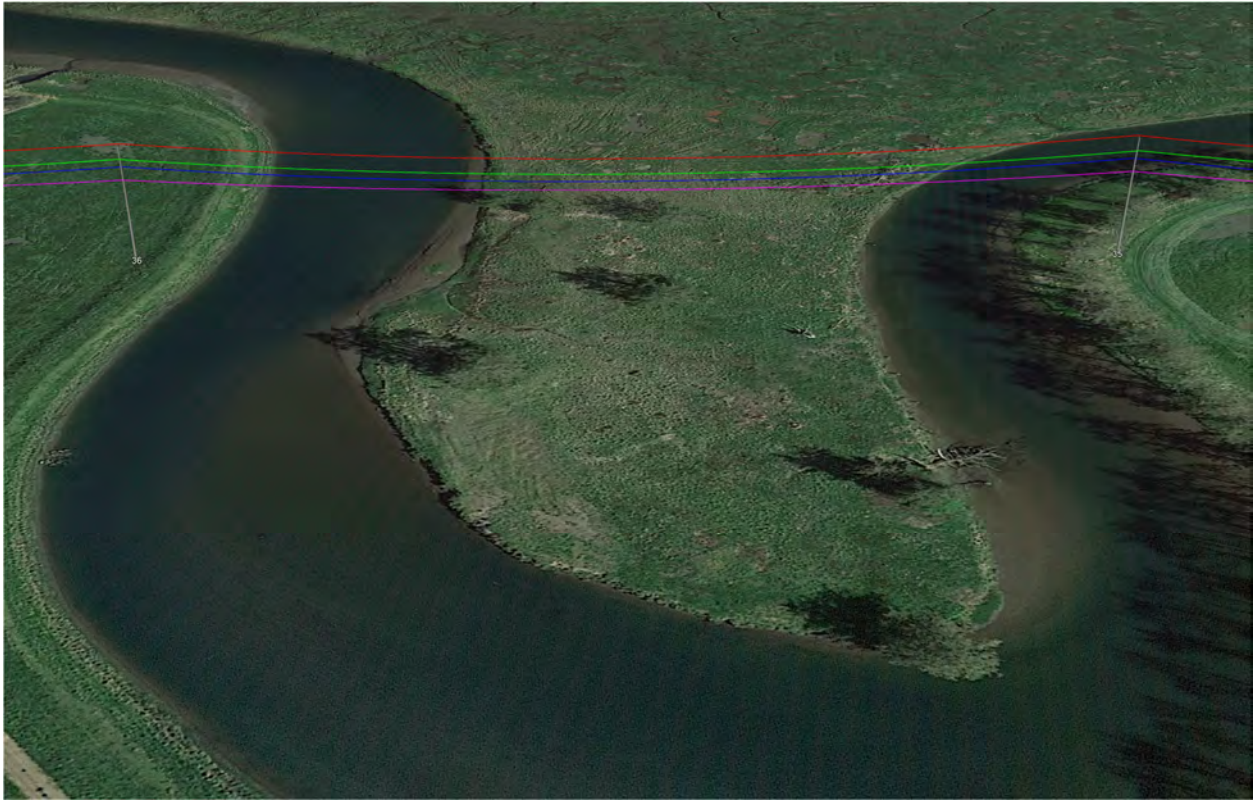


Figure 2-Proposed Southern Flow Crossing

1.1 Transmission Line

1.1.1 Corridor

The transmission line will require the establishment of an approximately 532 feet long by 100 feet wide easement across the Property. There will not be any construction activities on the Property. The corridor under and around the transmission line can continue to be used for its current purpose as long as the use does not conflict with the safe operation of the line and meets the National Electric Safety Code (NESC), Rural Utilities Services (RUS), and the District's standards for clearances and use. The only foreseeable conflict would be if trees grow up into the power line safety area, an area within 12.5 feet of the power line conductors. The easement alignment was selected to avoid existing trees and so that no construction, maintenance or operation activities would occur on the Property.

1.1.2 Conductors

The electrical conductor is the wire (or wires) strung from the power poles (located outside of the Property) that carries or moves electric current. The proposed single-circuit line will consist of three conductors that carries the electrical current making up the single-circuit configuration. In addition, a fiber optic (OPGW) cable will be installed to provide the necessary communications for the safe operation of the transmission line. The conductors will be approximately 25 to 35 feet above the ground at the lowest point.

The conductors are 0.5 inches in diameter and will not be covered with insulating material; instead, they will use air for insulation and ground clearance for public and environmental safety. Covered or insulated wire is not manufactured for 115kV voltage levels due to the higher voltage stresses around

SECTION 1 – PROJECT DESCRIPTION

the surface area of the conductors as compared to distribution voltage. For reference, the Hendrix Covered Conductor Manual, Rev 2 08 August 2013 lists covered conductor up to 33kV.

The transmission line conductors used in the Estuary area (as defined by OWEB) will be a twisted pair conductor or VR2 conductor (two conductors twisted together to create a non-uniform surface). The VR2 conductor is necessary to reduce aeoline vibration and galloping effect given the long spans (1,200 to 1,600 feet) and steady windspeeds in this area. This non-uniform pattern should also make the conductor more visible given it doesn't blend into the background due to the non-uniform pattern. In addition, no manufacturer makes a "twisted pair" conductor configuration with an overall insulated covering.

The conductors will be spaced more than 13.46 feet (161 inches) diagonally and will be oriented such that there will be 8 feet (96 inches) vertical separation and 10.8 feet (130 inches) horizontal separation, which far exceeds the recommended 40 inches vertical and 60 inches horizontal separation for avian friendly construction. Conductors will be attached to the power poles (located outside of the Property) using insulators to prevent the electricity in the conductors from moving to other conductors, the power poles, and the ground.

Arial markers will be used within the Estuary area to provide visibility in accordance with the Districts' Avian Protection Plan (Tillamook PUD, 2023). These markers will be the Hawk Eye™ Bird Flight Diverters BFD-050 as shown in Figure 3 – Bird Flight Diverters. The BFD-050 are 6 inches x 4 inches, similar area as marker balls, and will be spaced approximately 15 feet apart and staggered across each of the 4 wires (three electric wires and one OPGW shield wire) as recommended by the Avian Power Line Interaction Committee (APLIC) and the manufacturer, see the end of Appendix C for more information. The BFD's will be staggered on each of the conductors, creating a



Figure 3 - Bird Flight Diverter

a visual wall effect. These BFD-050 diverters were selected as they provide a large visible area, have fluorescent prismatic yellow bands, have glow in the dark white bands, and the attachment to the conductor is better suited for the VR2 twisted pair conductor as compared to other types of arial markers.

A 0.5-inch diameter overhead OPGW (fiber optic) cable will be attached to the power poles (located outside of the Property). The overhead fiber optic cable will extend between the source substation in Tillamook and the terminus substation in Oceanside used to transmit system communication and protection information. The overhead fiber optic cable will have the BFD-050 markers installed as described above.

The construction framing will be such that the top and bottom conductors will be on one side of the pole alignment (north side) and the center conductor will be on the other side of the pole alignment (south side). The fiber optic cable will be located above the top conductor on the top of the pole. Figure 4-115kV Tangent Framing shows the planned construction framing on the nearby poles.

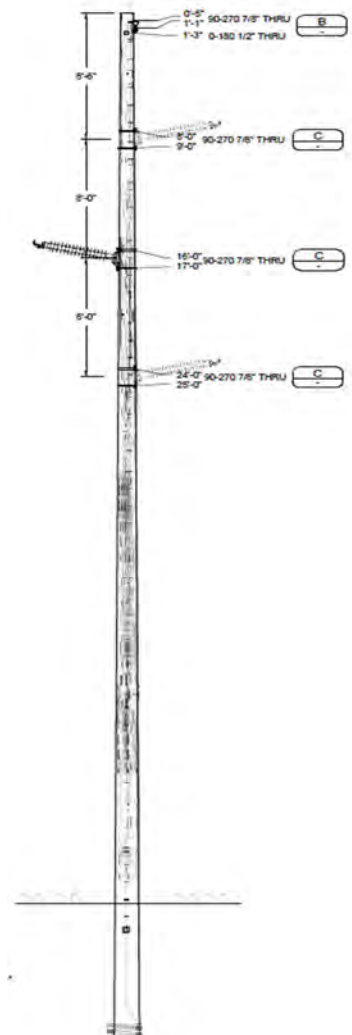


Figure 4 – 115kV Tangent Framing

1.2 Construction Activity

1.2.1 Transmission Line Construction

Transmission line construction involves a land survey of the route centerline across the property, which has already been completed without needing access to the Property. No construction activities are planned on the Property. Any future changes or modifications to the proposed transmission line within Southern Flow Corridor area (SFC) will require approval by OWEB prior to implementing the change/modification to ensure these changes/modifications are consistent with the Conservation Easement related to the SFC.

1.2.2 Equipment

No equipment will be required on the Property.

1.2.3 Access Roads

No access road will be required on the Property.

1.2.4 Vegetation Removal

The original field investigation that was performed for the Land Use Approvals identified some trees on the Property that may have required trimming. As the final design progressed, the route was moved 100 feet to the south to avoid having to perform any work within the Property. The final route is as shown on Figure 1–Final Route and in Appendix A.

1.2.5 Power Pole Installation

No power poles will be installed on the Property.

1.2.6 Conductor Installation

Installation of the sock line (conductor pilot line or pulling rope) will be performed via ground methods. Other techniques could be used to pull the sock line across the Property, such as helicopters or drones. In this case, no access to the Property would be required. Ropes will be draped from the stringing sheaves at each power pole (located outside the Property). A pilot line is then strung along the ground and attached to each rope at the power pole location. The pilot line will be pulled up to the sheave and pulled through until all sheaves within a pull section have the pilot line installed through the sheaves. At that time, the pilot line will be attached to the pulling line and will be pulled back through before being attached to the conductor for the final pull-through. The conductor will be strung using powered pulling equipment at one end of the pull and powered braking or tensioning equipment at the other end, where all equipment will be located outside of the property.

1.2.7 Conductor Pulling and Tensioning Sites

Conductor pulling and tensioning sites will not be located on the Property.

1.2.8 Staging Areas

No staging areas will be located on the Property.

1.3 Estimated Land Disturbance

No ground disturbance will occur on the Property for construction nor for future operation and maintenance as this easement is aerial only.

1.4 Maintenance and Operation Access

No access to the property is needed for future maintenance or operation of the transmission line.

1.5 Fire Protection

No construction equipment will be used on the Property eliminating the need for specific plans for fire protection on the Property. In general, for the Project, all federal, state, and county laws, ordinances, rules, and regulations pertaining to fire prevention, pre-suppression, and suppression will be followed. The construction contractor is required to follow the District's Fire Mitigation Plan, see Appendix B, and all Oregon Department of Forestry fire protection rules and regulations.

1.6 Avian Protection

The Avian Protection Plan (APP) recognizes that bird interactions with power lines can cause bird injuries and mortalities that may result in outages, violate bird protection laws, and cause grass and forest fires. Therefore, the District is committed to minimizing bird interaction with power lines to the greatest extent practicable. Staff from the PUD have attended specialized training for developing the APP and for applying the recommended avian protection construction standards. The transmission line will be designed and built to avian-friendly standards (APLIC, 2006) and in accordance with the APP, included in Appendix C. The spacing between the conductors crossing the property will be 9 feet by 9 feet, or 12 feet diagonally, which is 1.8 times and 2.7 times the recommended minimum spacing of 60-inch horizontal and 40-inch vertical separation between phase conductors.

The APP document was sent to the U.S. Fish and Wildlife Service (USFWS) on June 16, 2017, and to Randi Lisle with the Oregon Department of Fish and Wildlife (ODFW) on June 29, 2017, to solicit agency comments for use in updating and improving the plan. The USFWS responded and provided comments (see Appendix C). ODFW's Fish Biologist, Robert Bradley, provided comments to the County in a letter dated October 20, 2017 on the Land Use application, which included the APP. ODFW's Wildlife Biologist, Herman Biederbeck, indicated he had no additional comments in correspondence dated December 8, 2017.

The transmission line will by design incorporate more than adequate spacing between phases and grounded structures. The spacing requirements as required in the NESC for 115kV construction exceed the minimum spacing guidelines for avian protection. In areas of potential bird collisions, passive visual aids such as bird diverters or aerial balls will be used to reduce the likelihood of bird collisions with the power lines. These techniques were successfully deployed in a recent similar transmission line project jointly constructed by the District and Bonneville Power Administration (BPA) in a 2014 project along State Route 6 in Tillamook County. Studies have indicated that passive visual aid devices are as successful as active type devices and can reduce bird collision by 50 to 80 percent (Crowder, 2000).

Purpose and Need

The purpose and need of the Project are to: (1) reduce high loading on existing facilities; (2) increase electrical system capacity in the central Tillamook Valley to support ongoing growth in the area (load growth); (3) improve service reliability; and (4) replace aging infrastructure in the City of Tillamook, Netarts, Oceanside, and the surrounding areas.

2.1 Reduce High Loading and Increase Capacity

The Wilson River Substation is approaching its planning level capacity as a result of increased electrical use in the City of Tillamook, Bay City, and the communities of Netarts and Oceanside. RUS recommends that older substation power transformers not be used more than 80 percent of their capacity under normal operating conditions to ensure that backup power is available to neighboring electrical systems. RUS further recommends that older equipment not be continuously operated at maximum capacity. Usage data for the service area and the Wilson River Substation (central Tillamook Valley) show a growing trend over the past 10 years in electricity use at the system level, and for the loads served by the two power transformers in Wilson River Substation.

The District has performed contingency analyses where the largest system component is removed from service (normal less one, or N-1). Such analyses are standard practice in the electric utility industry and recommended by national organizations such as the Institute of Electrical and Electronics Engineers (IEEE) and RUS. The largest component in the central Tillamook Valley is the loss of the power transformer T2 at Wilson River Substation. The results under N-1 conditions show the remaining Wilson River, Garibaldi, and Trask River substation transformers are loaded to within 92 percent of the combined winter capacity and exceed 95 percent of individual power transformer capacity.

Building a substation in the Netarts-Oceanside area will transfer approximately 10,500 kilovolt-amperes of capacity at peak times from the Wilson River Substation to the proposed Oceanside Substation, allowing for ongoing development and growth in the central Tillamook Valley and Netarts-Oceanside areas and the central Tillamook Valley area (including the City of Tillamook). The new Oceanside Substation will also provide reserve capacity to allow for the transfer of 10,000 kilovolt-amperes of electricity from the Wilson River Substation to the proposed Oceanside Substation during outage or maintenance activities.

2.2 Improve Service Reliability

The Project will serve approximately 1,800 electric meters (customers), which equates to a population of 3,800¹ in the geographic area along State Route 131 located west of the Tillamook River. This includes the communities of Oceanside and Netarts as well as Whiskey Creek Road. Currently this area is served by feeder W51, a more than 14-mile-long distribution line that passes along heavily traveled highways, through forest lands and tree-lined rights-of-ways from the Wilson River Substation. Approximately 1,800 electric customers are located near the end of the line and have experienced many outages. The feeder that serves these customers is the worst-performing feeder based on the customer-hours out by a factor of 2.8 times compared to the second-worst-performing feeder. Figure 5-Feeder Reliability below shows the customer-hour outages for each feeder in the feeders in the service territory from 2011 through 2016. For example, if an outage occurs for 2 hours and five customers are without power, an

¹ Based on U.S. Census Bureau Statistics (2010).

SECTION 2 – PURPOSE AND NEED

outage of 10 customer-hours will result.

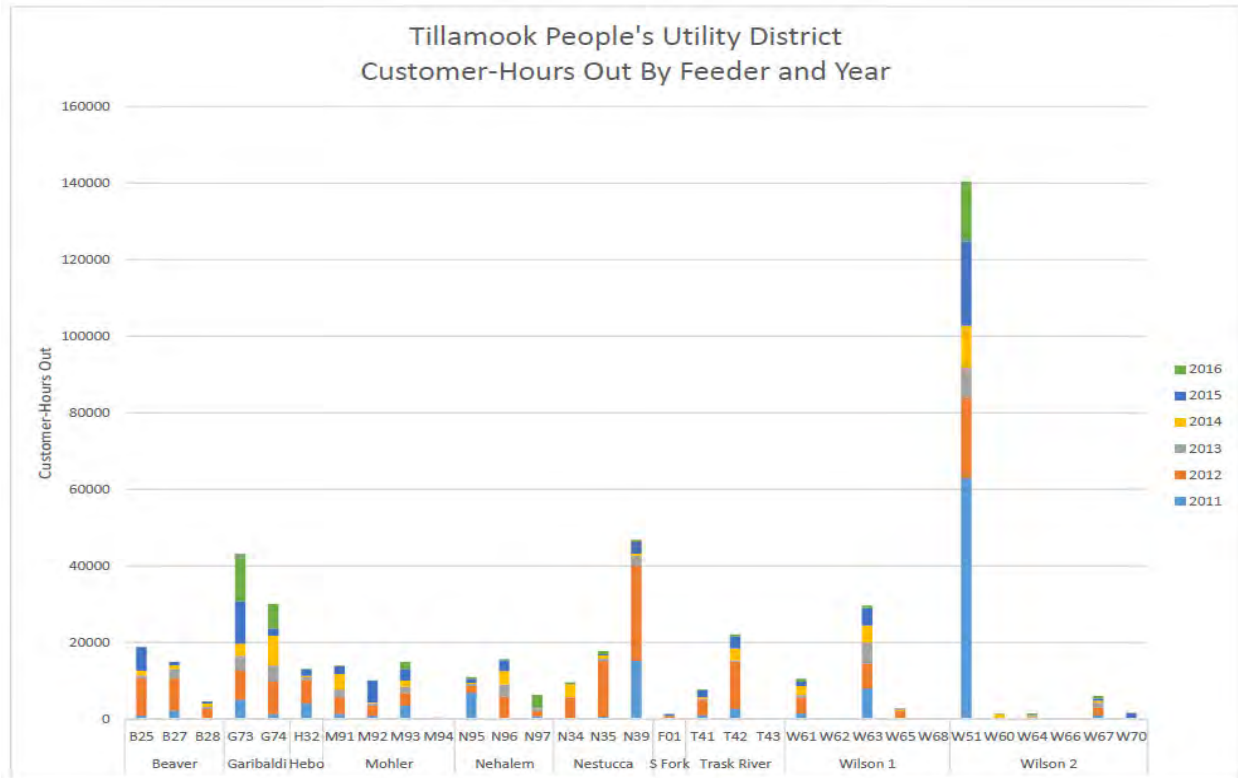


Figure 5-Feeder Reliability

The Project will provide a new, more reliable source of power to the Netarts-Oceanside area and substantially reduce the number of customers affected by an outage and the length of the outage. Transmission lines such as the proposed transmission line are built to a higher degree of reliability than distribution lines due to their more critical nature and connection the bulk power grid as compared to distribution lines. This will result in fewer outages in the Netarts-Oceanside area.

The proposed substation will also provide a second source of electricity to the central Tillamook Valley. When an outage occurs, the damaged section of the feeder can be isolated, and the undamaged portions of the line restored to service because there will be sources of electricity at each end of the electric system. This will substantially reduce the outage time for customers not located in the area of the damaged line segment.

The proposed substation will distribute electricity to customers using two feeders and utilize the existing feeder to serve customers within the City of Tillamook as opposed to the one feeder serving the same customers. As a result, there will be fewer customers on each feeder and an outage on one feeder will not affect customers located on the other feeder. This will substantially reduce the number of customers affected by the outage. During outages related to the Wilson River Substation, the proposed transmission line will allow for the transfer of electricity and can serve customers into the City of Tillamook area (that is, the central Tillamook Valley floor).

2.3 Replace Aging Infrastructure

Several miles of the existing radial distribution line currently serving the Netarts, Oceanside, and Whiskey Creek Road areas is a double-feeder pole line that is more than 50 years old. While some improvements have been implemented in the recent past, this line is aging and does not have the

SECTION 2 – PURPOSE AND NEED

capacity to continue to service the Netarts-Oceanside area. A radial electrical system has only one power source for a group of customers and a power failure along the radial line interrupts power in the entire line, which must be repaired before power can be restored. Therefore, any repairs require an outage that cuts power to approximately 1,800 customers.

This double-feeder line needs to be replaced with a single-feeder line of a larger wire. Currently, work on this aging line cannot be accomplished without several long, extended outages to customers in the Netarts, Oceanside, and Whiskey Creek Road areas. Construction of the proposed transmission line will allow the aging double-feeder line to be removed from service and rebuilt with minimal interruption to customers because electricity can be re-routed through the Oceanside substation.

2.4 Route Selection Process

The original route, the Netarts Route, was located south of the City of Tillamook. Permits and easements were underway in the early 2000's to secure the route shown in purple and green in Figure 6-Major Route Evaluated over a 20-year Period. However, BPA eliminated the connection source point where the project would receive electric power and moved to the source three miles north to the BPA substation located just east of the City of Tillamook. A second route, the City Route, was identified that passed through the City of Tillamook along the industrial sector of the City of Tillamook and out Highway 131 and then jumped up into the forested area shown in red and dark blue in Figure 6 below. Underground options were considered for segments of this route, but were eliminated given that the undergrounding of 115kV transmission was 18 times the cost of the overhead options. The City Route could not obtain the necessary Land Use Approved from the City of Tillamook and the decision was upheld by the Oregon Land Use Board of Appeals (LUBA).

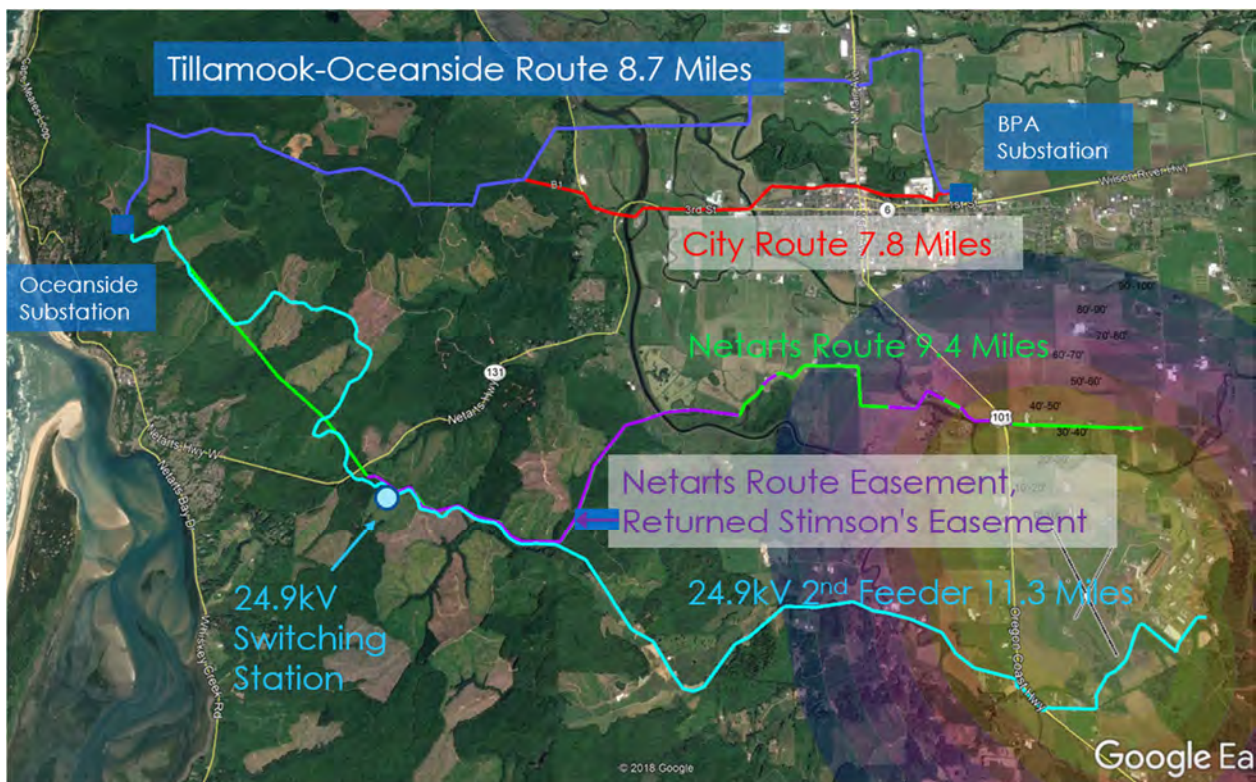


Figure 6-Major Route Evaluated over a 20-year Period

SECTION 2 – PURPOSE AND NEED

2.4.1 Citizen Advisory Group

To identify a viable route, a Citizen Advisory Group (CAG) was formed to review and recommend a corridor for the proposed transmission line. The CAG was made up of 14 volunteers from the general Project area and included landowners, agency staff, representatives from agricultural and dairy industries, and representatives from the business community. The proposed location for the Project was selected following a detailed analysis of potential alternative routes as well as recommendations received from the CAG. This analysis incorporated a systematic rating system that was established for evaluating each alternative, which included over 40 permutations of the various routes. The CAG examined each alternative against a set of established criteria such as permeability, ease of obtaining corridor approval, access, constructability, and a series of other environmental, land use, and financial factors. Figure 7-CAG Routes Explored shows the final routes selected by the CAG based on the evaluation criteria.

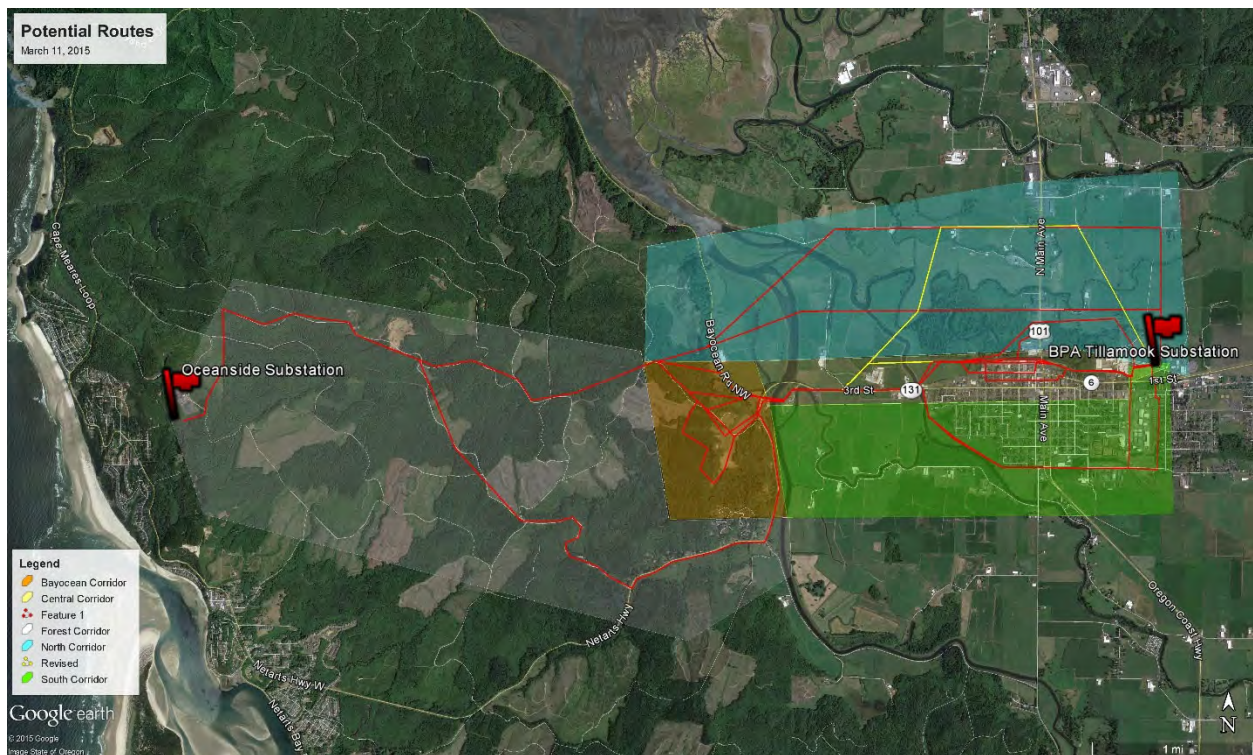


Figure 7-CAG Routes Explored

Through a very public and collaborative process, the CAG narrowed down the route to those shown in Figure 8—Final CAG Routes Evaluated. Figure 9-Final CAG Routes (Selected Route 3A) shows the final routes, where the CAG favored route 3A, with instructions to the PUD to seek routes further north where possible.

SECTION 2 – PURPOSE AND NEED

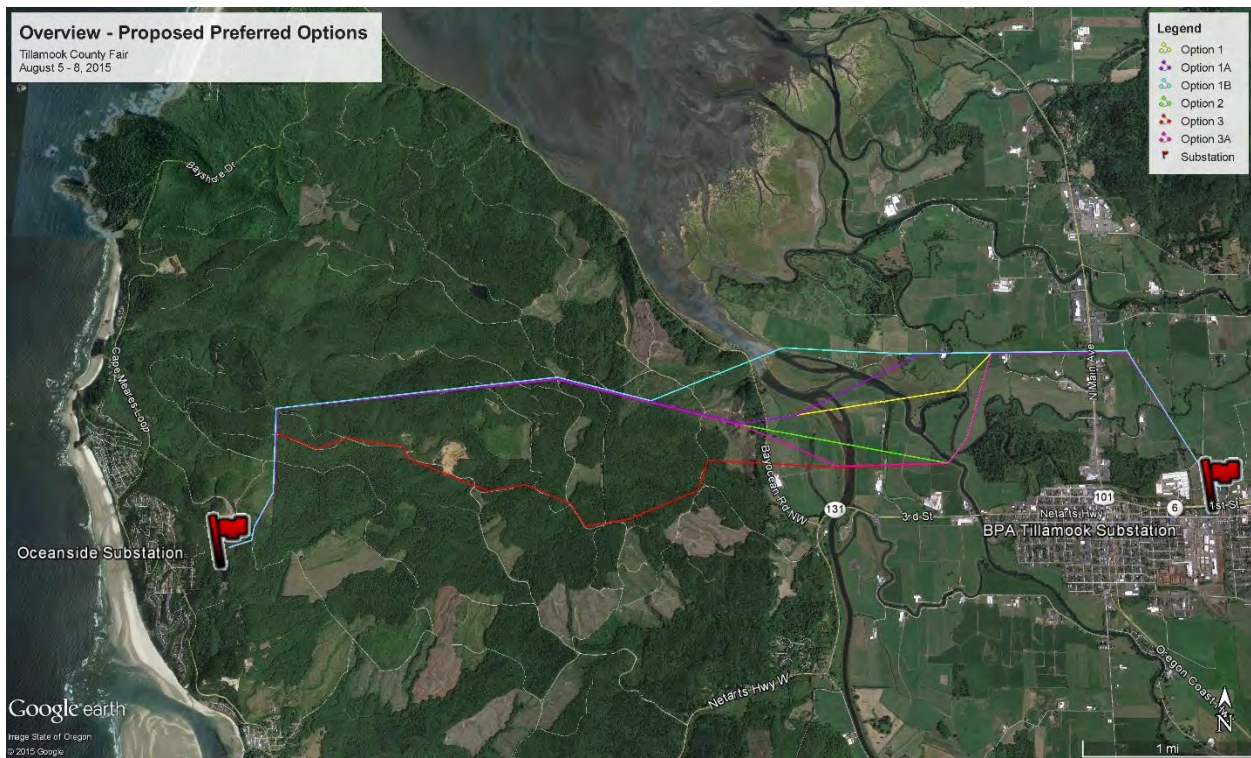


Figure 8-Final CAG Routes Evaluated



Figure 9-Final CAG Routes (Selected Route 3A)

SECTION 2 – PURPOSE AND NEED

2.4.2 Final Alternatives

Additional alternatives of the CAG routes were considered, including adjustments to the recommended route to align with existing corridors, undergrounding of sections of the transmission line using directional drilling (due to very soft soils), and a new alternative of installing a second 24.9kV distribution line instead of a transmission line.

The transmission line corridor recommended by the CAG was adjusted based on feedback from public meetings and individual meetings with affected landowners. Several public meetings were conducted to collect property owner’s comments and preferences. Adjustment included relocating the transmission line from the middle of farmland to adjacent public corridors including the Port of Tillamook Bay’s railroad right-of-way and Wilson River Loop Road, where the Project is east of U.S. Highway 101 (Highway 101), and moving the line further north where possible (CAG recommendation).

An outside consultant was retained to guide the public process and develop the selection criterion. Several factors were compared including, number of tax lots, unique landowners, acres of privately and publicly owned property, cost, co-location with other utility corridors, buildings within 200 feet of the route, acres of farm and forest land, and acres of wetlands and stream crossings. Figure 10-Route Evaluation Wetlands shows wetland information related to different route alternatives. The route impacting the Property (Original CAG route 1D and final route C2) was selected over the route that bypassed the Property (Original CAG route 3A and final route C1) because it was 30 percent shorter in length thus reducing the number of property owners, the cost, the acres of wetlands, and the acres of farmlands, see Figure 11-Recommended Route based on the public process. The final estimated cost for the transmission line was \$1M per mile, see Appendix D for the engineer’s estimate.

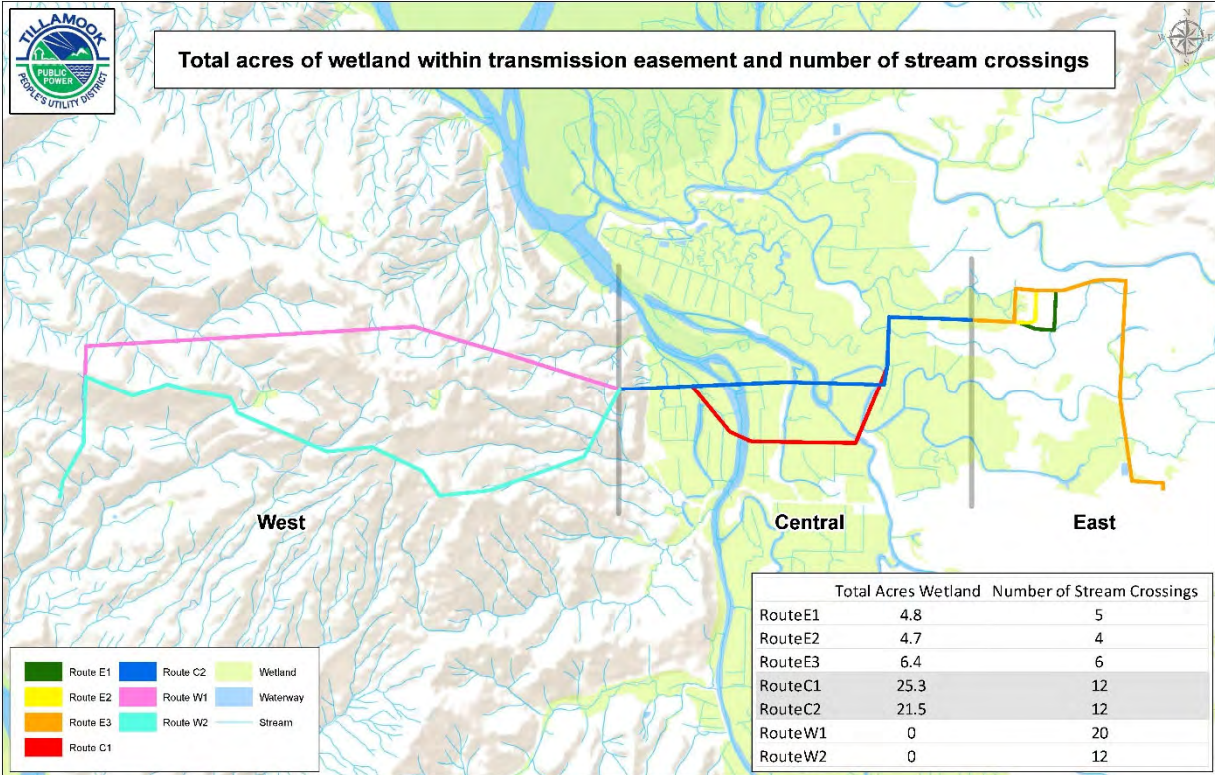


Figure 10-Route Evaluation Wetlands

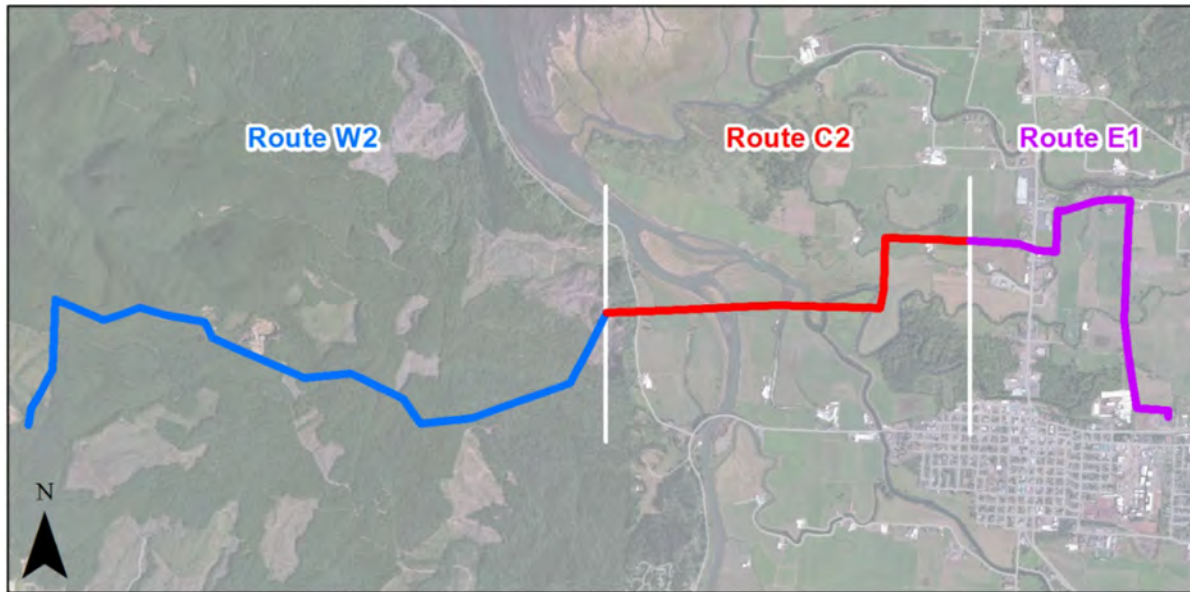


Figure 11-Recommended Route

2.4.3 Underground Alternatives

The underground analysis performed for the previous City route used ductbank construction down City streets and alleyways. The engineer’s estimate, performed by a professional engineer with Triaxis, concluded that the underground ductbank alternative through the City of Tillamook was 18 times more expensive than the same distance using overhead construction. This information was provided to the public in a June 9, 2011 letter to the City Manager and in a presentation to the CAG in April of 2015.

A brief review was performed to underground the 115kV transmission line across the farm properties for the latter part of route segment C2 (route 1D is a section of C2), shown above in Figure 11, using the recommended construction method of directional drilling (due to the soft soils and river crossings) and also using submarine cable. Information and costs were assembled, and planning level estimates were developed for the directional drilling option along with consultation with an international engineering (experts in design and construction) firm, Burns and McDonnell, in April of 2017 regarding submarine options. The underground option does not include costs if a casing is needed due to limited available depth below the rivers and the very soft soil condition. The addition of a casing could increase the cost of the underground option by 25 to 30 percent.

The District signed a contract for the construction of the transmission line and substation. The cost for the overhead transmission line was \$1,404,400/mile. The overhead route (previously identified as route 1D) is 1.614 miles through the area defined by OWEB as being the Estuary. The cost for the overhead line in the Estuary is approximately \$2,265,100.

The planning level estimate to bury the overhead section of the transmission line through the Estuary was updated in 2023 and is \$13,200,000 for the estimated 1.33 miles route, See Figure 12-Underground Transmission Line Route (1d).

The cost for directional drilling under farmlands and rivers using HDPE piping was estimated to be about 5.8 times the cost of the overhead option. The submarine cable option was more than the directional

SECTION 2 – PURPOSE AND NEED

drilling alternative. PacifiCorp indicated one of their 115kV river crossings was estimated at \$22M. Appendix D contains the information on underground directional drilling analysis. The estimate and back-up information are included in Appendix D.

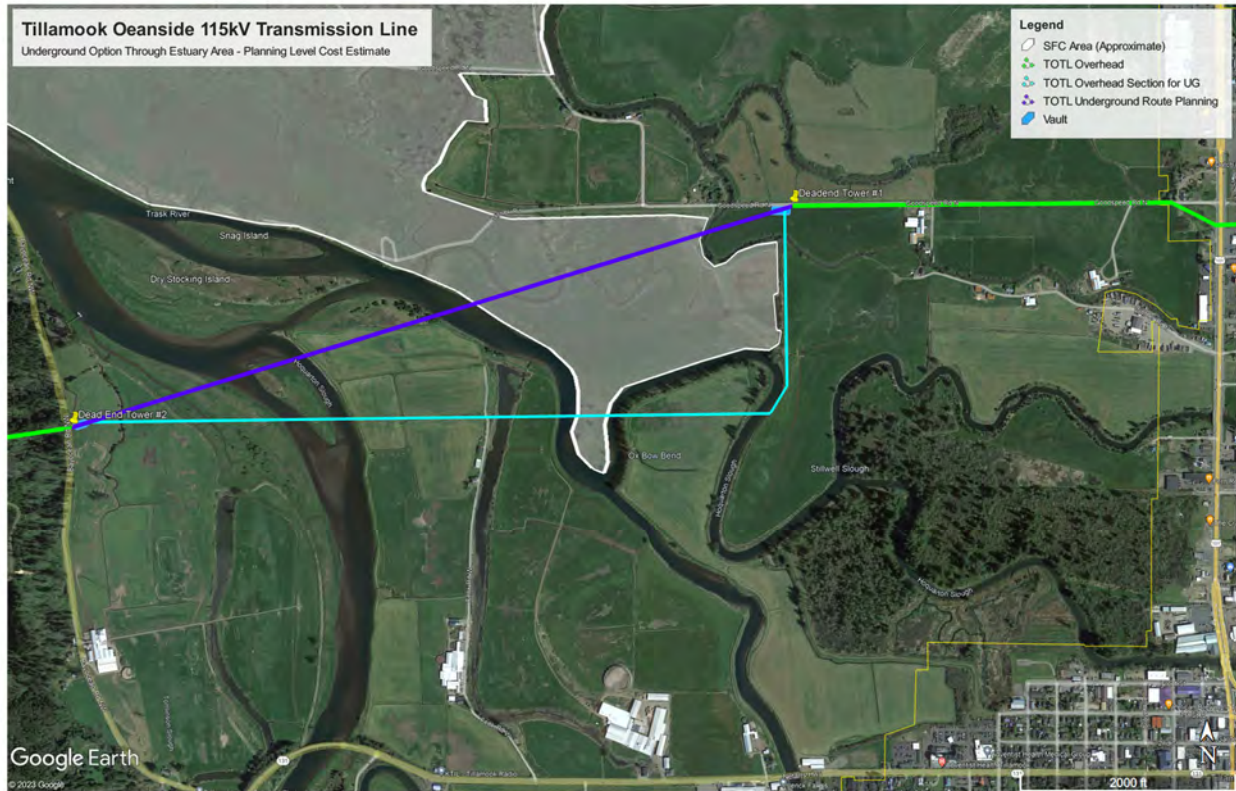


Figure 12 - Underground Transmission Line Route (1d)

Compliance with Regulations

The Project has undertaken many efforts to secure all the necessary permits and approvals. These include the US Army Corps of Engineers Nationwide Permit 12 (Section 408, Section 10, and Section 404), Oregon Department of State Lands, Oregon State Historic Preservation Office, US Department of Agriculture, Tillamook County Land Use including a Zero Rise analysis, the City of Tillamook, the Port of Tillamook Bay, Oregon Department of Transportation, Oregon Department of Environmental Quality (401 Water Quality and 1200C Stormwater), Federal Aviation Administration, the Oregon Department of Aviation, and many land owners. Even with all of the effort and numerous permits, the District recognizes that the USFWS may require some additional authorizations.

3.1 Tillamook County Land Use Regulations

The Project has secured the necessary County Land Use Approvals included in Appendix E, which were upheld by LUBA and the Oregon Court of Appeals.

3.2 Compliance with Federal and State Regulations

The District borrows funds for its capital projects from the United States Department of Agriculture's Rural Utility Service (RUS) program. All projects, including the Project, have undergone the necessary National Environmental Policy Act (NEPA) process including consultation with the Oregon State Historic Preservation Office (OSHPO) and National Oceanic and Atmospheric Administration (NOAA). The approvals and consultations are included in Appendix E. The project will be designed, constructed, and maintained such that it will follow all applicable permits and all requirements set forth by the USFWS. The District will secure the necessary permits and authorization from OWEB and the USFWS through the submittal of this document and responses from such parties in the form of written instructions.

SECTION 3 – COMPLIANCE WITH REGULATIONS

BIBLIOGRAPHY

Avian Power Line Interaction Committee (APLIC). 2012. *Reducing Avian Collisions with Power Lines: the State of the Art in 2012*. Edison Electric Institute and APLIC. Washington, D.C.

Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines, The State of the Art in 2006*. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996

Mitigating Bird Collisions with Power Lines: The State of the Art in 1994

Efficacy of Different Types of ‘Bird Flight Diverter’ in Reducing Bird Mortality Due to Collision with Transmission Power Lines. 2020 Global Ecology and Conservation, Volume 23, September 2020, e01130.

A Simple Technology Could Help Stop Birds from Colliding with Power Lines. Audubon Society, 2019.

Avian Power Line Interaction Committee (APLIC). 2018. *Eagle Risk Framework: A Practical Approach for Power Lines*. Edison Electric Institute and APLIC. Washington D.C.

Avian Protection Plan (APP) Guidelines. The Edison Electric Institute’s Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Services (USFWS)

Wells Project 230 Kv Transmission Line Avian Protection Plan. Wells Hydroelectric Project. FERC No. 2149. June 2009. Public Utility District No. 1 of Douglas County.

Appendix A

Survey of Proposed Easement



CHASE, JONES & ASSOCIATES INC.

FORMERLY BOOTH & WRIGHT

LAND SURVEYORS & ENGINEERS SINCE 1885

530 NE Couch St. | Portland | Oregon 97232
(503)-228-9844 | info@chasejonesinc.com

Date: December 30, 2021
Project #: 16063

100' Wide Easement (Tillamook County – Tax Lot 1S10000003200)

A 100.00 foot wide strip of land, being 50.00 feet on each side of the following described centerline, over a portion of that tract conveyed to Tillamook County as Tax ID No. (1S10000003200) Tillamook County Deed Records, and being situated in the Southeast Quarter of Section 23, Township 1 South, Range 10 West of the Willamette Meridian, County of Tillamook, State of Oregon, said centerline being described as follows:

COMMENCING at the Southeast corner of the Southeast Quarter of said Section 23; thence North 00°50'22" East along the East line of said Southeast Quarter a distance of 689.97 feet to the **TRUE POINT OF BEGINNING**; thence South 88°21'42" West a distance of 5388.64 feet, more or less, to the West line of the Southwest Quarter of said Section 23 and the **TERMINUS** thereof.

The sidelines of the above described centerline should be shortened or lengthened to the centerline of the Trask River and Haquarton Slough.

Containing 53,493 square feet, or 1.23 acres, more or less.

REGISTERED
PROFESSIONAL
LAND SURVEYOR

Eric D. Jones

OREGON
JULY 16, 1982
ERRIC D. JONES
1996

RENEWS: 6-30-23

CHASE, JONES & ASSOCIATES INC.
530 N. E. COUCH ST. PORTLAND, OREGON 97232
PHONE: (503) 228-9844
PROJECT NO.: 16063 DATE: DECEMBER 23, 2021
1/4 SECTION: N/A SCALE: 1" = 300'

EXHIBIT MAP
FOR A 100' WIDE EASEMENT
OVER
TAX LOT 1S10000003200
(TILLAMOOK COUNTY)
SITUATED IN THE
SOUTHEAST 1/4 OF SECTION 23, T. 1 S., R. 10 W., W.M.
COUNTY OF TILLAMOOK,
STATE OF OREGON



REGISTERED
PROFESSIONAL
LAND SURVEYOR

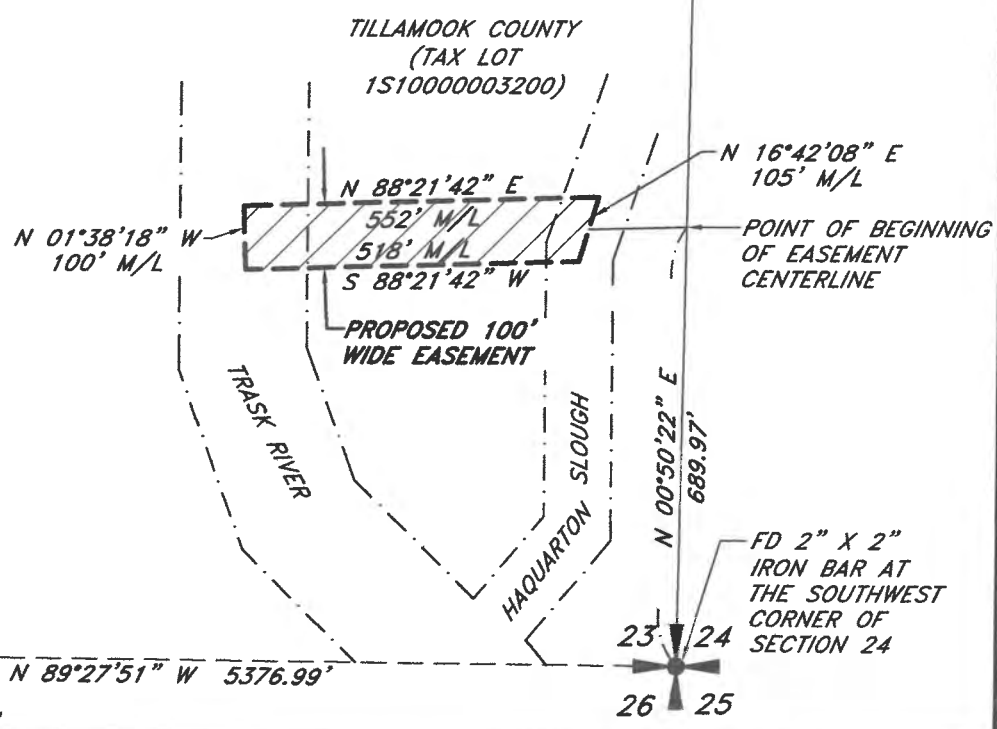
Eric D. Jones

OREGON
JULY 16, 1982
ERRIC D. JONES
1996

RENEWS: 6-30-23

23 24
FD BRASS DISC
AT THE WEST
1/4 CORNER OF
SECTION 24

N 00°50'22" E 2634.16'



Easement Type	Area (sq.ft.)
Permanent Easement (PE)	
Transmission Corridor (TLC)	53,493
Access Easement Along Existing Roads (outside of TLC)	N/A
Access Easement Along New Temporary Roads (outside TLC)	N/A
Access Easement Along New Permanent Roads (outside TLC)	N/A
Total PE Area:	53,493
Temporary Construction Easement (TCE)	
Pulling Tensioning Area (Outside of TLC)	N/A
Total TCE Area:	N/A

Appendix B

Fire Protection Plan



Wildfire Mitigation Plan



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 - 1.1 Policy Statement
 - 1.2 Purpose
 - 1.3 Objectives
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 - 2.2 Asset Overview
 - 2.3 Fire Protection Zones
- 3) **RISK PROFILE**
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 - 3.2 Model Fire High Consequence Areas (FHCA)
 - 3.2.1. Identified FHCA
 - 3.2.2. Overview of System Facilities & Equipment
 - 3.3 Public Data
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 - 4.1.2 Tree Trimming and Removal
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 - 5.2.2 Internal Communication Regarding Fire Level Status
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- 6) **PLAN MAINTENANCE & IMPLEMENTATION**
 - 6.1 Plan Maintenance & Implementation

1) INTRODUCTION

1.1 Policy Statement

Tillamook People's Utility District (Tillamook PUD)'s overarching goal is to provide safe, reliable, and affordable electric service in Tillamook County and parts of Clatsop and Yamhill Counties. To meet this goal, Tillamook PUD constructs, operates, and maintains its electric facilities in a manner that minimizes wildfire risks.

1.2 Purpose

This Wildfire Mitigation Plan (Plan) describes the strategies and programs to mitigate the threat of wildfires ignited by electrical equipment in Tillamook PUD's service area. The guidelines and procedures outlined in this Plan are implemented and supported by Tillamook PUD personnel.

1.3 Objectives

The primary objectives of this Plan are to:

1. Mitigate the probability that Tillamook PUD's electrical equipment may be the source of ignition of a wildfire, while continuing to provide reliable and affordable electric service to our customers.
2. Implement a plan that prioritizes safety, situational awareness, and preventative methods.
3. Maintain a plan that aligns with prudent utility practices.

2) UTILITY PROFILE

2.1 Service Area

Tillamook County encompasses an area 53 miles, north to south, and 31 miles, east to west. The Tillamook PUD service territory extends across 1,333 square miles of terrain, providing electric service to 23,000 customers in Tillamook County and small sections of Clatsop and Yamhill Counties. Figure 1 shows a map of the service territory.

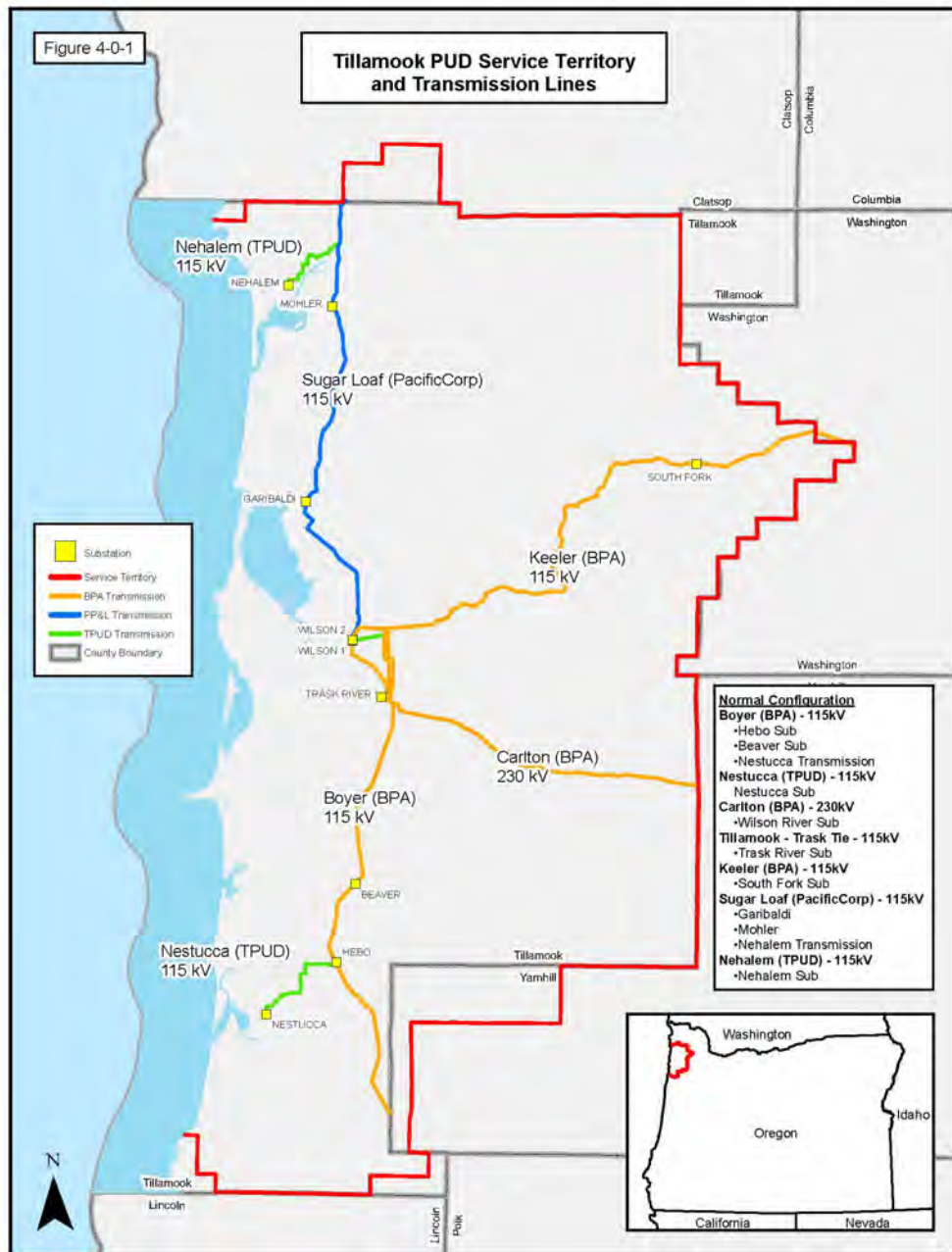


Figure 1 – Tillamook PUD Service Territory

2.2 Asset Overview

Within the service territory, Tillamook PUD provides electric service using both overhead and underground facilities. Tillamook PUD receives electric service from Bonneville Power Administration at their Tillamook 230kV/115kV substation and owns 12.1 miles of 115kV overhead transmission lines to connect six of nine substations in the central and south sections of Tillamook County. Three substations are connected to the Pacific Power 115kV transmission line located in the north part of the county. Thirty-two 26kV feeders distribute the electricity from the nine power substations through the community to customers.

Tillamook PUD owns and operates 778 miles of primary distribution lines (high voltage at 24.9kV, 20.8kV, and 12.4kV) and 440 miles of secondary (low voltage less than 600 volts) lines. These facilities are distributed throughout the service territory through 21,083 Tillamook PUD poles and 7,360 underground surface structures. Tillamook PUD has 236 miles of three-phase overhead primary lines and 345 miles of two and single-phase overhead primary lines. Tillamook PUD has 40 miles of three-phase and 157 miles of two and single-phase underground primary lines.

2.3 Fire Protection Zones

The Oregon Department of Forestry (ODF) defines the Regulated Use Zones in Oregon. The Tillamook PUD service territory is situated within the NW-1, NW-2, and NW-3 Regulated Use Zones as seen in Figure 2 below.

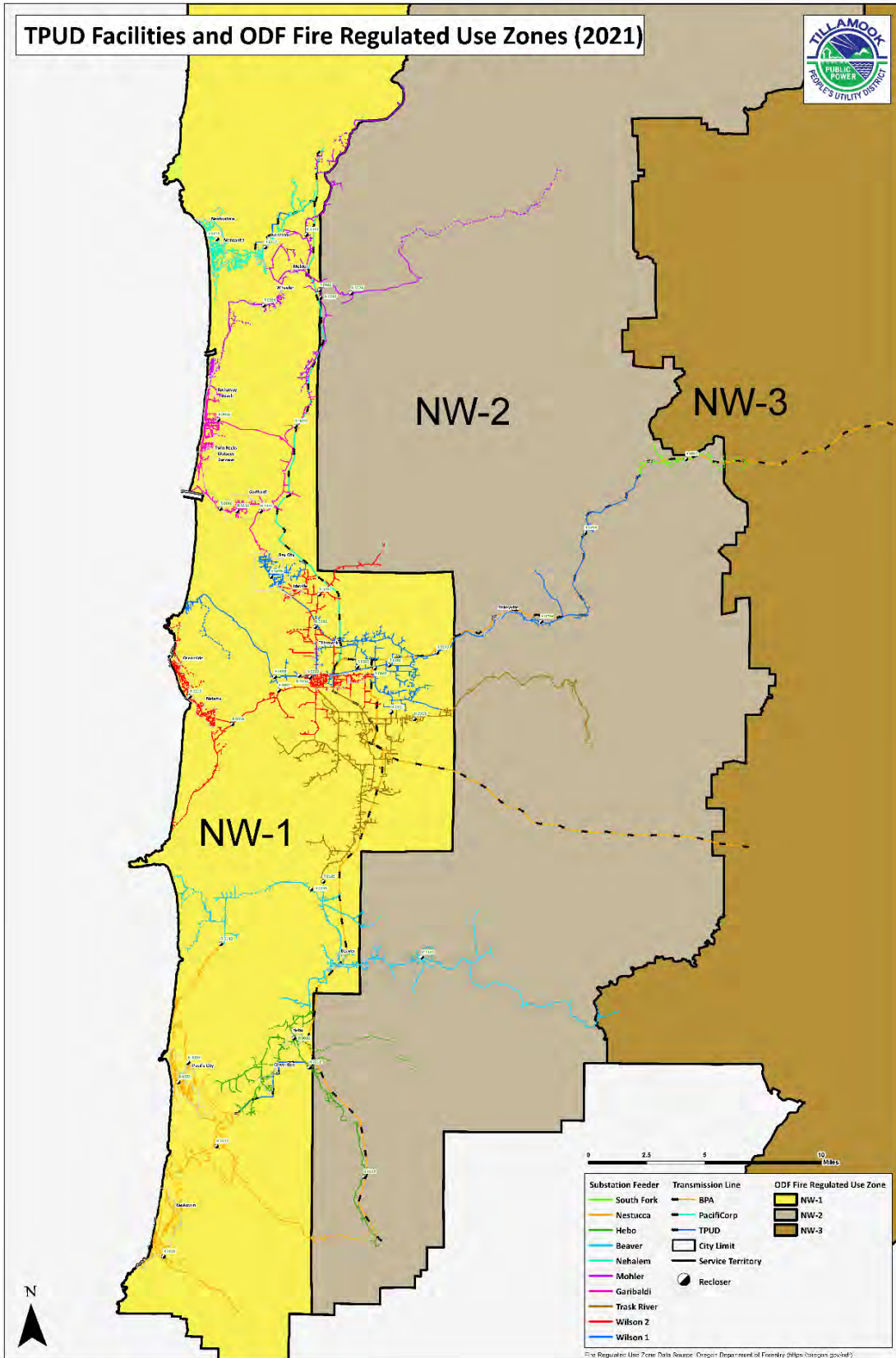


Figure 2 – Tillamook PUD Service Territory within ODF Regulated Use Zones.

3) RISK PROFILE

3.1 Risk Assessment

Fires from power lines may be caused when energized facilities contact combustible materials. This may include contact with vegetation or vehicles, wire to wire contact, fuse operation, and equipment failure. Tillamook PUD takes each of these possible events into consideration when planning, designing, and constructing the electric system.

3.1.1 Current Practices

Tillamook PUD tracks outages using NiSC's® outage management system. The outage data can be used to identify areas with higher than normal outage incidences and can help drive system improvements to mitigate risk. Figure 3 below overlays the PUD's electric grid and the Fire High Consequence Areas (FHCA) and shows fuses and reclosers that have had more than five operations in the past ten years. These areas are assessed to determine solutions for reducing outages, including additional tree trimming, replacement of fuses with automatic reclosers, relocating lines, and undergrounding.

Annual ground patrols are conducted and provide a visual inspection of the electric facilities. In addition, crews are patrolling facilities every day during the normal course of business. All issues noted during these patrols are evaluated and addressed. Infrared scans are conducted of the main Transmission and Distribution primary overhead and underground lines and all substations each year. These inspections help identify potential issues before an outage occurs.

The drone program supports facility access inspections with a primary focus on inspecting transmission structures on a five-year rotating cycle. Data logging includes photos, videos, and infrared imagery.

Where practical, lines are located in open areas and away from vegetation. Sufficient ground clearance is considered in the design as well as assessing easy access for ongoing operations and maintenance.

Protective Devices With >= 5 Operations

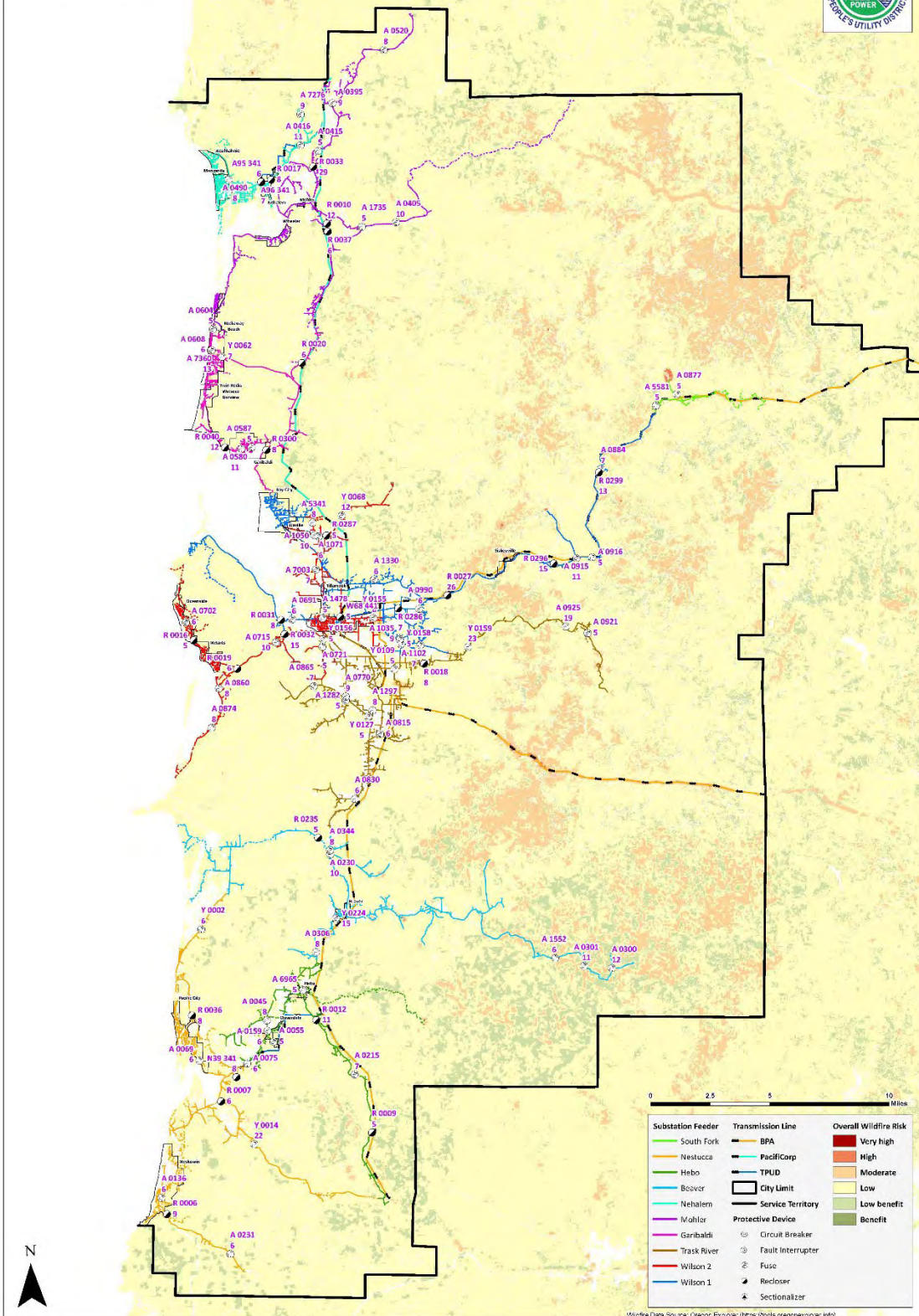
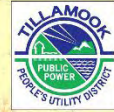


Figure 3 – Protective devices with multiple operations.

3.2 Fire High Consequence Areas (FHCA)

3.2.1 As seen in Figure 4, a map of the FHCAs has been overlaid with Tillamook PUD's primary electric facilities. The combination of these two data sets provides insight into higher-risk areas. In general, Tillamook PUD's service territory is predominantly in the low-risk category. However, some areas of the coastal range with PUD facilities are in the moderate-risk category.

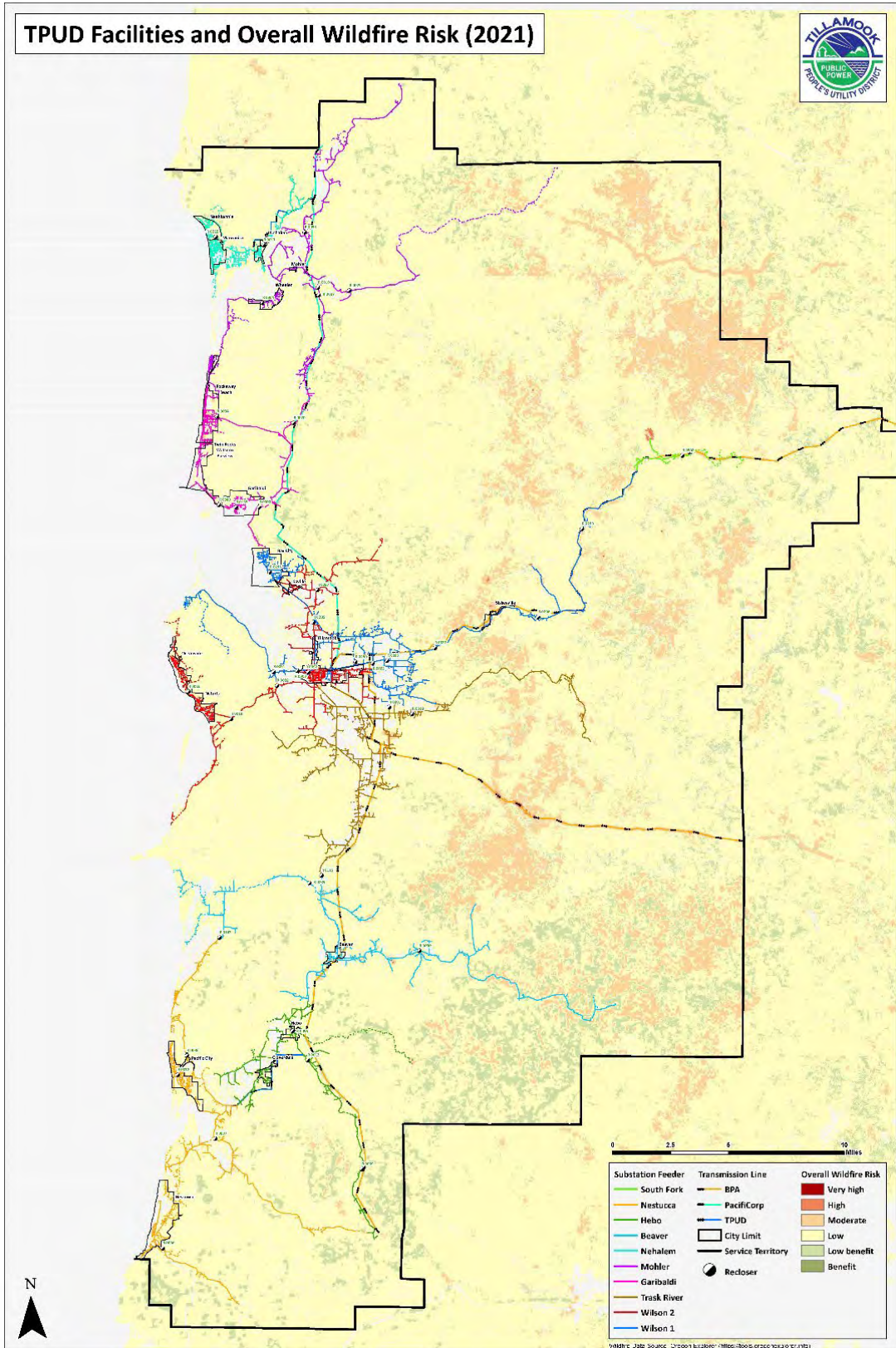


Figure 4 – FHCA within the Tillamook PUD service territory.

3.2.2 The tables below provide a summary of the transmission and distribution lines, facilities, substations, and feeders located within the Tillamook PUD service territory.

Transmission Lines Within Tillamook County		
Owner	Voltage (kV)	Miles
BPA	115	65.84
PacifiCorp	115	25.24
BPA	230	23.1
Tillamook PUD	115	12.13
		Total 126.3

Distribution Lines		
Primary Conductor	Voltage	Line Miles
Primary Overhead	14.4 / 24.9 kV	436.85
Primary Overhead	12.0 / 20.8 kV	142.73
Primary Overhead	7.2 / 12.5 kV	2.17
Primary Underground	14.4 / 24.9 kV	116.23
Primary Underground	12.0 / 20.8 kV	76.55
Primary Underground	7.2 / 12.5 kV	3.57
		Total 778.1

Power Poles with TPUD Facilities Attached	
Support Structure Count	Support Structure Count
Tillamook PUD	21,083
Customer-Owned	660
CenturyLink	482
BPA	262
Pacific Power	1
Total 22,489	

Substations and Feeders	
Substation	Feeder Count
Beaver	3
Garibaldi	2
Hebo	1
Mohler	3
Nehalem	3
Nestucca	3
South Fork	2
Trask	4
Wilson – Transformer T1	5
Transformer T2	6
Total 9	Total 32

3.3 Public Data

Tillamook PUD planning staff utilizes the Oregon Wildfire Risk Explorer Advanced Report to evaluate wildfire risk in the Tillamook PUD service territory, and for prevention and mitigation support resources. The report contains the following:

- Guidelines
- Concepts
- Land Ownership & Management
- Communities
- Fire History - Fire Ignitions
- Housing Density - Where People Live
- Overall Wildfire Risk
- Burn Probability
- Fire Intensity - Flame Lengths
- Overall Impact
- Hazard to Potential Structures
- Existing Vegetation Type
- Risk To Assets
- Probability of >4ft Flames

The report can be viewed in the following location:

<https://tools.oregonexplorer.info/OE HtmlViewer/Index.html?viewer=wildfireplanning>

The report is reviewed by Tillamook PUD planning and prevention staff at least annually.

4) MITIGATION STRATEGIES

4.1 Vegetation Management

4.1.1 Fuel Reduction

Tillamook PUD has implemented a Vegetation Management Program focused on keeping Right-of-Ways (ROW) clear of fuel. The program consists of tree trimming and removal, mowing, and the safe application of herbicides. Herbicide management is utilized after the establishment of ROWs to reduce fuel sources.

Non-selective and pre-emergent herbicides are utilized in substations where no vegetation is acceptable. Selective herbicides are utilized in ROWs to control trees and brush.

Tillamook PUD's Vegetation Management Program mitigates wildfire risk while also reflecting a reasonable balance of mitigation costs.

A sample overview of the Vegetation Management Program objectives completed annually can be seen in Figure 5.

TPUD 2020 VEGETATION MANAGEMENT

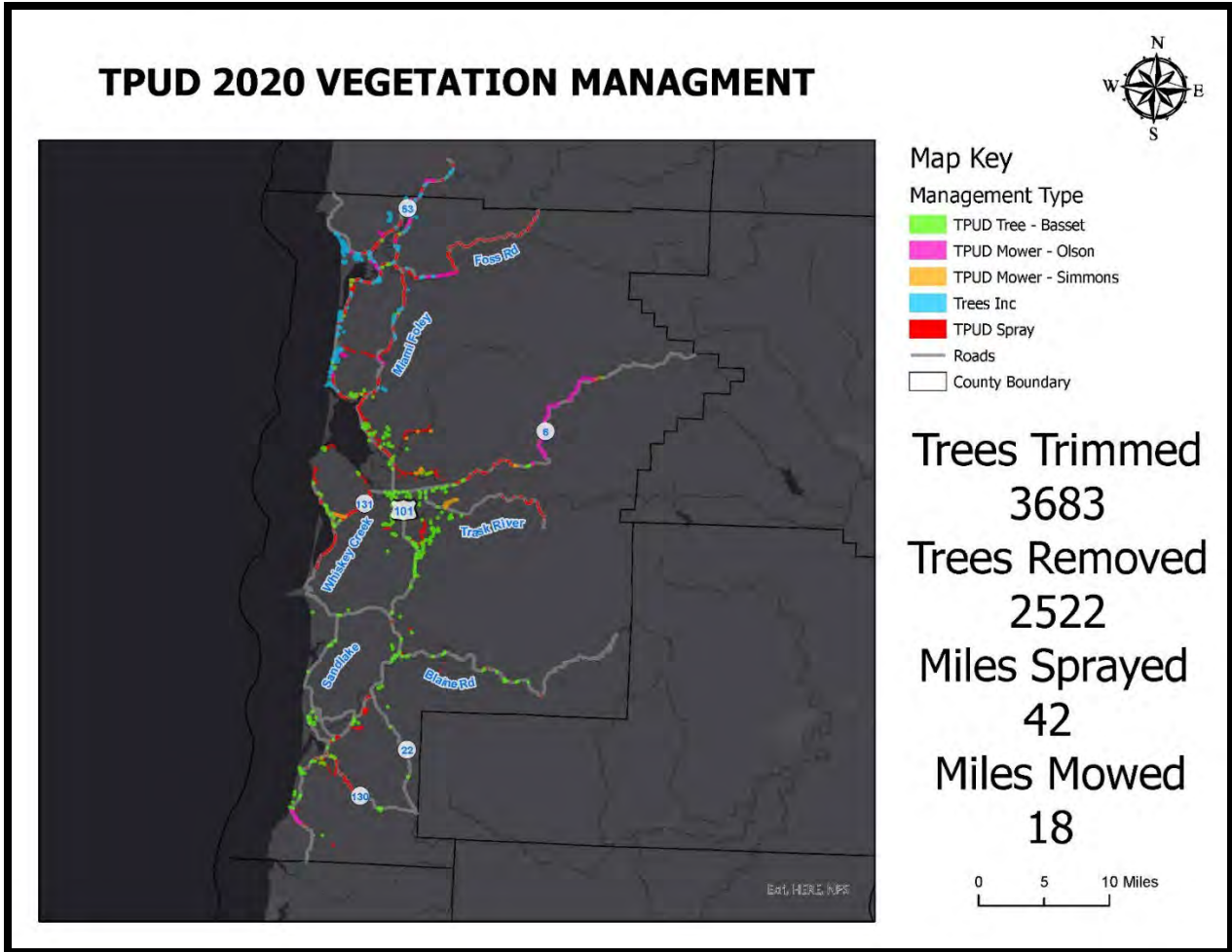


Figure 5 - A sample of the vegetation management program initiatives.

Tillamook PUD's Vegetation Management Program complies with all applicable state and federal clearance requirements, including OAR 860.024.0016/0017. Tree Trimming is systematically performed following a four-year cycle to maintain minimum clearances. Trees or branches are removed where imminent tree or branch failure would potentially damage electric lines or equipment. Fast-growing species located directly under the lines are removed.

When conducting routine maintenance of power lines and related equipment, Tillamook PUD makes efforts to identify and remove high-risk fuel sources as needed. Tillamook PUD crews also address vegetation concerns in response to service calls or identify at-risk vegetation while performing day-to-day operations.

4.2 System Inspection and Maintenance

Tillamook PUD has developed a rigorous testing program that performs the following system inspections and maintenance.

Pole Test and Treat

Tillamook PUD follows OAR 860-024-0011 and inspects, tests, and treats ten percent of its overhead facilities every year. This includes visual inspection, pole sounding, inspection hole drilling, and fumigant hole drilling accompanied with a chemical application to preserve the life of the pole. Such work occurs at the groundline and communication work zone levels.

Annual Detailed Inspection

Tillamook PUD performs a detailed field inspection of ten percent of its overhead and underground facilities every year in accordance with OAR 860-024-0011. The Tillamook PUD field inspector performs the detailed inspection on a per-facility basis documenting deficiencies, NESC code violations, and safety hazards.

Field reclosers are visually inspected and the batteries are tested each year.

Monthly Inspection

Operations staff perform monthly inspections of nine electrical substations. This inspection program requires testing and logging of systems within the substations.

Five and Ten Year Inspection

Reclosers are fully tested every five years along with the manual by-pass switches and the control device. The test data is logged and documented in the equipment database application.

Every ten years the entire substation is taken off-line, cleaned, inspected, and tested. This includes the power transformer, circuit switchers, metering, protective device equipment, alarms, and SCADA contact.

Public Safety Inspection

Routine safety inspections are performed annually to visually inspect 50 percent of Tillamook PUD's overhead facilities which meets the requirements of OAR 860-024-0011. Hazards and deficiencies are documented and corrective actions are completed.

4.3 System Hardening

Tillamook PUD's design and construction of system equipment aims to reduce the likelihood of ignition and improve electrical assets' survivability. System hardening investments are evaluated on a case-by-case basis. When practical, Tillamook PUD has utilized system hardening measures including:

- Stronger poles to address engineering standards that exceed code requirements.
- Larger spacing between energized conductors, reducing mid-span conductor contacts.
- Insulated secondary conductors including neutrals.
- Design for increased wind speeds, 100 mph versus 85 mph.
- Undergrounding areas that experience frequent outages.
- Right of Way management – clearing and width extensions.
- Over insulation of distribution circuits to improve resilience to salt corrosion and flash overs.
- Treated wood, galvanization, and stainless steel used to improve corrosion issues.

4.4 System Protection

Tillamook PUD staff have identified areas within the Tillamook PUD service territory where reclosers are necessary. Tillamook has adjusted the recloser settings as sensitive as is practical while still providing the proper coordination.

Tillamook PUD may selectively disable system reclosers in areas identified on the FHCA maps as Moderate risk areas as a preventative measure during wildfire season. Circuits have been assessed for risk based on length, the number of customers, history, access, system protection, and the location within FHCA zones. Based on the assessment, specific areas of the electric system have been identified where the recloser could be locked from automatically re-energizing the line.

Operations staff may set system reclosers to a non-reclose setting, preventing equipment from closing in on temporary faults. This decision will be made on a case-by-case basis based on the assessment of risk described above and the current level in the Key Response Strategy table as seen in Section 5.2.1.

These locations, shown below, correspond to the sections of Tillamook PUD overhead electric lines that are within the Moderate and Low Risk areas as identified on the FHCA maps.

Moderate Risk Areas (Non-Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
N97	R 0017	1 03 10 27 6700	N Fork Rd	190	Single Trip / Single Lock Out	NOVA1
N97	R 0017	1 03 10 27 6700	N Fork Rd	192	Single Trip / Single Lock Out	NOVA1
M91	M91 441	Mohler Sub	Mohler Sub - Line 91	193	Triple Trip / Triple Lock Out	NOVA 27
M91	R 0033	1 03 10 24 4403	Hwy 53	93	Single Trip / Single Lock Out	4E
M91	R 0033	1 03 10 24 4403	Hwy 53	94	Single Trip / Single Lock Out	4E
M92	M92 441	Mohler Sub	Mohler Sub - Line 92	165	Triple Trip / Triple Lock Out	NOVA 27
M92	R 0010	1 03 10 36 8102	Foss Rd	223	Triple Trip / Triple Lock Out	NOVA STS
M92	R 0029	1 02 09 05 3808	Mohler Sand & Gravel	110	Single Trip / Single Lock Out	4E
M92	R 0029	1 02 09 05 3808	Mohler Sand & Gravel	115	Single Trip / Single Lock Out	4E
G73	G73 441	Garibaldi Sub	Garibaldi Sub - Line 73	237	Triple Trip / Triple Lock Out	NOVA 27
W67	R 0287	2 01 09 07 1802	Kilchis River	224	Single Trip / Triple Lock Out	NOVA STS
W63	R 0027	2 01 09 24 2600	Wilson Rv @ Mills Bridge	226	Single Trip / Triple Lock Out	NOVA STS
W63	R 0296	2 01 08 10 8400	Wilson Rv Hwy @ Quonset Hut	209	Single Trip / Triple Lock Out	NOVA STS
W63	R 0299	1 01 08 25 6740	Wilson Riv @ Cedar Butte	210	Single Trip / Triple Lock Out	NOVA STS
A101	R 0302	1 01 07 03 8101	Above Lee's Camp	225	Single Trip / Triple Lock Out	NOVA STS
S42	R 0018	2 02 09 02 3700	Chance Road	202	Single Trip / Single Lock Out	TRI-S
S42	R 0018	2 02 09 02 3700	Chance Road	203	Single Trip / Single Lock Out	TRI-S
S42	R 0018	2 02 09 02 3700	Chance Road	241	Single Trip / Single Lock Out	NOVA
B27	B27 441	2 03 09 29 1212	Beaver Substation	250	Single Trip / Triple Lock Out	VIPER-S
B27	R 0030	2 03 09 26 6503	Blaine Rd @ Boulder Crk	219	Single Trip / Single Lock Out	NOVA STS
H32	R 0012	2 04 10 24 7706	Hebo - Hwy 22 @ Cedar Creek	217	Single Trip / Single Lock Out	NOVA STS
H32	R 0009	2 05 09 09 3103	HWY 22 @ Buck Creek	56	Single Trip / Single Lock Out	E

Moderate Risk Areas (Non-Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
N39	R 0007	2 05 10 05 7301	Little River	49	Single Trip / Single Lock Out	E
N39	R 0007	2 05 10 05 7301	Little River	59	Single Trip / Single Lock Out	E
N39	R 0006	2 05 11 36 5501	Old Hwy 101 Slab Creek	52	Single Trip / Single Lock Out	E
N39	R 0006	2 05 11 36 5501	Old Hwy 101 Slab Creek	58	Single Trip / Single Lock Out	E

Low Risk Areas (Normal Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
A101	F101 441	South Fork Sub	S Fork Sub- Lees Camp Line 101	230	Triple Trip / Triple Lock Out	NOVA 27
A102	F102 441	South Fork Sub	S Fork Sub - Line 102	156	Triple Trip / Triple Lock Out	NOVA 27
B25	R 0115	2 03 09 07 3708	Beaver / Trask Tie	151	Triple Trip / Triple Lock Out	VWVE
B25	R 0235	2 03 10 12 7406	Sandlake Road	246	Single Trip / Triple Lock Out	MVR
B28	B28 441	2 03 09 29 1231	Beaver Substation	252	Single Trip / Triple Lock Out	VIPER- S
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	105	Single Trip / Single Lock Out	4E
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	106	Single Trip / Single Lock Out	4E
G73	R 0020	1 02 10 35 8302	Miami Riv @ Prueitt's Mill	107	Single Trip / Single Lock Out	4E
G73	R 0034	1 02 10 32 6402	Rockaway - North 3rd	194	Single Trip / Triple Lock Out	NOVA STS

Low Risk Areas (Normal Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
G74	R 0135	1 01 10 21 5511	Garibaldi Boat Docks	168	Triple Trip / Triple Lock Out	NOVA
G74	R 0300	1 01 10 22 5501	Electric Crk Garibaldi	212	Single Trip / Triple Lock Out	NOVA STS
G74	R 0040	1 01 10 20 7502	Pirates Cove	238	Triple Trip / Triple Lock Out	NOVA
G74	G74 441	Garibaldi Sub	Garibaldi Sub - Line 74	239	Triple Trip / Triple Lock Out	NOVA 27
H32	R 0095	2 04 10 12 2102	Hwy 101 Hebo - Beaver tie	125	Triple Trip / Triple Lock Out	VWVE
H32	H32 341	Hebo Sub	Hebo Substation	247	Triple Trip / Triple Lock Out	NOVA 27
M	M532 441	Mohler Sub	Mohler BPA Sub	126	Triple Trip / Triple Lock Out	VWVE
M93	M93 441	Mohler Sub	Mohler Sub - Line 93	236	Triple Trip / Triple Lock Out	NOVA 27
M93	R 0304	1 02 10 03 5301	Wheeler	244	Triple Trip / Triple Lock Out	MVR
M94	M94 341	Mohler Sub	Mohler Sub - Line 94	196	Triple Trip / Triple Lock Out	NOVA 27
N34	R 0143	2 03 10 20 8110	Portable Sub	143	Triple Trip / Triple Lock Out	VWVE
N34	N34 341	Nestucca Sub	Nestucca Sub - Resort Dr	220	Triple Trip / Triple Lock Out	NOVA 27
N34	R 0036	2 04 10 19 5800	Old Woods Rd	248	Single Trip / Triple Lock Out	MVR
N35	R 0072	2 04 10 19 2120	River Ave PC	159	Triple Trip / Triple Lock Out	NOVA
N35	N35 341	Nestucca Sub	Nestucca Sub - Brooten Rd	221	Triple Trip / Triple Lock Out	NOVA 27

Low Risk Areas (Normal Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
N39	N39 341	Nestucca Sub	Nestucca Sub - Neskowin	222	Triple Trip / Triple Lock Out	NOVA 27
N95	R 0215	1 03 10 20 5125	Nehalem Rd Manz - University to Reed	195	Triple Trip / Triple Lock Out	NOVA
N95	A95 341	Nehalem Sub	Nehalem Sub - Line 95	227	Triple Trip / Triple Lock Out	NOVA 27
N96	A96 341	Nehalem Sub	Nehalem Sub - Line 96	228	Triple Trip / Triple Lock Out	NOVA 27
N97	A97 341	Nehalem Sub	Nehalem Sub - Line 97	229	Triple Trip / Triple Lock Out	NOVA 27
S	S00 441	Trask River Sub	Trask River Sub - Bus Tie	232	Triple Trip / Triple Lock Out	NOVA 27
S41	S41 441	Trask River Sub	Trask River Sub - Line 41	234	Triple Trip / Triple Lock Out	NOVA 27
S42	S42 441	Trask River Sub	Trask River Sub - Line 42	235	Triple Trip / Triple Lock Out	NOVA 27
S43	S43 441	Trask River Sub	Trask River Sub - Line 43	233	Triple Trip / Triple Lock Out	NOVA 27
S68	S68 441	Trask River Sub	Trask River Sub - Line 68	231	Triple Trip / Triple Lock Out	NOVA 27
W	W00 441	Wilson Sub	Wilson Substation Bus Tie	208	Triple Trip / Triple Lock Out	NOVA 27
W51	R 0019	2 02 10 04 4300	Whiskey Creek	112	Single Trip / Single Lock Out	4E
W51	R 0019	2 02 10 04 4300	Whiskey Creek	114	Single Trip / Single Lock Out	4E
W51	W51 441	Wilson Sub	Wilson River Sub BX Line 51	166	Triple Trip / Triple Lock Out	NOVA 27
W51	R 0016	2 01 10 31 5500	Oceanside Recloser	213	Single Trip / Single Lock Out	NOVA STS

Low Risk Areas (Normal Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
W51	R 0032	2 01 10 35 4700	Netarts Hwy @ Fraser Rd	216	Triple Trip / Triple Lock Out	NOVA STS
W60	W60 441	Wilson Sub	Wilson River Sub B Line 60	167	Triple Trip / Triple Lock Out	NOVA 27
W61	R 0031	2 01 10 26 2400	Bayocean Rd	76	Single Trip / Single Lock Out	4E
W61	R 0031	2 01 10 26 2400	Bayocean Rd	98	Single Trip / Single Lock Out	4E
W61	W61 441	Wilson Sub	Wilson River Sub F Line 61	175	Triple Trip / Triple Lock Out	NOVA 27
W61	R 0303	2 01 10 25 3503	3rd Street West	240	Single Trip / Triple Lock Out	MVR
W62	W62 441	Wilson Sub	Wilson River Sub Tillamook Lumber Line 62	176	Triple Trip / Triple Lock Out	NOVA 27
W63	R 0022	2 01 09 28 5802	Olsen Rd	155	Triple Trip / Triple Lock Out	NOVA 27
W63	W63 441	Wilson Sub	Wilson River Sub E Line 63	174	Triple Trip / Triple Lock Out	NOVA 27
W63	R 0290	2 01 09 29 7800	Wilson River Loop	211	Single Trip / Triple Lock Out	NOVA STS
W63	R 0301	2 01 09 34 2101	Long Prairie Road	249	Single Trip / Triple Lock Out	MVR
W64	W64 441	Wilson Sub	Wilson River Sub A Line 64	169	Triple Trip / Triple Lock Out	NOVA 27
W65	W65 441	Wilson Sub	Wilson River Sub H Line 65	177	Triple Trip / Triple Lock Out	NOVA 27
W65	R 0295	2 01 10 02 1640	Bay City	215	Triple Trip / Triple Lock Out	NOVA STS
W67	W67 441	Wilson Sub	Wilson River Sub G Line 67	171	Triple Trip / Triple Lock Out	NOVA 27

Low Risk Areas (Normal Reclose)						
Feeder	Facility ID	Station Number	Location	Company #	Operation	Type
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	198	Single Trip / Single Lock Out	TRI-S
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	199	Single Trip / Single Lock Out	TRI-S
W67	R 0285	2 01 10 13 8503	Suppress Rd & Hwy 101	200	Single Trip / Single Lock Out	TRI-S
W68	W68 441	Wilson Sub	Wilson River Sub TU Line 68	173	Triple Trip / Triple Lock Out	NOVA 27
W70	W70 441	Wilson Sub	Wilson River Sub CX Line 70	172	Triple Trip / Triple Lock Out	NOVA 27
	NONE	NONE	THS Football lights	183	Single Trip / Single Lock Out	NR

4.5 Operational Tools and Practices

4.5.1 Work Tools

Advanced Metering Infrastructure (AMI) and Outage Management System (OMS):

Tillamook PUD utilizes both AMI and OMS to view and monitor equipment, identify outage locations, and monitor voltage at the meter level. OMS works in conjunction with AMI meters to consolidate outage events and alert operators to potential system issues.

Supervisory Control and Data Acquisition (SCADA): SCADA is utilized to monitor the Tillamook PUD system and identify equipment operational status.

In the Field: Each Tillamook PUD fleet vehicle is equipped with the appropriate fire suppression equipment given the use of the vehicle. The following table identifies the equipment in each type of TPUD fleet vehicle.

Fleet Vehicle Fire Suppression Equipment	
Fleet Vehicle Type	Fire Suppression Equipment
Operations Pick-up Trucks	Shovel, Fire Extinguisher, Pump Can.
Bucket Truck	Shovel, Fire Extinguisher, Water Container, Chainsaw equipped with a Spark Arrester.
Digger Truck	Shovel, Fire Extinguisher, Water Container, Chainsaw equipped with a Spark Arrester.
Other District Vehicles	Fire Extinguisher.

4.5.2 Work-Based Practices

During fire season inside or within one-eighth of one mile of a forest protection district, Tillamook PUD will comply with the fire watch requirements set forth in ORS 477.665 and OAR 629-043-0030. A fire watch will be on duty during any breaks (up to 3 hours), and for three hours, after the operator's power-driven machinery has been shut down for the day.

Weather conditions and fire levels are monitored by the Tillamook PUD Operations Department daily. Dispatch personnel monitor SCADA, weather, and operations during regular working hours. Emergency dispatchers are available during non-scheduled hours.

Tillamook PUD references and utilizes the ODF Best Management Practices for Forest Operations. During fire season, industrial fire restrictions and closures for NW-1, NW-2, and NW-3 zones are checked through the Oregon Department of Forestry at:

<https://gisapps.odf.oregon.gov/firerestrictions/ifpl.html>

4.5.3 Work-Based Training

Specific Fire Mitigation and Safety: The Tillamook PUD Operations staff receive a fire safety overview annually.

Incident Command System: All Tillamook PUD Staff receive ICS 100 training and participate in tabletop exercises annually.

Training and Seminars: Tillamook PUD staff regularly attend trainings, workshops, and forums related to wildfire mitigation operational practices and leading-edge technologies.

4.5.4 Industrial Fire Protection Level (IFPL) Precautions

IFPL restrictions are based on climatic conditions such as temperatures, wind speed, humidity, and the possibility of lightning. Local topography and fuel (vegetation) are also factors. The Oregon Department of Forestry determines the IFPL in each of the fire protection zones.

Each precaution level specifies those activities that are permitted and prohibited within the specified zones. Precaution levels are labeled as follows:

- IFPL 1- Fire Season
- IFPL 2- Limited Shutdown
- IFPL 3- Restricted Shutdown
- IFPL 4- Complete Shutdown

Tillamook PUD follows the stipulations and guidelines provided by the Oregon Department of Forestry as seen in the *Industrial Fire Precaution Levels (IFPLs) for Oregon Department of Forestry Protection West of the Cascades* and *Fire Season Requirements* documents located on the Oregon Department of Forestry website at:

<https://www.oregon.gov/odf/fire/Documents/industrial-fire-precaution-levels.pdf> and <https://www.oregon.gov/odf/fire/Documents/fire-season-requirements-for-industrial-operations.pdf>

4.5.5 Industry Connections & Interagency Collaboration

- Tillamook PUD collaborates with a variety of state and local entities on the planning and coordination of strategies to be implemented in the event of a disaster. These entities include the Committee for Tillamook Agencies and Businesses group, Tillamook County Office of Emergency Management (through the Tillamook County Sheriff's Office), the Tillamook 911 Office, local fire departments, and the Oregon Department of Forestry.
- Tillamook PUD works in partnership with the Bonneville Power Administration (BPA) and Pacific Power to discuss and prepare for situations related to high-fire risk.
- Tillamook PUD works with the ODF on ROW management through the Wildfire Protection Plan. This plan is managed by ODF and assists in monitoring ROW tree removal and fuel reduction on ODF property.
- Tillamook PUD is a member/partner with several mutual assistance agreement groups. These include the following:
 - Western Regional Mutual Aid Group through the Western Energy Institute.
 - Oregon Rural Electric Cooperative Association.

- American Public Power Association Mutual Assistance Working Group (MAWG).
- BPA Reciprocal Operating and Emergency Repair Agreement.
- Tillamook PUD works in cooperation with a variety of local and regional entities. Contact information for these entities is as follows:

Oregon Department of Forestry
503-842-2545

Local Fire Departments

Central County

Tillamook Fire Department - 503-842-7587

Netarts/Oceanside Fire Rescue – 503-842-5900

South County

Nestucca Rural Fire District – 503-392-3313

North Tillamook County

Bay City Fire Department – 377-0233

Garibaldi Fire Department - 503-322-3635

Rockaway Beach Fire Department – 503-374-1752

Nehalem Fire Department – 503-368-7590

Neighboring Utilities

Portland General Electric – 800-542-8818

Pacific Power – 888-221-7070

Central Lincoln – 877-265-3211

BPA Monroe Switch Yard – 509-465-1826

5) RESPONSE STRATEGIES

RESPONSE STRATEGIES

5.1 Situational Awareness

5.1.1 Weather Monitoring

Operations staff monitor current and ten-day weather forecasts daily. Tillamook PUD Incident Command staff subscribe to Nixle red flag warning alerts.

5.1.2 GIS Tools

Tillamook PUD staff access real-time weather conditions in geographic locations via the Tillamook PUD intranet.

5.2 Operational Response

5.2.1 Operating Procedures During Red Flag Days

Tillamook PUD adjusts normal operating procedures based on the following:

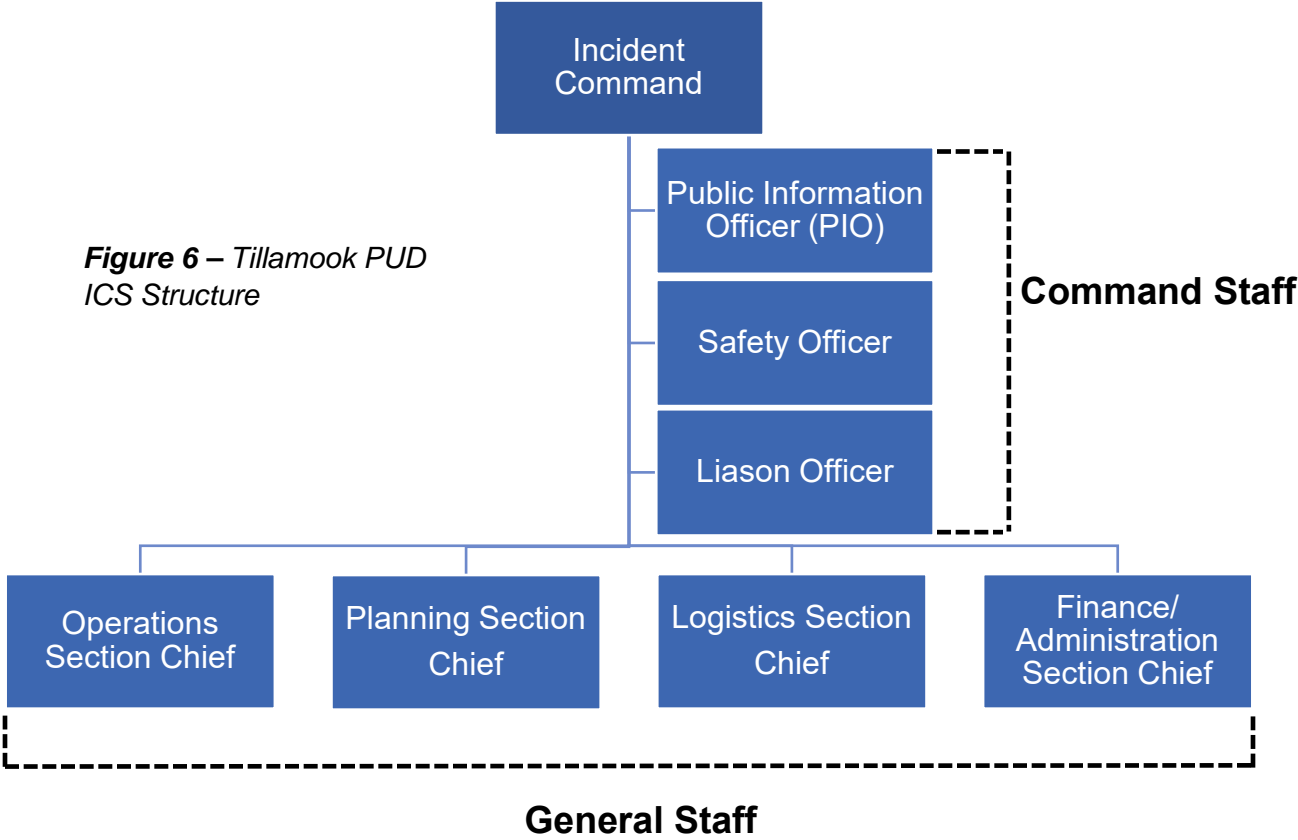
Key Response Strategies	
Status	Response
Fire Watch	<ul style="list-style-type: none">• Monitor forecasted conditions.• Raise situational awareness.• Monitor and adhere to IFPL.
Red Flag Warning Days	<ul style="list-style-type: none">• Evaluate the situation for ICS activation and PSPS.• Assess the application of relay sensitivity settings.• Limit non-critical maintenance work.• Monitor and adhere to IFPL.
Extreme Risk Days	<ul style="list-style-type: none">• Evaluate the situation for ICS activation and PSPS.• Activate relay sensitivity settings.• Monitor and adhere to IFPL.• Patrol lines 100 percent before re-energizing.• Cease non-emergency maintenance work.• Communicate with local emergency management organizations.
Fire Event	<ul style="list-style-type: none">• Activate ICS.• Coordinate de-energizing/re-energizing sections of line with local emergency management.• Implement PSPS as necessary.• Make repairs and assess before re-energizing.

5.2.2 Internal Communication Regarding Fire Level Status

Current IFPL and forecasted conditions are monitored by the Operations Manager, Operations Supervisor, and Dispatcher daily. Updates on status levels, safety precautions, and procedures are communicated daily, prior to work beginning, in Foremen meetings, and crew tailboard meetings.

5.2.3 Incident Command System (ICS)

The Incident Command System (ICS) is activated in response to incidents such as natural disasters and during large-scale outage situations. When ICS is activated at Tillamook PUD, designated PUD staff fill the Command and General Staff roles as seen in Figure 6 below.



5.3.4 Public Safety Power Shutoff (PSPS)

A PSPS preemptively de-energizes power lines during high wind events combined with hot and dry weather conditions. Tillamook PUD utilizes PSPS as a last response in mitigation strategies during red flag warnings or extreme conditions.

The necessity, location, duration, and timeline of a PSPS activation will be determined by the Incident Commander and may be in consultation with interagency partners including, but not limited to, the Oregon Department of Forestry, Tillamook Office of Emergency Management, and local fire departments. The Incident Commander will evaluate conditions and will determine when it is safe for re-energization. Prior to re-energizing the system, full line patrols of the PSPS area will be performed by Operations field staff.

When considering a PSPS, Tillamook PUD examines external risks and potential consequences of a PSPS, including:

- Potential loss of water supply to fight wildfires due to loss of production wells and pumping facilities.
- Negative impacts to emergency response and public safety due to disruptions to the internet and mobile phone service during extended power outages.
- Loss of key community infrastructure and operational efficiency that occurs during power outages.
- Medical emergencies for members of the community requiring powered medical equipment or refrigerated medication. Additionally, the lack of air conditioning can negatively impact medically vulnerable populations.
- Negative impacts on medical facilities.
- Traffic congestion resulting from the public evacuation in de-energized areas can lengthen response times for emergency responders.
- Negative economic impacts from local businesses forced to close during an outage.
- The inability to open garage doors or motorized gates during a wildfire event can lead to injuries and fatalities.

The risks and potential consequences of initiating a PSPS are significant and extremely complex. Based on the above considerations, Tillamook PUD reserves the option of implementing a PSPS when conditions dictate. While Tillamook PUD believes the risks of implementing a PSPS far outweigh the chances of its electric overhead distribution system igniting a catastrophic wildfire, the PSPS provides a last resort tool and another option in a crisis.

On a case-by-case basis, Tillamook PUD will consider de-energizing a portion of its system in response to a known public safety issue or a request from an outside emergency management/response agency.

The decision to implement a PSPS is based on multiple triggers accompanied with the unique understanding of the Tillamook PUD system. No single element is determinative. Potential factors include:

- Imminent fire danger
- Critically dry vegetation that could serve as fuel for a wildfire
- Low humidity levels
- Red flag warnings
- Temperatures over 100°F

- Winds projected beyond 40 mph in high-risk areas
- Mandatory fire orders in effect
- On-the-ground observations from Tillamook PUD or other agency field staff
- Active wildfire in the service area

- Local topography

Tillamook PUD will monitor the evolution of PSPS implementation by other Oregon electric utilities to continue to refine its evaluation criteria and processes.

Communications

Internal and external communications are of the utmost importance before, during, and following a PSPS activation. The subsequent process flow charts depict the typical communication strategies executed should a PSPS activation need to occur.

Internal Communications Prior, During and Following a PSPS Activation

Prior

- Incident Command staff will meet to discuss PSPS plan.
- Incident Commander will approve the PSPS plan and communications plan.
- Incident Command staff will follow the chain of command to communicate the PSPS plan.
- An all staff email will be sent to notify staff of the formal PSPS plan.
- Incident Command staff will be available to answer internal inquiries.

During

- The Operations staff will provide updates to the Incident Commander as available/necessary.
- PIO will distribute updates and information to staff via email as necessary.
- Incident Command staff will be available for inquiries that arise within each section.

Following

- The Operations staff will inform the Incident Commander when the PSPS will be concluded.
- PIO will distribute concluding information to Tillamook PUD staff via email.

External Communications Prior, During and Following a PSPS Activation

Prior

- Incident Commander will approve the PSPS and communication plan.
- Incident Command staff will communicate/coordinate PSPS plans with Interagency Partners.
- Incident Command Staff will provide date(s), location(s), duration, and reasoning for PSPS to PIO.
- PIO will inform Interagency Partners of the PSPS plan that have not been notified already by the Incident Commander.
- The Liaison Officer will notify any Key Accounts Customers affected.
- PIO will distribute PSPS message to the public through Nixle, Tillamook PUD social media, print and digital media, radio, and the Tillamook PUD website.



During

- PIO and Communication Support staff will monitor social/digital media outlets and respond to inquiries.
- PIO will remain in close contact with Interagency Partners and provide updates as available.
- The Liaison Officer will remain in close contact with Key Account Customers and provide updates as available.
- PIO will provide additional updates and information, as approved by the Incident Commander, to the public as available and/or necessary.



Following

- PIO will communicate PSPS has ended via the same channels information was initially distributed externally.
- PIO/Operations staff will follow-up with Interagency Partners.
- The Liaison Officer will follow-up with Key Account Customers.

6) PLAN MAINTENANCE & IMPLEMENTATION

6.1 Plan Maintenance & Implementation

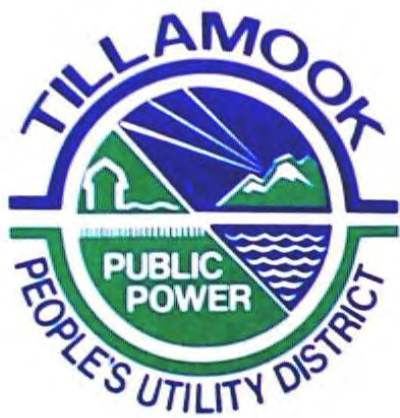
The Wildfire Mitigation Plan will follow regulations as outlined by state and local jurisdictions and will be reviewed annually and filed with the Oregon Public Utility Commission no later than the 15th of December each year.

The Wildfire Mitigation Plan is available on the Tillamook PUD website for members of the public to access and review. Before, during, and after wildfire season Tillamook PUD communicates information regarding the Wildfire Mitigation Plan through various media channels including print, social and digital.

The Wildfire Mitigation Plan is approved by the General Manager and adopted by the Board of Directors. The Incident Command Staff is responsible for implementing the Wildfire Mitigation Plan.

Appendix C
Avian Protection Plan
and Application of Hawk-eye Bird
Flight Diverters

AVIAN PROTECTION PLAN



Tillamook
People's
Utility
District

**1115 Pacific Avenue
Tillamook, Oregon 97141**

Office: 503.842.2535

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Toll Free: 1.800.422.2535

April 2023

Tillamook People's Utility District Avian Protection Plan

This Avian Protection Plan will guide Tillamook People's Utility District through the various conditions which may be encountered and the application of mitigation strategies to minimize adverse impacts related to avian interaction.

This plan was updated in April 2023 to align with the 2022 USFWS permit requirements and to incorporate key recommendations from the Oregon Watershed Enhancement Board. The Key Resources contact information at the end of this document was also verified and updated.

I certify that this Aviation Protection Plan was developed to meet the current needs of Tillamook People's Utility District and in accordance with industry standards. This plan is a living plan and will require modification as needed and will be updated every five years or as needed to address current permitting requirements and industry standards.

Signed by:

TILLAMOOK PEOPLE'S UTILITY DISTRICT

BY:  _____

KC Fagen,
Engineering Manager

DATE: April 25, 2023 _____

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Appendix A	USFWS Avian Permit
Appendix B	ODFW Scientific Take Permit
Appendix C	Avian-Friendly Construction Standards
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Introduction

Tillamook County is located in the northwest corner of Oregon and has a population of 27,129 as of 2021 according to the Census Data ACS 2021 5-year report. Tillamook County covers 1,225 square miles. The major physical features of the County consist of the rocky and irregular coast line that forms the county's western boundary, stretches of coastal low lands, and heavily timbered interior parts. Figure 1-1 shows Tillamook Peoples Utility District's (District) service area.

Tillamook County voters approved Oregon's first People's Utility District on July 23, 1933; however, the first customer was not connected until October of 1946. During the late 1940s and early 1950s, parts of Tillamook County had two utilities, Mountain States and the District. Mountain States merged with Pacific Power and Light (PP&L) in 1954 and on May 22, 1961, the District purchased PP&L at which time the people of Wheeler and Nehalem opted to join the District. The District has its headquarters in Tillamook, Oregon. It serves the needs of most of Tillamook County and minor parts of Clatsop and Yamhill counties.

The District is dedicated to working with the various agencies to develop a plan to reduce bird mortalities on its overhead lines. Although the District has had a limited number of bird contacts, any contact with an overhead line reduces the reliability of that service area. The District's primary goal is to provide safe and reliable power to all of its customers. Reducing the number of bird contacts will help to improve the reliability in this area.

In the 1970s, an investigation of reported shooting and poisonings of eagles in Wyoming and other western states led to evidence that eagles were also being electrocuted on power lines. Since then, the utility industry, wildlife resource agencies, conservation groups, and manufacturers of avian protection products have worked together to understand the causes of avian electrocutions and to develop ways of preventing them. The publication, *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* summarizes the history and achievements of this work (SPAP).

Over the last two decades, biologists have also monitored bird movements near power lines in order to assess the effects of disturbance and collision mortality on bird populations. The conclusions of these studies, as well as suggested practices are documented in several industry standard publications and were reviewed as part of updating this document (See the bibliography for the list of publications consulted in developing and updating the APP).

Purpose

The District Avian Protection Plan (APP) was developed to expand and formalize the District's existing avian protection program in accordance with the industry guidelines, including: a joint guidance document prepared by the Edison Electric Institute's and the U.S. Fish and Wildlife Service (USFWS) Avian Power Line Interaction Committee (APLIC), comments from the Oregon Department of Fish and

Wildlife (ODFW), and comments from the Oregon Watershed Enhancement Board (OWEB). The industry guidelines, along with related documents (See the



bibliography) are considered the most up-to-date and comprehensive guidance tools to reduce the potential for avian electrocution and collision mortality.

The industry guidelines define an APP as “a utility-specific document that delineates a program designed to reduce the operational and avian risks that result from avian interactions with electric utility facilities”. This document incorporates the principals of an APP as outlined in the industry guidelines, the requirements from both State and Federal permits, and input from the ODFW, USFWS, and OWEB; and establishes a process for monitoring and evaluation, reporting and data collection, siting and design considerations, and implementation of remedial actions.

District Avian Protection Statement

Bird interactions with power lines may cause bird injuries and mortalities (which may result in outages), violation of bird protection laws, and grass and forest fires. The District management and employees are committed to reducing the detrimental effects of bird interactions with power lines.

This document is intended to ensure compliance with legal requirements while improving distribution system reliability. To fulfill this commitment, the District developed this APP to provide guidance in reducing avian mortalities due to collisions with, and electrocutions from, the District’s facilities. The District has and will:

1. Comply with Federal, State, and local laws.
2. Implement and comply with its comprehensive APP.
3. Document bird mortalities, problem poles and lines, and problem nests. Use data driven analytics to help identify areas of concern and framing types that are more susceptible to avian incidents. This includes areas and construction frame types with multiple incidents, and tracking of incidences by area.
4. Collect the necessary data for each avian incident in compliance with USFW and ODFW permits.
5. Provide information, resources and training to improve its employees’ knowledge and awareness of the APP.
6. New construction will use avian-friendly framing approved by the United States Department of Agriculture Rural Utility Services (RUS) in areas known to have a high level of avian activities and locations that involve collisions or mortalities. In areas outside of high-risk terrain, avian-friendly framing shall be evaluated for use on both rebuild and new construction using historic data and operating experience.
7. New construction will use covered jumper conductor at lateral take-off poles and equipment connections below the cutouts, such as transformers, reclosers, and capacitor bank installations.
8. Continue to explore bushing insulator covers on transformers, capacitors, cable terminations, and other devices to protect the connection between the covered jumper wire and the bushing. Recent devices did not hold up to our harsh environment and in some cases had to be removed as they were causing nuisance outages. Review new products annually (during reporting period) and

determining if new products warrant setting up a “test” scenario consisting of installing the new products in worst case locations. Document these reviews and save documentation in the APP folder.

9. Continually review methods to reduce migratory bird collisions and electrocutions and improved nest and egg handling techniques to reduce avian incidents. This should be done annually during the reporting period and documented.
10. Proactively conduct corrective actions on high-risk poles and areas that result in improved migratory bird protection for each incident and document corrective actions based on data analytics. High-risk poles and areas have been identified from past incidents and in discussion with local fish and wildlife biologist. To date, all areas identified with high avian activities have been retrofitted with covers or rebuilt with increased spacing.
11. Retrofit poles and conductors for 3 spans of the incident in all direction within one year. This includes an assessment of the surrounding area for similar avian incidents within a 1,000-foot radius. If similar incidents have occurred within the 1,000-foot radius, then retrofitting will extend to 5 to 6 spans (approximately ¼ of a mile). Monitor the effectiveness of the 1,000-foot radius to determine if the area needs to be adjusted.
12. Monitor the effectiveness of the corrective actions taken and improve techniques or equipment based on that experience by updating the tracking system and reviewing on an annual basis, specifically at the end of the year when updating the Federal reporting documents.
13. Report to the USFWS Office of Law Enforcement (OLE), Migratory Bird Division, and other agencies, as required, any electrocutions or injuries of eagles or threatened or endangered species (TES) immediately, but within 48 hours or the next business day after learning of the occurrence.
14. Seek input from USFWS, OWEB, and/or ODFW representatives as deemed necessary, or at least every five years, to review the District’s APP.
15. Keep records of avian incidents and save in APP folder.

Training

Successful implementation of this APP requires a thorough understanding of the issues and corresponding protocols. To accomplish this, the District has developed a training program focusing on staff with direct and indirect implementation responsibilities including managers, supervisors, field crews, engineers, and dispatch staff. The District has regular monthly training meetings for all personnel. These meetings will be used to review the issues, procedures and protocols included in this APP. These include:

- Identification of bird-related issues – electrocution and collision mechanisms
- Discussion of state and federal regulations that protect birds, legal implications, and the need for compliance

- Construction and design standards and retrofitting standards designed to reduce avian mortality and collisions
- Protocols of plan implementation including assessing problems, proactive approaches, and recording/reporting data
- Protocols for dead or injured birds, specifically for eagles and TES birds
- Responsibilities of staff to implement the APP
- District iPADs have Federal and State permits and a document that identifies eagles and TES (both Federally and State listed).

Permit Compliance

The District receives a Special Purpose Federal Fish and Wildlife Permit issued by the USFWS, which is renewed every four years. A copy of this permit is included in Appendix A of this APP. In addition, the State of Oregon issues an annual Take Permit, included in Appendix B, with specific conditions contained within the permit and outlined below. The District shall maintain active permits as a part of this APP and District staff shall have a copy of the USFWS and ODFW permits on District computers. In addition, the District has a list of eagles and threatened and endangered species (both Federally and State listed) on company computers for quick and accurate identification of avian species.

This permit provides the following conditions and authorizations to the District:

- **Possession and transport**
 1. Migratory Birds (except Eagles and TES): Collect, transport and temporarily possess carcasses of migratory birds for immediate burial at the site or for storage.
 2. For Bald and Golden Eagles (Eagles) and listed Threatened or Endangered Species (TES), you must call a U.S. Fish and Wildlife Services Office of Law Enforcement (OLE) (503-682-6131) for instructions and approval BEFORE collecting or moving. You must receive instructions and approval BEFORE collecting or moving the remains, unless you are working under a specific alternative protocol established by you and OLE. It may be necessary to preserve the remains or parts onsite until an agent or other Service or State representative arrives to collect them.
- **Migratory Bird Nest Take**
 1. Eagles or TES: Take of nests, whether active or inactive, is not authorized for these species. Additional federal permit(s) may be required.
 2. Active Nest (nests containing chicks or viable eggs excluding eagle or TES): In emergency situations you are authorized to take (relocate or destroy) active migratory bird nests, including viable eggs or chicks, found on utility structures if:
 - (i) the safety of the migratory birds, nests, or eggs is at risk, or
 - (ii) the migratory birds, nests, or eggs pose a threat of serious bodily injury or a risk to human life, including a threat of fire hazard, mechanical failure, or

power outage. You may not use this authority to destroy or relocate nests for situations in which migratory birds are merely causing a nuisance or inconvenience.

a. Active Nest Relocation

Relocation of nests is preferred if the circumstances or conditions warrant. If nests are relocated, they must be relocated to a site and structure (natural or artificial) appropriate to the species' requirements. You must monitor relocated nests sufficient to determine if adult birds have returned or if the nest is abandoned. If adult birds have abandoned the nest, eggs/chicks may be transported to a federally permitted rehabilitator.

b. Active Nest Destruction

If circumstances or conditions are not appropriate for relocation, you may destroy the nest. Viable eggs and/or chicks may be destroyed or transported to a federally permitted rehabilitator for care. See Section Nest Management on page 11 for detailed instructions.

c. Reporting of Relocation or Destruction of Active Nest

If you relocate or destroy an active migratory bird nest, you must report it to the appropriate Regional Migratory Bird Permit Office (MBPO) describing the emergency situation, circumstances, and action proposed/taken. When practicable, notification should be prior to taking action but must be no later than 72 hours after relocation/destruction. The office issuing this permit shall be notified within 72 hours of active nest relocation, giving the location and details on relocation (i.e., nest moved to platform built adjacent to power pole.)

Additional coordination is required with ODFW.

3. Inactive Nests (excluding Eagle or TES):

Authorized to relocate inactive migratory bird nests to avoid or minimize the need to take active migratory bird nests. Inactive nests are nests without viable eggs or chicks.

a. Inactive Nest Relocation

For avoidance and minimization purposes, inactive migratory bird nests or nest material may be relocated to a site and structure (natural or artificial) appropriate to the species' requirements.

b. Inactive Nest Destruction

Inactive nest destruction does not need to be reported under this permit. Inactive migratory bird nests maybe destroyed without a federal permit under the Migratory Bird Permit Memorandum for Destruction and Relocation of Migratory Bird Nest Contents (June 14, 2018). Nest material may be destroyed or scattered and left on site. You may not possess the nest without additional authorizations.

• **Data Collection**

For the remains of every bird collected, all required data listed below must be recorded prior to disposal or storage. Stored remains must be bagged and labeled with your permit number and a unique ID number. See H(4) of the USFWS permit for reporting options.

1. Species (common name if known; if unknown, species group (e.g. gull, raptor) or “unknown”)
2. Condition (e.g. injured, remains, part(s), bone(s))
3. Disposition (e.g. buried, incinerated, collected and stored, OLE)
4. Discovery Date and, if different, Collection Date
5. Specific Location (GPS coordinates if known; otherwise, nearest structure ID number)
6. State records shall be maintained at Tillamook People’s Utility District, 1115 Pacific Avenue, Tillamook, OR.

- **Injured/orphaned birds**

If you find injured or orphaned migratory birds, including eagles and TES, you should immediately contact a federally permitted migratory bird rehabilitator or a licensed veterinarian and follow their instructions for transport, care, and/or disposition of birds.

- **Reporting**

Eagles and TES incidents must be immediately reported, but no later than 48 hours or the next business day. A written report must be submitted within 7 days from the date of discovery and collection.

Significant mortality events involving an unusually high numbers of birds or unusual species groups must be reported to PermitsR1MB@fws.gov immediately, but not later than 48 hours or the next business day.

The annual ODFW scientific taking report is to be recorded using ODFW’s standard report form due by January 30 for the previous year. Renewal of the scientific taking permit will not occur until the previous year’s scientific taking report has been received by ODFW.

Annual reports for USFWS are to be submitted by January 31 for the previous year. Once the report is filed, any stored bird carcasses will be buried in the Tillamook PUD avian burial site located next to the storage yard.

Banded Birds (remains collected and injured birds) must be reported to the U.S. Geological Survey Bird Banding Laboratory at <http://www.reportband.gov>. Information provided must include, as accurately as possible, species of bird, band number, date recovered, recovery location, and name and contact information of the person who recovered the remains or bird.

Construction Design Standards

There are two types of construction to consider, new construction and retrofitting existing structures.

New Construction

When new lines are being constructed in areas of known avian interaction, the two items to consider are electrocutions and collisions with a line. All new construction must meet National Electric Safety Code (NESC) and Rural Utility Service (RUS) requirements. Avian-friendly construction, which provides a

separation of 60 inches between energized conductors and grounded hardware, and bird diverters have been shown to reduce the number of electrocutions on and collisions with overhead lines. Where this separation is not possible, a conductor cover will be installed. Industry evidence has shown that perch style diverters are not as successful as covering on congested poles (poles with lateral line and or equipment). The avian-friendly construction standards will include the use of covered jumper wires at locations such as transformer banks, corner and double dead-end structures, risers, capacitor banks, and voltage regulators.

Another consideration for new construction is bird collisions with the power lines. Line placement, orientation, and configuration can potentially affect collisions, and should be considered during pre-construction planning. The following factors are important considerations in line placement:

Proximity - In local flights, the proximity of power lines to locations where birds are landing and taking off is critical. Brown et al. (1984, 1987) found that no Sandhill Crane or waterfowl collisions occurred where distances from power lines to birds use areas exceeded one mile.

Vegetation - Vegetation near power lines can sometimes minimize the probability of collision. For example, lines that are at or below the height of nearby trees rarely present a problem because small tree-dwelling birds have greater maneuverability and large birds will gain altitude to clear the highly-visible tree line, consequently avoiding the powerline.

Topography - Topographical features affect local and migratory movement of birds. Features such as mountain passes, river valleys, and shorelines that are traditional flight corridors should be considered when planning powerline routes to avoid primary flight paths (Colson and Yeoman 1978, Faanes 1987). Topographical features can also influence the visibility of powerline in local situations; this can be used to the advantage during the route planning phase of power line construction.

The topography of Tillamook County, which consists of wooded valleys and canyons as well as the coastal regions, does not allow many alternatives to the line routes. However, these wooded areas do aid in reducing the number of collisions due to their proximity to the trees. Much of the line routing will be dictated by the topography and or local conditions. For example, a line extending up one of the canyons will be located near the road to avoid having to clear cut a right-of-way and also to maintain acceptable distance from the river which a road is most likely paralleling.

Consideration must also be given to flooding issues when locating lines on the valley floor around Tillamook. These lines also have a higher probability of having line collisions. In general, these lines will be located in the road right-of-way, and could possibly have a potential of bird collisions due to the fact that these lines may be located next to feeding areas. In areas identified as high-risk area (see Section Risk Assessment Methodology, page 18), the addition of aerial balls or bird diverters to the line will be used to help reduce line collisions. However, a neighboring utility, which used the bird diverters, had issues with them corroding due to the corrosive nature of the coastal climate. Aerial balls present loading issues that need to be taken

into account as part of the design of the line. The District will monitor areas through the use of outage reports to determine if line collisions have occurred in areas where a new line is being constructed. Appropriate line construction will be utilized in these areas.

Construction Retrofitting

Retrofitting of the existing facilities will be required when electrocutions are noted at specific structures, or line collisions have happened in a certain area. The type of retrofitting will be dependent upon the type of incident that has occurred. If a phase-to-phase or phase-to-ground contact has occurred, then an increase in phase separation will be needed or a cover installed to prevent contact between phases or phase to ground. An electrocution occurring where jumper wires are used would require the existing jumper wires to be replaced with covered wires. For mid span collisions, bird deflectors will be installed to increase the visibility of the wires.

For the District, the most common cause of electrocutions have been crows and gulls on service transformers. The number of electrocutions has decreased since the District has started using higher rated (35 kV) insulated bushings on equipment and the insulators used for framing construction, along with the use of covered jumper wire. The District has tested the use of several different types of bushing covers for added protection on transformers, but to date has not been able to find one that will stay on the transformers during the coastal storms. The covers have also had tracking (electric arcing across the surface) as a result of the salt environment, which cause them to burn up. The District will continue to evaluate products to find a protective bushing cover that will withstand both the harsh saltwater environment as well as the high winds.

The bare copper wire jumpers will be replaced with covered wire in areas that are identified as a problem for bird electrocutions. Other installations such as fuse cutouts, jumpers to transformers, risers, or at dead ends will also be changed to covered wire as these areas are identified.

In the case of line collisions, the line will be retrofitted with aerial balls or bird diverters as noted in the new construction section. Consideration will be given to relocating lines for repeat avian incidents.

A review of the area will be conducted and the District will determine if similar conditions exist on neighboring structures or spans within 1,000 feet (about 5 spans) of the area. These similar structures will also be retrofitted to a more avian-friendly design. Any retrofitting will be completed within a year. If other avian incidences have occurred within a radius of 1,000 feet, then similar structures will be reviewed within the 1,300 feet of the incident and any retrofitting will be completed within a year.

Nest Management

All active nests (eggs or young chicks) are protected by the Migratory Bird Treaty Act. Raptors, and occasionally other species, benefit from the presence of power lines by utilizing distribution poles and transmission structures for nesting. Although

electrocution of birds that nest on power lines is infrequent, bird nests can cause operational problems. Removal of a nest generally does not solve the problem because most species are site tenacious and rebuild shortly after nest material is removed. Where nest building is reoccurring, mitigation techniques will be deployed to deter any future nest building. There are also regulatory and public relations problems with nest removal. Furthermore, the District has realized public relations benefits by providing safe nesting locations for the species.

The District has received a permit issued by the USFWS allowing crews to manage an active nest for all species except for Bald and Golden Eagles (eagles) and threatened or endangered species (TES). In the case of imminent danger, (which should be considered extremely rare), the District crews may take immediate appropriate action (including trimming of nesting materials, moving conductors, or nest removal). The dispatcher (Operations Supervisor) must receive permission from the appropriate authorities prior to any action, except the case of imminent danger.

Except for eagles and federally listed TES, in emergency situations the USFWS permit authorizes to relocate active migratory bird nests, including eggs or nestlings, found on the utility structures when;

- (1) the safety of the migratory birds, nests or eggs are at risk, or
- (2) the migratory birds, nests, or eggs pose a threat of serious bodily injury or a risk to human life, including a threat of fire hazard, mechanical failure or power outage.

You may not use this authority for situations in which migratory birds are merely causing a nuisance or inconvenience. Nests must be relocated to a site and structure (natural or artificial) appropriate to the species' requirements. (If extenuating circumstances warrant, destruction of an active nest may be authorized by contacting your permit issuing office prior to destruction.) To conduct activities involving nests of eagles or federally listed TES, you must obtain additional appropriate permit(s).

The procedures included here apply only to problem nests, i.e. emergency or immediate situations. Nests not interfering with power operations should be left in place. If a problem with the specific nest is anticipated in the future, permit requirements may be avoided by taking appropriate action during the non-breeding season before the nest is active. Breeding season and when nests may be active for most raptors fall between February 1 and August 31. However, an active nest is only when the nest is occupied or eggs or young are present.

If there are any questions whether a problem nest is active or inactive, contact the Operations Supervisor. The Operations Supervisor will contact the appropriate authorities to obtain instructions. All identified problem nests and any actions taken should be reported using the outage report form.

The following items should be completed when a problem nest is encountered:

1. Determine if nest is eagle/TES
2. If non-eagle/TES, determine if nest is active. If active, then
 - o Call the Dispatch, who will contact the Operations Supervisor.

- If imminent danger exists, cover/move conductors if possible and/or trim nest material if covering/moving of conductors can't resolve the immediate danger.
- Operations Supervisor will work with USFWS and/or ODFW to determine relocation/removal procedure.

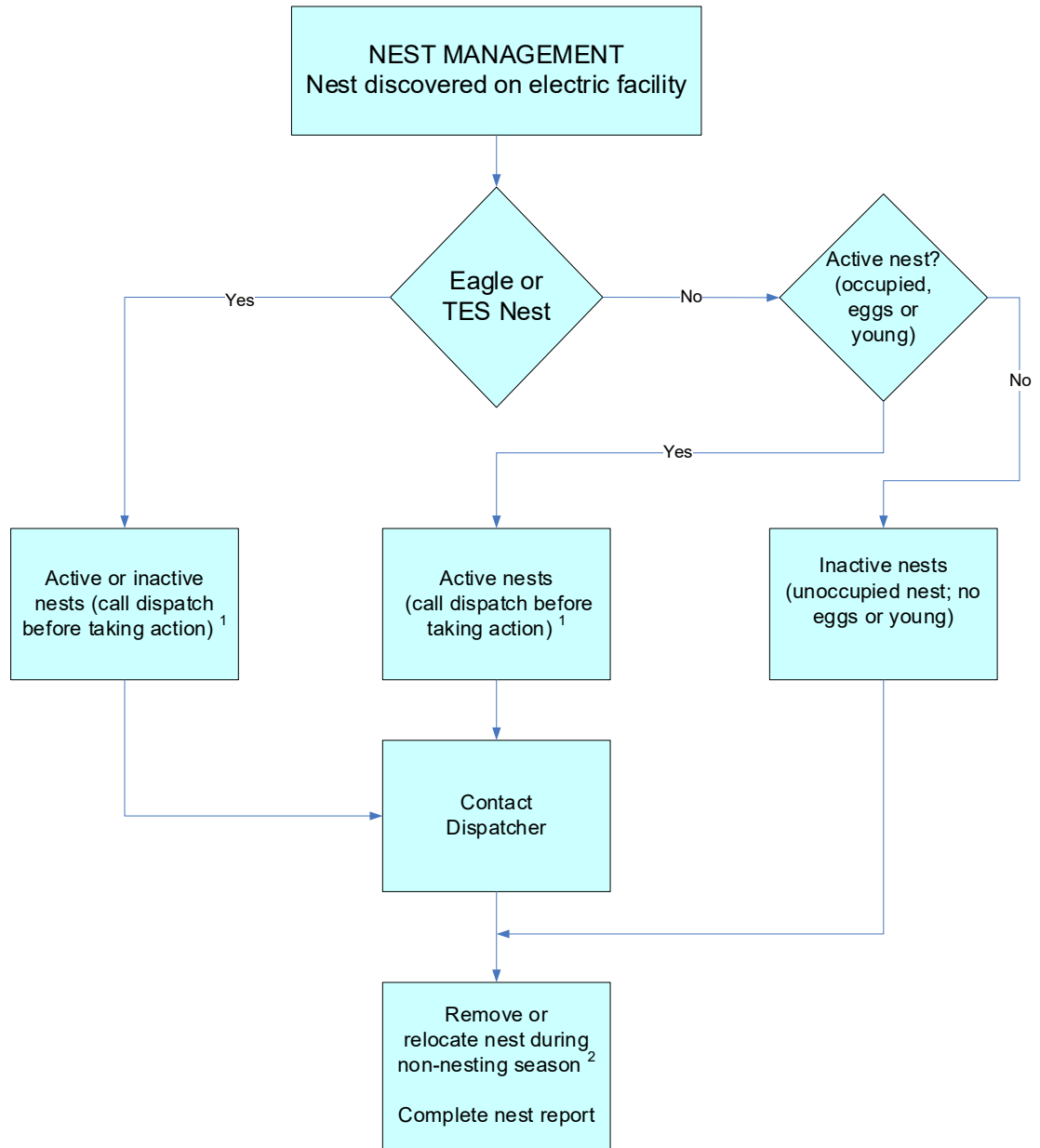
Nests must be relocated to a site and structure (natural or artificial) appropriate to the species' requirements. (If extenuating circumstances warrant, destruction of an active nest may be authorized by contacting your permit issuing office prior to destruction.)

If the situation can't wait for collaboration with USFW or ODFW,

- Document the event.
 - Notify the appropriate Regional Migratory Bird Permit Office (MBPO) describing the emergency, circumstances, and action proposed/taken within 72 hours of incident.
 - Submit information on USFWS annual report.
3. In the case of eagle/TES species requiring nest relocation, contact the state and federal personnel listed in the contact list. No action is to be taken by the PUD until directed by USFW or ODFW. Additional permits are required prior to any activity performed. Once appropriate permissions are granted:
- Document and coordinate transfer of nest.

The following flowcharts show the actions to be taken by District field crews when a problem nest is encountered.

Avian Nesting Management Flow Chart



¹ If imminent danger exists, conduct necessary action immediately.

² Dispatch will contact U.S. Fish and Wildlife Service or Oregon Department of Fish and Wildlife, North Coast District Office to request necessary permit(s) for active nest or eagle nest removal/relocation.

Fatality and Injured Bird Protocols

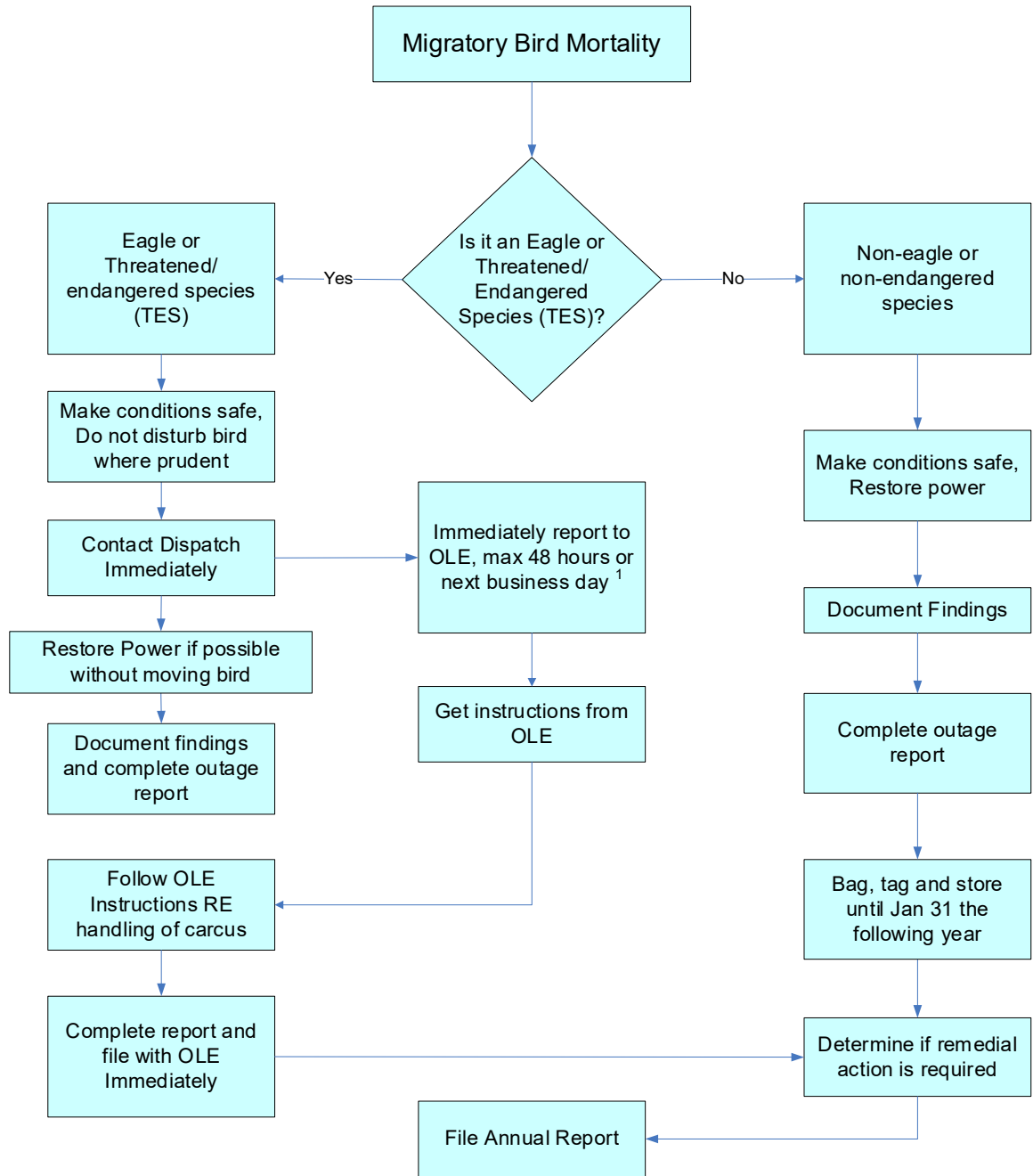
When a bird fatality or injured bird is encountered, the following actions should be taken:

1. If a non-eagle/TES bird is taken by electrocution or collision, document the event using an outage report, which will be logged in the USFWS annual report.
 - Collect the appropriate data as outlined under Data Collection in the Permit Compliance section.
 - Bury the bird on-site or in the avian graveyard. If instructed to do so the bird can be bagged, labeled and stored in a freezer. Once the USFWS annual report is submitted, the birds can be disposed of (buried at the avian grave site out at the pole yard).

Labeling includes unique specimen identification number, collector's name and must be done PRIOR to transportation. A copy of the data must be included in the bag.
 - Submit information on USFWS and ODFW annual reports.
2. In the case of an eagle/TES bird taken by electrocution or collision, call the US Fish and Wildlife Office of Law Enforcement (OLE) immediately at 503-682-6131 or within 48 hours.
 - Do not move the bird until getting instructions from the OLE or unless circumstances warrant.
 - Collect the appropriate data as outlined under Data Collection in the Permit Compliance section.
 - Follow instruction from OLE.
 - Submit report within 48 hours and on the USFWS & ODFW annual reports.
3. In the event migratory birds, including eagles and federally listed TES, are injured or orphaned, you must immediately contact a federally permitted migratory bird rehabilitator or a licensed veterinarian for instructions. For eagles and TES, contact USFWS OLE within 48 hours or the Migratory Bird Office if OLE not reachable.

The following flowcharts shows the actions that should be taken if a dead or injured bird is encountered. Contact numbers are listed in the Key Resources section.

Avian Mortality Flow Chart



¹ Dispatch will contact U.S. Fish and Wildlife Office of Law Enforcement (OLE). Injured birds should be reported to Dispatch, who will contact Oregon Department of Fish and Wildlife North Coast District Office or Wildlife Center of the North Coast.

The following steps should be taken for disposal of a non-eagle/TES bird:

1. Make area safe.
2. Document event, see Data Collection in the Permit Compliance section.
3. Pick up the birds using disposable gloves.
4. Bury on site.

If Storage is warranted (as directed by USFWS or ODFW, or if uncertain if the bird is an eagle or TES):

- a. Label and store bird in freezer.

Labeling includes unique specimen identification number, collectors name and must be done PRIOR to transportation. A copy of the data must be included in the bag.

- b. After January 31 of the following year and submittal of annual report, released to authorized agency or for birds not released, bury or incinerate.

The following steps must be taken for disposal of the eagle:

1. Contact the U.S. Fish and Wildlife Service Office of Law Enforcement (OLE) or the Migratory Bird Office if OLE is not available.
2. If these entities cannot be reached then:
 - a. Document event, and wait for instructions from OLE, which may include:
 - i. see Data Collection in the Permit Compliance section
 - ii. Pickup bird using disposable gloves.
 - iii. Label and transport eagle to freezer until USFWS staff can be reached
3. OLE Special agent will advise if they will recover or if need to ship to the Service. This needs to be in writing from OLE.
4. Eagle carcasses must be turned over to USFWS so they can be forwarded to the National Eagle Repository in Colorado.

When a live eagle or other migratory bird is found injured:

1. Immediately contact a federally permitted migratory bird rehabilitator or a licensed veterinarian for instructions.
2. Do not handle any wild animal if doing so will risk your safety or the safety of others.
3. Never handle a large bird of prey that appears alert and responsive.
4. When waiting for authorized assistance, keep a safe distance from the animal and do what you can to protect it from harassment by pets or other people.
5. Approach raptors from low to the ground and at a slow quiet pace.
6. Contain raptor if possible.

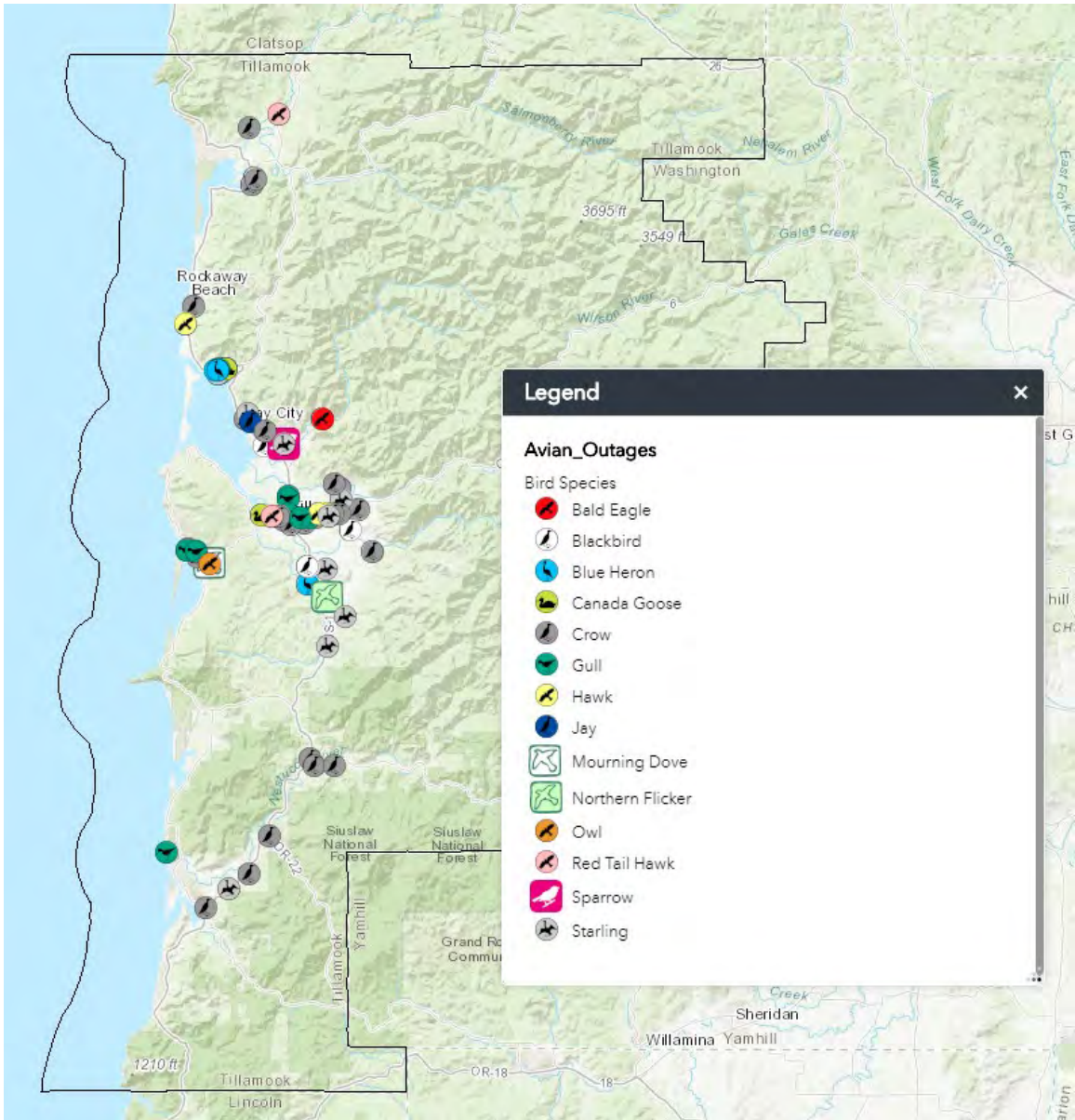
7. Do **not** feed or water raptor.
8. If instructed by authority and if confident in one's abilities, pick up large raptors (excluding eagles) with welding-type gloves – otherwise do your best to keep the bird and public safe.
9. Avoid picking up large birds with sharp beaks (i.e., herons, egrets, loons, etc.). Let rehabbers deal with these birds. They can strike at the eyes.
10. If instructed by authority, pick up smaller raptors with work gloves.
11. Arrange for transportation of birds to the rehabilitation center for the area.

Avian Reporting System

The District's Avian Reporting System is the process by which all avian incidents, nest sites, and monitoring data are recorded and cataloged into the data base. It includes the following components:

- Detection
- Investigation
- Mitigation
- Reporting

The District maintains information on avian incidents in our GIS database for the past two decades, see the figure below. The data is organized in a searchable database that includes date and time, year, species, facilities, and outage data. This provides the District another tool in helping to determine patterns for identifying potential avian assessment zones that may require upgrading construction configurations to avian-friendly construction framing.



Detection

The detection of avian fatalities occurs through the investigation of avian-caused power outages and incidental observations. The detection of nest sites occurs through incidental observations and through regular monthly and annual monitoring efforts.

Investigation

Once detected, field staff will report the circumstances associated with dead or injured birds to the District dispatcher. The dispatcher will record the data on the Outage Report form. A site assessment will be conducted in response to all power outages to determine the cause and circumstances involved. If the cause is bird-related, the assessment will include a determination of bird species, the specific cause of the fatality, if possible, and other relevant data. To enhance the probability of

incidental detections, all field staff will be directed to be alert for dead or injured birds in the vicinity of all the District facilities.

Once detected, field staff will report the circumstances associated with a nest built in or on structures to the District dispatcher. The dispatcher will notify the Operations Supervisor. The Operations Supervisor will conduct a site assessment to make a determination regarding the potential risk posed by the presence of the nest to system function and hazard to the nesting birds. The Operations Supervisor will utilize the nest management procedures to determine the appropriate course of action and notify the appropriate agencies of the proposed or taken action. Information on all bird nests will also be recorded as described under Reporting.

Reporting

Once a fatality or injury has been detected and investigated, the incident will be reported utilizing the District's Outage Report form regardless whether an outage occurred or not. Information will be entered into the Outage Management System data base and then forwarded to Operations Supervisor for making decisions regarding remedial actions.

Since very few nests have been reported on the District's structures, all nest reporting will be accomplished by the Operations Supervisor. The Operations Supervisor shall prepare a Nest Management Report documenting the location, species, agencies notified, actions taken with their associated dates, and photographs before and after corrective actions are taken. Nest relocation activities will also be reported on the Annual Report as required by the USFWS.

Risk Assessment Methodology

With over 655 miles of overhead distribution and transmission lines in our service territory, it is neither economically prudent nor biologically necessary to consider all areas for remedial actions. Thus, this risk assessment process under the APP is limited to new project routes and reconstruction efforts along existing routes.

Risk Assessment Process

The risk assessment process draws upon the available information on important avian use areas, habitats, and avian flight corridors to establish potential avian assessment zones. These zones can then be used to address site-specific potential mortality issues associated with new construction and retrofitting of existing facilities having recorded avian mortality based on proximity to key habitats or bird use areas within the zone. Tillamook PUD met with ODFW on April 23rd, 2018 and reviewed known eagle and other avian nesting and high activity areas. In general, high-risk areas have been identified as those areas that encompass river crossings, areas prone to flooding, feeding/foraging areas, courtship areas, and estuaries.

The following areas are designated as avian assessment zones:

Areas within and immediately adjacent to the:

Nestucca River and major tributaries
Tillamook River and major tributaries

Trask River and major tributaries
Wilson River and major tributaries
Kilchis River and major tributaries
Miami River and major tributaries
Nehalem River and major tributaries
Nestucca Bay
Netarts Bay
Tillamook Bay
Nehalem Bay
Pacific Ocean coastline
Pasture lands that flood seasonally

Mortality Reduction Measures

This section describes the mortality reduction actions that have been implemented based on an assessment of reported incidents and the results of the Predictive Analysis and Risk Assessment procedures.

Mortality incidents reported as a result of power outages or through incidental observations are immediately reviewed. If the review indicates the cause is related to an unprotected power pole or conductor visibility issues, mortality reduction actions (i.e., retrofitting poles or installation of flight diverters) will be implemented accordingly.

Adjacent pole retrofits will be considered on a case-by-case basis. The District evaluates each incident and reviews adjacent structures for similar conditions.

The Risk Assessment has and will be used to inform, strategize, and direct mortality reduction actions. This is a proactive strategy designed to minimize risk by targeting remedial actions into areas identified as having the greatest risk.

Actions may include:

- Alternative siting of new facilities to avoid sensitive or high use areas
- Avian-friendly pole configurations (increase spacing between wires or covering of wires)
- Retrofitting distribution poles to reduce electrocution hazard
- Installing flight diverters to reduce collision hazard

Alternative Siting of New Facilities

Data derived from the risk assessment process within avian assessment zones has and will be used when selecting routes for future power lines. When alternative routes are available, staff will consider routes that minimize the potential for electrocution or collision mortality. When alternative routes are not available, avian-friendly construction standards will be implemented in areas where avian habitat or important movement corridors creates contact potential.

Avian-Safe Pole Configurations

The structural design of new power pole configurations will also be analyzed during or prior to the environmental review process to assess the effects of operation

on electrocution and collision hazard. As previously discussed, configurations that do not provide sufficient separation between energized equipment can result in electrocution.

The SPAP guidelines (APLIC and USFWS) provide several examples of alternative configurations that will be considered to reduce electrocution potential. In addition, the District uses the avian-friendly configurations that are approved for use by the Department of Agriculture Rural Utility Service, which were developed to follow the APLIC and USFWS guidelines.

Retrofitting Power Poles

At sites with recorded electrocution fatalities or collisions of raptors or other large birds detected either through power outages or incidentally by field staff or others, the District will retrofit utility poles with protection devices as described below under Construction Design and Standards. Retrofitting includes installation of protective coverings including insulated conductor, conductor covers, jumper covers, and other covers as needed. In addition, wood pole caps and flight diverters may be installed. Installation of these protective devices is consistent with standard practices according to the APLIC's recommendations.

Installing Flight Diverters to Reduce Collision Hazard

Where the results of the risk assessment indicate a potential collision hazard, the District will install bird/flight diverters. Areas outside of the high-risk area, bird/flight diverters may be installed when supported by history data. Installation of these protection devices is consistent with the standard industry practices and guidelines.

Avian Enhancement Options

The District has and will continue to promote natural resource protection and actions that benefit local and regional bird populations and other wildlife. The District commits to a continuing partnership with local agencies and state and federal resource agencies to explore and participate in activities that enhance and restore habitat. Possible enhancement measures include:

- Installing artificial nest platforms and perches. Artificial perches can be installed near existing utility poles. In other areas where nesting sites and perches are limited (and where utility poles are avian-friendly), installation of artificial structures can enhance use.
- Restoring riparian and wetland vegetation. The District will continue to coordinate with local jurisdictions in efforts to maintain, create, and enhance habitat for wildlife and associated public access and partner with ODFW and USFWS regarding bird protection issues and habitat enhancement opportunities.
- Relocate existing lines in high impact areas. The District will continue to work with Estuary Committees and other agencies to cooperatively relocate existing overhead lines to areas of reduced impact or underground the existing facilities to improve and enhance regional bird populations.

Quality Control

The District periodically updates construction techniques and standards in a continuing effort to provide a safe and reliable electric grid. New products are tested in order to determine the best solutions for reducing avian mortalities, improving reliability and keeping costs low. District staff attend training seminars and conferences to keep pace with technologies and innovative solutions for providing avian-friendly facilities.

Reviews are conducted annually, during the reporting period, to determine the effectiveness of applied solutions. Particular attention is given for similar incidents within close proximity of each other. Also, locations that have similar framing configurations are assessed and appropriate solutions are applied as deemed necessary.

Public Awareness

The District can inform the public about the avian issue, our Avian Protection Plan, as well as our successes in avian protection through the use of our web page and printed materials such as *The Ruralite*, a monthly magazine sent to all the District consumers, newspaper informational advertisements or bill inserts.

Key Resources

U.S. Fish and Wildlife Service

Paul Montuori
U.S. Fish and Wildlife Service
Office of Law Enforcement
9025 SW Hillman Court, Suite 3134
Wilsonville, OR 97070
Telephone: 503-682-6131 (Extension 226)
Cell: 503-705-2989
Fax: 503-682-6171
Email: Paul_Montuori@fws.gov

Richard Bare
U.S. Fish and Wildlife Service
Office of Law Enforcement
9025 SW Hillman Court, Suite 3134
Wilsonville, OR 97070
Email: Richard_bare@fws.gov

Oregon Department of Fish and Wildlife

North Coast Watershed District Office
5005 Third Street
Tillamook, OR 97141
Telephone: 503-842-2741

Wildlife Center of the North Coast

Wildlife Center of the North Coast
PO Box 1232
Astoria, OR 97103
Telephone: 503-338-0331
Pager: 503-338-3954
Email: director@coastwildlife.org

Chintimini Wildlife Rehabilitation Center

Jeff Picton
Chintimini Wildlife Rehabilitation Center
311 NW Lewisburg Ave
Corvallis, OR 97330
Telephone: 541-745-5324
Email: rehab@chintiminiwildlife.org
chintimini_wildlife@comcast.net

Bibliography

“Efficacy of Different Types of ‘Bird Flight Diverter’ in Reducing Bird Mortality Due to Collision with Transmission Power Lines.” 2020 Global Ecology and Conservation, Volume 23, September 2020, e01130.

“A Simple Technology Could Help Stop Birds from Colliding with Power Lines.” Audubon Society, 2019.

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“Reducing Avian Collisions with Power Lines, the State of the Art in 2012.” Avian Power Line Interaction Committee (APLIC), Edison Electric Institute and APLIC. Washington DC, October 2012.

“Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006”. Avian Power Line Interaction Committee (APLIC), Edison Electric Institute and APLIC. Washington DC, 2006

Appendices

Appendix A – USFWS Avian Permit



MIGRATORY BIRD SPECIAL PURPOSE UTILITY
PERMIT

Permit Number: MB158340

Version Number: 1

Effective: 2022-04-01 **Expires:** 2025-03-31

Issuing Office:

Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

MB Portland Permit Office

911 NE 11th Ave.

Portland, Oregon 97232

permitsR1MB@fws.gov

Tel: 503-872-2715

Digitally signed by

Biologist

Permittee:

TILLAMOOK PEOPLES UTILITY DISTRICT

1115 PACIFIC AVE

TILLAMOOK, OR 97141

US

Authority: Statutes and Regulations: 16 U.S.C 703-712 50 CFR Part 13, 50 CFR 21.27

Location where authorized activity may be conducted:

Activities Conducted: Company property and rights-of-way in OR

Records Kept: 1115 Pacific Ave, Tillamook, OR 97141

TILLAMOOK COUNTY

Reporting requirements:

Annual Report Due: 01/31

See Condition H for additional reporting requirements

Submit To: PermitsR1MB@fws.gov and MigBirdReports@fws.gov

Authorizations and Conditions:



MIGRATORY BIRD SPECIAL PURPOSE UTILITY
PERMIT

Permit Number: MB158340

Version Number: 1

Effective: 2022-04-01 **Expires:** 2025-03-31

A. Possession and Transport

You are authorized to conduct the following activities as specified below for human health and safety purposes or during the course of duties for utility purposes:

(1) Migratory Birds (except as limited in A(2)): You and subpermittees are authorized to collect, transport, and possess remains (i.e., whole birds, feathers, parts, bone piles, etc.) of migratory birds found at the location/property specified above. "Collect" includes picking up remains for the purposes of temporary (e.g., for immediate burial) or longer-term (e.g., transportation to landfill, storage, etc.) possession.

Birds collected may be possessed for the tenure of the permit for educational purposes or searcher efficiency and remains' persistence trials or as directed by Office of Law Enforcement (OLE). Any remains in possession, including stored remains, must be disposed of upon permit expiration unless you have submitted a request to renew this permit at least 30 days prior to expiration.

(2) Bald Eagles and Golden Eagles (Eagles) and species federally listed as Threatened or Endangered (T/E Species): If you or a subpermittee discover remains of an Eagle or T/E species and would like to collect or move the remains, you must call U.S. Fish and Wildlife Service (Service), OLE. You must receive instructions and approval BEFORE collecting or moving the remains, unless you are working under a specific alternative protocol established by you and OLE. It may be necessary to preserve the remains or parts onsite until an agent or other Service or State representative arrives to collect them.

A list of T/E Species by State may be found in the Service's Threatened and Endangered Species System (TESS) database at: <<<http://www.fws.gov/endangered> (<http://www.fws.gov/endangered>)>>

B. Migratory Bird Nest Take

(1) Eagles or T/E Species: Take of nests, whether active or inactive, is not authorized for these species. Additional federal permit(s) may be required.

(2) Active Nests (nests containing chicks or viable eggs):

In emergency situations you are authorized to take (relocate or destroy) active migratory bird nests, including viable eggs or chicks, found on utility structures, in rights-of-way, or on hazard trees within the fall zone if (i) the safety of the migratory birds, nests, or eggs is at risk, or (ii) the migratory birds, nests, or eggs pose a threat of serious bodily injury or a risk to human life, including a threat of fire hazard, mechanical failure, or power outage. You may not use this authority to destroy or relocate nests for situations in which migratory birds are merely causing a nuisance or inconvenience.

a. Active Nest Relocation

Relocation of nests is preferred if the circumstances or conditions warrant. If nests are relocated, they must be relocated to a site and structure (natural or artificial) appropriate to the species' requirements. You must monitor relocated nests sufficient to determine if adult birds have returned or if the nest is abandoned. If adult birds have abandoned the nest, eggs/chicks may be transported to a federally



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permitted rehabilitator.

b. Active Nest Destruction

If circumstances or conditions are not appropriate for relocation, you may destroy the nest. Viable eggs and/or chicks may be destroyed or transported to a federally permitted rehabilitator for care.

c. Reporting

If you relocate or destroy an active migratory bird nest, you must report it to the appropriate Regional Migratory Bird Permit Office (MBPO) describing the emergency situation, circumstances, and action proposed/taken. When practicable, notification should be prior to taking action but must be no later than 72 hours after relocation/destruction. See Condition H(1)(b) for annual report requirements.

(3) Inactive Nests:

You are authorized to relocate inactive migratory bird nests to avoid or minimize the need to take active migratory bird nests. Inactive nests are nests without viable eggs or chicks.

a. Inactive Nest Relocation

For avoidance and minimization purposes, inactive migratory bird nests or nest material may be relocated to a site and structure (natural or artificial) appropriate to the species' requirements.

b. Inactive Nest Destruction

Inactive nest destruction does not need to be reported under this permit. Inactive migratory bird nests may be destroyed without a federal permit under the Migratory Bird Permit Memorandum for Destruction and Relocation of Migratory Bird Nest Contents (June 14, 2018). Nest material may be destroyed or scattered and left on site. You may not possess the nest without additional authorizations.

C. Data Collection

For the remains of every bird collected, all required data listed below must be recorded prior to disposal or storage. Stored remains must be bagged and labeled with your permit number and a unique ID number. See H(4) for reporting options.

1. Species (common name if known; if unknown, species group (e.g. gull, raptor) or "unknown")
2. Condition (e.g. injured, remains, part(s), bone(s))
3. Disposition (e.g. buried, incinerated, collected and stored, OLE)
4. Discovery Date and, if different, Collection Date
5. Specific Location (GPS coordinates if known; otherwise nearest structure ID number)
6. State

The report form (H(4)) has additional reporting fields that may be completed if information is available.

D. Injured or orphaned birds



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If you find injured or orphaned migratory birds, including Eagles and T/E Species, you should immediately contact a federally permitted migratory bird rehabilitator or a licensed veterinarian and follow their instructions for transport, care, and/or disposition of birds. We encourage you to offset the costs incurred by birds injured by utility operations or infrastructure by paying expenses for the care, donations, in-kind assistance, or other means.

E. Trial specimens

Migratory birds, other than Eagles and T/E Species, collected and possessed under this permit may be used for trials, such as searcher efficiency and remains' persistence.

For trial purposes, you may receive by donation lawfully acquired migratory bird specimens, other than Eagles and T/E Species, from those authorized to donate by federal permit or regulation. State permits for acquisition and/or inter-state movement may be required. Accurate records must be maintained for birds acquired through donation (see recordkeeping requirement H(3)(b)).

F. Except as authorized by Condition B, take and collection of live, non-injured migratory birds, eggs, or nests is not authorized by this permit. In addition, this permit does not authorize the take, capture, harassment, or disturbance of Eagles and T/E Species.

G. Disposition of Remains

(1) Eagles or T/E Species:

In accordance with Condition A(2) above, OLE will advise you on disposition of remains. If you are already working under a specific alternative protocol established by you and OLE, continue to follow the agreed upon instructions. Disposition must be reported in your annual report to your migratory bird permit issuing office.

(2) For all other Migratory Birds:

Dispose of remains by:

- a. Turning over to a state or federal wildlife agency for official purposes;
- b. Donating to the USGS "Renewables-Wildlife Solutions" project;
- c. Donating to an entity authorized to possess migratory birds by federal permit or regulation (you may contact your MBPO for verification of a federal permit or regulation prior to donation);
- d. Donating to a permitted Non-Eagle Repository for distribution to federally enrolled Native Americans for religious purposes (<https://www.fws.gov/southwest/NAL/feathers.html>); or
- e. Completely destroyed by burial or incineration as provided by law.

H. Reporting

(1) Annual Report:

You must submit an annual report by January 31 each year for all activities conducted between January 1 and December 31 of the preceding year to your migratory bird permit issuing office, including:



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- a. All birds collected and all Eagles and T/E Species collected. Your report must include all required information as described in Condition C.
- b. Any active nests relocated or destroyed, including the date, location, species, disposition and number of eggs/chicks. For relocated nests, include if the parents returned to or abandoned the nest.

(2) Eagles and T/E Species:

For Eagle or T/E species discovered (Condition A(2)), report to OLE, unless you are working under a specific alternative protocol established by you and OLE. If you notify OLE via email, you may notify the MBPO by including your MBPO contact. If you contact OLE via phone, follow-up with an email to the appropriate MBPO.

Reporting to OLE must be prior to collection. Reporting to the MBPO must be no later than 7 days from the date of discovery of the remains. Report any relevant information, including the data in Condition C.

(3) Additional Recordkeeping:

You must keep records of the following information. You are not required to report this information; however, these records may be requested at any time, including as part of your renewal materials.

- a. Relocation of any inactive nests, including date relocated and purpose of relocation.
- b. Any migratory bird specimens obtained by donation as specified in Condition E. Include date acquired, species and number, permit number (or regulation), and name/organization from whom the birds were acquired.
- c. Mortality events involving unexpectedly high numbers of birds, unusual species groups, and/or Birds of Conservation Concern.

A list of Birds of Conservation Concern may be found at:

<<<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
(<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>)>>

(4) Submitting Reports:

Records may be kept in IMR (the Service's Injury and Mortality Report system). You must download from IMR a report of your activities for the calendar year and submit it electronically by January 31 to your MBPO Contact AND MigBirdReports@fws.gov with the subject line "ANNUAL REPORT - [Permittee Name]".

Or,

You may submit an electronic report of your activities for the calendar year. The spreadsheet report form can be downloaded from: <<<http://www.fws.gov/forms/3-202-17.xlsm> (<http://www.fws.gov/forms/3-202-17.xlsm>)>>. Instructions are available on Tab 1 of the spreadsheet. Complete Tab 2, and if appropriate Tab 3, and email your report by January 31 to your MBPO Contact AND MigBirdReports@fws.gov with the subject line "ANNUAL REPORT - [Permittee Name]".



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(5) If your operations occur on land not owned by you and you are contacted by a landowner who has found a bird or eagle, you must inform them on how to properly dispose of the bird. In any future written agreements with landowners, we recommend you include instructions on what to do if the landowner discovers a dead bird or eagle.

I. Authorized Subpermittees: None Listed.

In addition, any person who is employed by the permittee for the activities specified in this permit, or any person who the principal officer provides a written letter designating them as a subpermittee may exercise the authority of this permit. The letter should identify any restrictions on the date(s), location(s), and/or activities a subpermittee may conduct.

J. You and any subpermittees must comply with the below Standard Conditions.

These standard conditions are a continuation of your permit conditions and must remain with your permit. These standard conditions are nationwide and may not be modified for individual permits.

1. All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 21.27 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. If you have questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: <http://www.fws.gov/migratorybirds/mbpermits.html>. (<http://www.fws.gov/migratorybirds/mbpermits.html>.)

2. General conditions set out in Subpart B of 50 CFR 13, and specific conditions contained in Federal regulations cited above, are hereby made a part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.

3. The validity of this permit is also conditioned upon strict observance of all applicable foreign, state, local tribal, or other federal law.

4. Valid for use by permittee named above.

5. Banded Birds (remains collected and injured birds) must be reported to the U.S. Geological Survey Bird Banding Laboratory at <<<http://www.reportband.gov> (<http://www.reportband.gov>)>>. Information provided must include, as accurately as possible, species of bird, band number, date recovered, recovery location, and name and contact information of the person who recovered the remains or bird.



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6. Subpermittees. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. Subpermittees must be at least 18 years of age. As the permittee, you are legally responsible for ensuring that anyone conducting activities under your permit is adequately trained and adheres to the terms of your permit. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of designation letters you have provided.

7. Carrying your permit. You and any subpermittees must carry a legible copy of this permit and display it upon request of any duly authorized federal, state, or tribal officer whenever exercising its authority. Subpermittees must also carry your written subpermittee designation letter, if applicable.

8. Records. You must maintain complete and accurate records of the activities conducted and the data collected under this permit. You must keep all required records and collected wildlife parts relating to permitted activities at the location you identified in writing to the migratory bird permit issuing office. (50 CFR 13.46 and 21.27)

9. Site inspections. Acceptance of this permit authorizes the USFWS to enter the utility property at any reasonable hour as necessary to inspect the wildlife, records, facilities, property, and associated infrastructure for wildlife impacted by the utility, and for compliance with the terms of this permit and governing regulations. (50 CFR 13.47)

10. Applicable laws. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

11. Other permissions. This permit does not authorize salvage of specimens on Federal, State, tribal, or other public or private property without additional prior written permits or permission from the agency/landowner/custodian.

12. This permit does not grant right of trespass on property you do not own or control.

This permit does not, nor shall it be construed to, authorize lethal take (except as authorized by Condition B(2)) or injury of migratory birds or limit or preclude the U.S. Fish and Wildlife Service from exercising its authority under any law, statute, or regulation, or from taking enforcement action against any individual, company, or agency. This permit is not intended to relieve any individual, company, or agency of its obligations to comply with any applicable Federal, State, Tribal, or local law, statute, or regulation. We encourage you to develop/update and implement a proactive Avian Protection Plan (APP) per current U.S. Fish and Wildlife Service/Avian Power Line Interaction Committee (APLIC) guidelines found at <<www.aplic.org (www.aplic.org)>> or Wind Energy Guidelines found at <<<http://www.fws.gov/windenergy/> (<http://www.fws.gov/windenergy/>)>>, as applicable.

For suspected illegal activity, immediately contact USFWS Law Enforcement 1-844-FWS-TIPS (397-8477)



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<https://www.fws.gov/le/regional-law-enforcement-offices.html> (<https://www.fws.gov/le/regional-law-enforcement-offices.html>)

Appendix B – ODFW Scientific Take Permit



Oregon Department of Fish and Wildlife

Wildlife Division 4034 Fairview Industrial Drive SE Salem OR 97302

2022 SCIENTIFIC TAKING PERMIT

Permittee: **KC Fagen**

Tillamook PUD

1115 Pacific Ave

Tillamook, OR 97141-

(503) 815-8628

Oregon Permit Number 047-22

Issue date: 2/3/2022

Revision Date:

Expiration Date: 12/31/2022

Federal Number: MB158340-0

SPECIES:	NUMBER:	Collect	Live Trap and Release	Salvage
Birds (total)	10	No	No	Yes
	0	No	No	No
	0	No	No	No
	0	No	No	No
	0	No	No	No
	0	No	No	No
	0	No	No	No
	0	No	No	No
	0	No	No	No

Collection Method:

Salvage

Counties Authorized:

Tillamook

Conditions of Permit:

- 1) Any injured or dead eagle located, permittee must notify ODFW and US Fish and Wildlife Service per federal permit. Contacts - USFWS Oregon Law Enforcement Office: 503-682-6131. ODFW Northwest Region Conservation Biologist: Susan Barnes (971-673-6010 or Susan.P.Barnes@odfw.oregon.gov). OSP Fish & Wildlife Division may be able to provide immediate assistance when an injured eagle or T&E listed species is found.
- 2) Relocation of an active nest is to be coordinated with ODFW's district wildlife biologist (Paul Atwood, #503-842-2741 x245) or regional wildlife conservation biologist (Susan Barnes, #503-320-9617) prior to nest manipulation. If relocation of an active nest is conducted, include results of effort on annual report.
- 3) Nest manipulation of bald eagles, golden eagles, and of Threatened and Endangered species is not authorized.
- 4) With the exception of bald and golden eagles and Threatened and Endangered species, all salvaged bird carcasses are to be buried at the Tillamook PUD avian burial on-site.
- 5) Any injured native bird is to be taken to the federal and state licensed wildlife rehabilitation facility unless otherwise directed by the USFWS or ODFW. A list of licensed rehabbers can be found on ODFW's website: odfw.com
6. Any animal salvaged with obvious lesions or other sign of disease is to be reported, collected and transferred to ODFW's Wildlife Health and Population Lab (866-968-2600 or wildlife.health@odfw.oregon.gov) within 24 hours or transferred to an ODFW-approved laboratory.
- 7) Any injured animal categorized as a non-native species (e.g., European starling, English house sparrow) may not be released back into the wild, kept alive in captivity or relocated to a new site. Final disposition of all non-native species must be human euthanasia according to AVMA euthanasia guidelines (2020 edition).
- 8) The annual Scientific Taking Report is to be submitted using ODFW's standard report form by January 30, 2023. Species must be identified by species name (e.g. not "waterfowl"). Locations must be reported in UTM coordinates. Renewal of this permit will not occur until the annual report has been received by ODFW. Annual must include the final disposition of all birds (any life stage) either live or dead.
- 9) A copy of this permit must be in the possession of the permittee or any subpermittee when exercising the permits authority.

Sub-permittees: Tillamook PUD Crew Foreman personnel

Nicole Stuttgen, ODFW

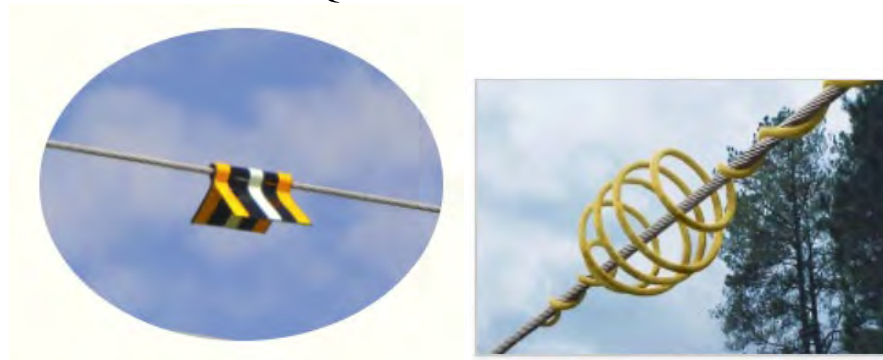
If there are questions, please contact the ODFW Wildlife Division at (503) 947-6301.

Appendix C – Avian-Friendly Construction Standards (Framing Units)

TILLAMOOK PUD AVIAN-FRIENDLY DEVICES



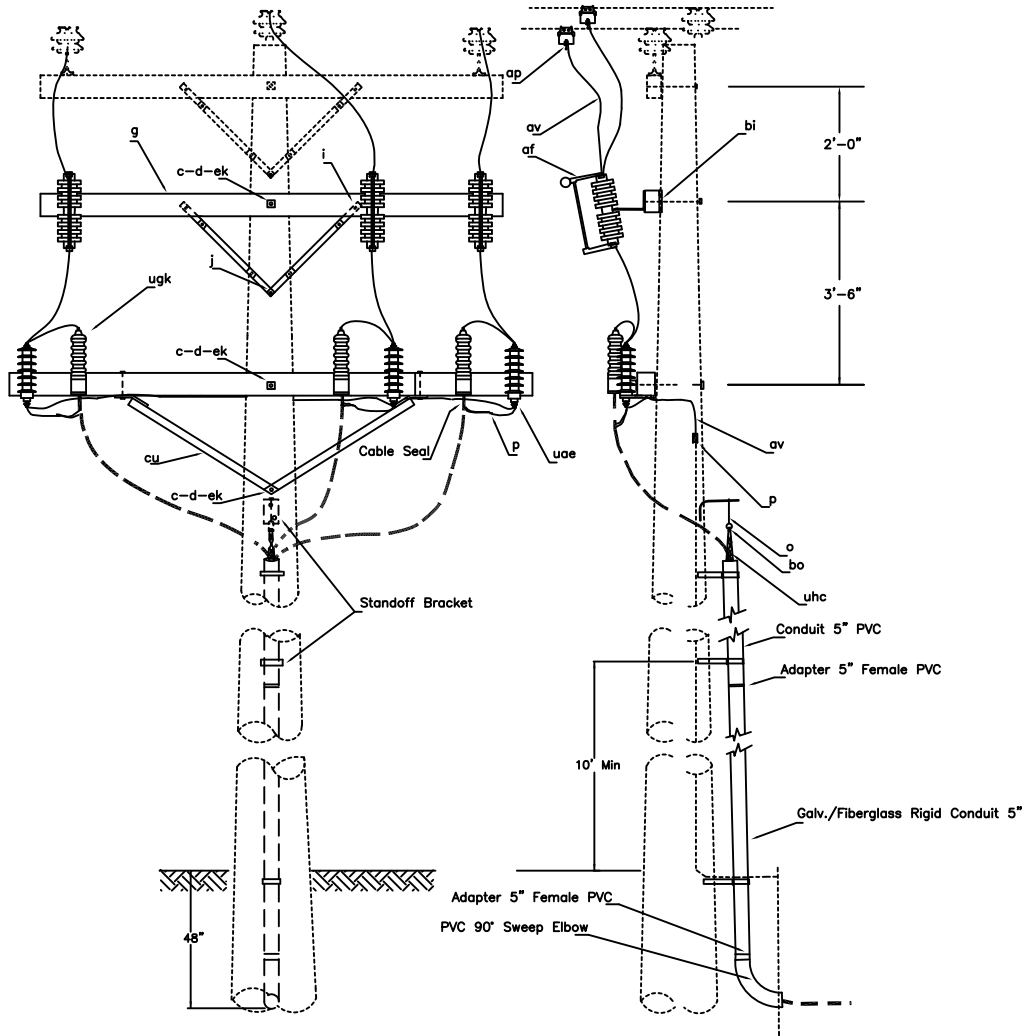
EQUIPMENT COVERS



BIRD FLIGHT DIVERTERS



LINE COVERS



NOTES:

- 1. For polymer termination use no. UM5 3/0 P

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
c	3 Bolt, machine, 5/8" x req'd length	cu	1 Brace, wood, 28" span (1 set)
c	2 Bolt, machine, 1/2" x 6"	cu	1 Brace, wood 60" span (1 set)
d	2 Washer, square 2"	ek	* Locknuts
d	5 Washer, square 2 1/4"	uae	3 Arrester, dist, 18 kV urd. riser, polymer
g	1 Crossarm, 3 3/4" x 4 3/4" x 10'-0"	ugk	3 Termination, 1/0 strand pothead-25 kV
g	1 Crossarm, 3 3/4" x 4 3/4" x 8'-0"	uhc	3 Cable support
i	2 Bolt, carriage		2 Adapters, 5" PVC, female
j	9 Screw, lag, 1/2"x4"		3 Hot line stirrup
o	1 Bolt, oval eye, 5/8"x req'd length	20	Conduit, 5" PVC, schedule 40
p	* Connectors	10	Conduit, 5" galv. rigid
af	3 Cutout, LBC 100 amp heavy duty	1	Conduit, 5" PVC 90° sweep elbow
ap	3 Connector, hot tap (small)	3	Standoff bracket, kendorf type w/ clamps
av	# Wire, #6 insulated str. copper	1	Standoff bracket, meter loop type
av	# Wire, #4 insulated str. copper	3	Cable seal kit, cold shrink
bi	1 Pole gain	1	Connector, ground, 5"
bo	1 Anchor, shackle		

* As required
Required Length



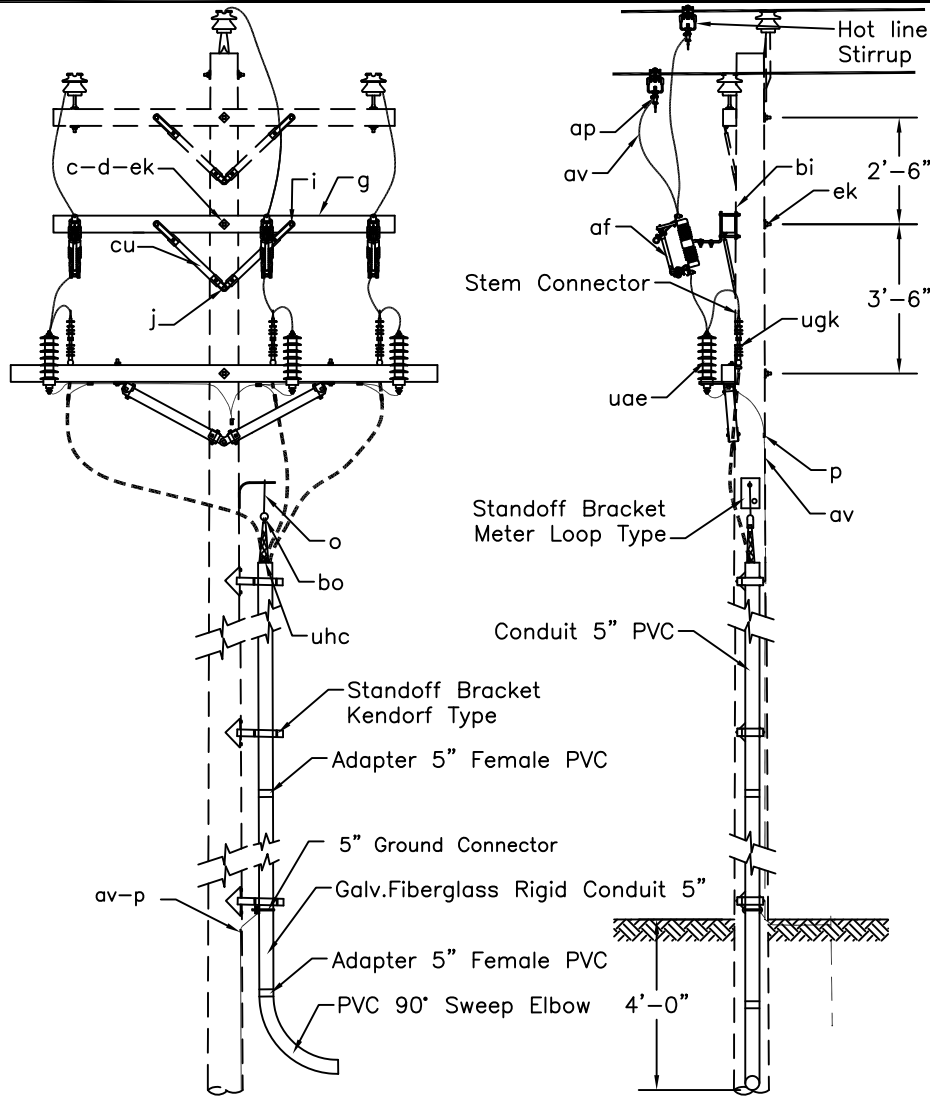
THREE PHASE - PORCELAIN
PRIMARY CABLE RISER
1/0 AL URD PRIMARY CABLE

DATE	REVISION
12/14/2006	Correct sizes

DATE
5-1-01
DWN BY
J Penney
DWG NAME
um5-30

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

UM5 3/0

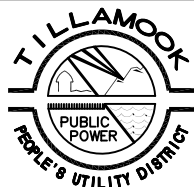


NOTES:

1. Show required amount of PVC conduit in parenthesis following the spec. no. E.g. UM5 3/0P (10' PVC 4")
2. For porcelain termination use no. UM5 3/0

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
c	3 Bolt, machine, 5/8" x req'd length	cu	1 Brace, wood, 28" span (1 set)
c	2 Bolt, machine, 1/2" x 6"	cu	1 Brace, wood 60" span (1 set)
d	2 Washer, square 2"	ek	* Locknuts
d	5 Washer, square 2 1/4"	uae	3 Arrester, dist, 18 kV urd. riser
g	1 Crossarm, 3 3/4" x 4 3/4" x 10'-0"	ugk	3 Termination, 1/0 strand polymer-25 kV
g	1 Crossarm, 3 3/4" x 4 3/4" x 8'-0"	uhc	3 Cable support
i	2 Bolt, carriage		2 Adapters, 5" PVC, female
j	9 Screw, lag, 1/2"x4"		3 Hot line stirrup
o	1 Bolt, oval eye, 5/8"x req'd length	#	Conduit, 5" PVC, schedule 40
p	* Connectors	10	Conduit, 5" galv. rigid
af	3 Cutout, LBC 100 amp heavy duty	1	Conduit, 5" PVC 90° sweep elbow
ap	3 Connector, hot tap (small)	3	Standoff bracket, kendorf type w/ clamps
av	# Wire, #6 insulated str. copper	1	Standoff bracket, meter loop type
av	# Wire, #4 insulated str. copper	3	Connector, stem, 1/0 AL STR
bi	1 Pole gain	1	Connector, ground, 5"
bo	1 Anchor, shackle		

* As required
Required Length



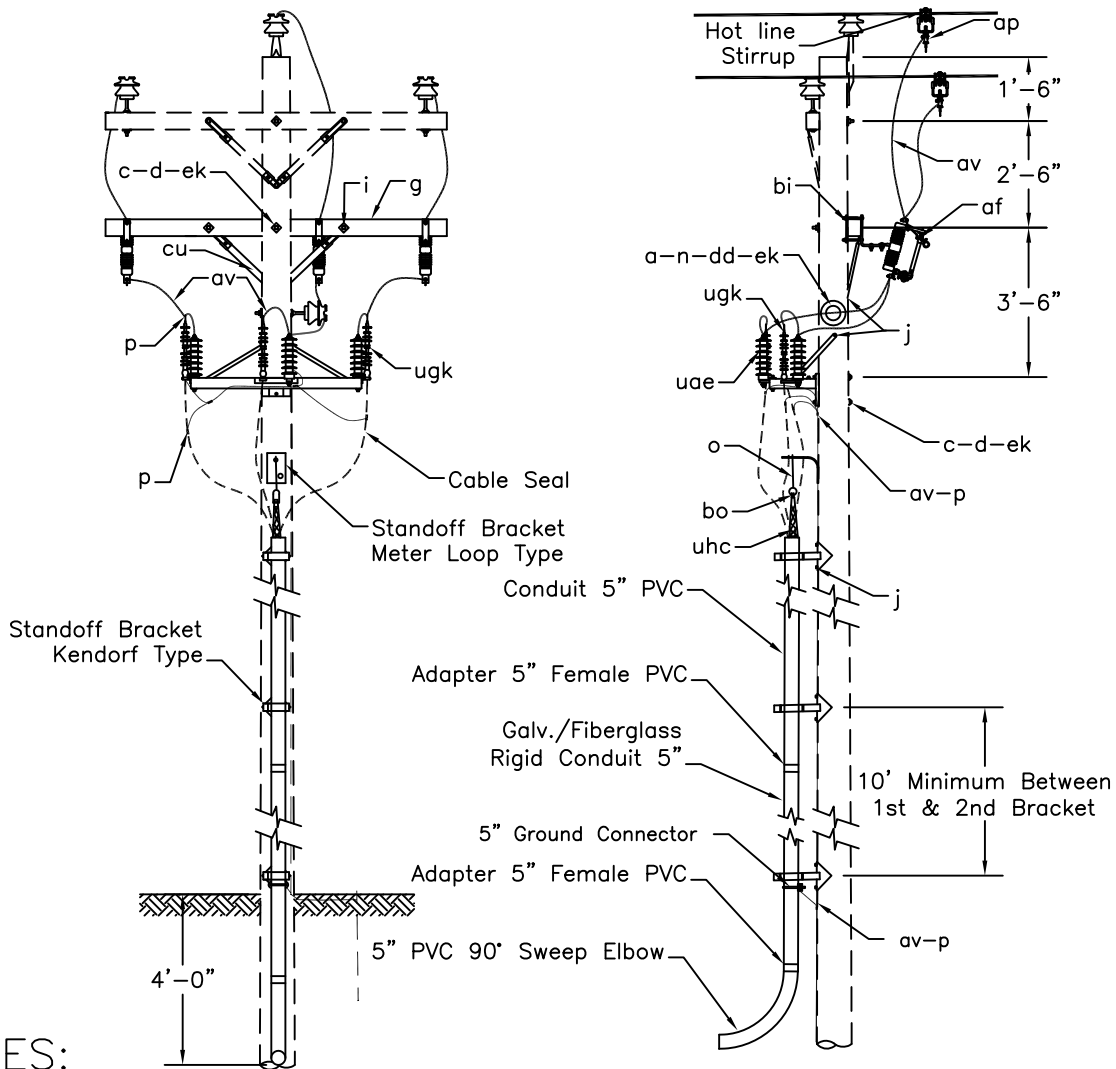
THREE PHASE - POLYMER
PRIMARY CABLE RISER
1/0 AL URD PRIMARY CABLE

DATE	REVISION
12/14/2006	Correct sizes

DATE
5-1-01
DWN. BY
J. Penney
DWG NAME
um5-30p

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

UM5 3/0P



NOTES:

1. For porcelain termination use no. UM5 3/0

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a	1 Insulator, pin type	dd	1 Adapter, insulator
c	3 Bolt, machine, 5/8" x req'd length	ek	* Locknuts
d	5 Washer, square 2 1/4"	uae	3 Arrester, dist, 18 kV urd. riser, polymer
g	1 Crossarm, 3 3/4" x 4 3/4" x 8'-0"	ugk	3 Termination, 1/0 strand polymer-35 kV
i	2 Bolt, carriage	uhc	3 Cable support
j	9 Screw, lag, 1/2"x4"		2 Adapters, 5" PVC, female
n	1 Bolt, double arming, 5/8" x req'd length	20	Conduit, 5" PVC, schedule 40
o	1 Bolt, oval eye, 5/8"x req'd length	10	Conduit, 5" galv. rigid
p	* Connectors	1	Conduit, 5" PVC 90° sweep elbow
af	3 Cutout, LBC 100 amp w/ solid doors	3	Hot line stirrup
ap	3 Connector, hot tap (small)	3	Standoff bracket, meter loop type
av	# Wire, #6 insulated str. copper	1	Standoff bracket, kendorf type, w/ clamps
av	# Wire, #4 insulated str. copper	3	Connector, stem, 1/0 AL STR
bi	1 Pole gain	1	Bracket, aluminum cat# WT3CA-48
bo	1 Anchor, shackle	3	Cable seal kit, cold shrink
cu	1 Brace, wood, 28" span (1 set)	1	Connector, ground, 5"

* As required
Required Length



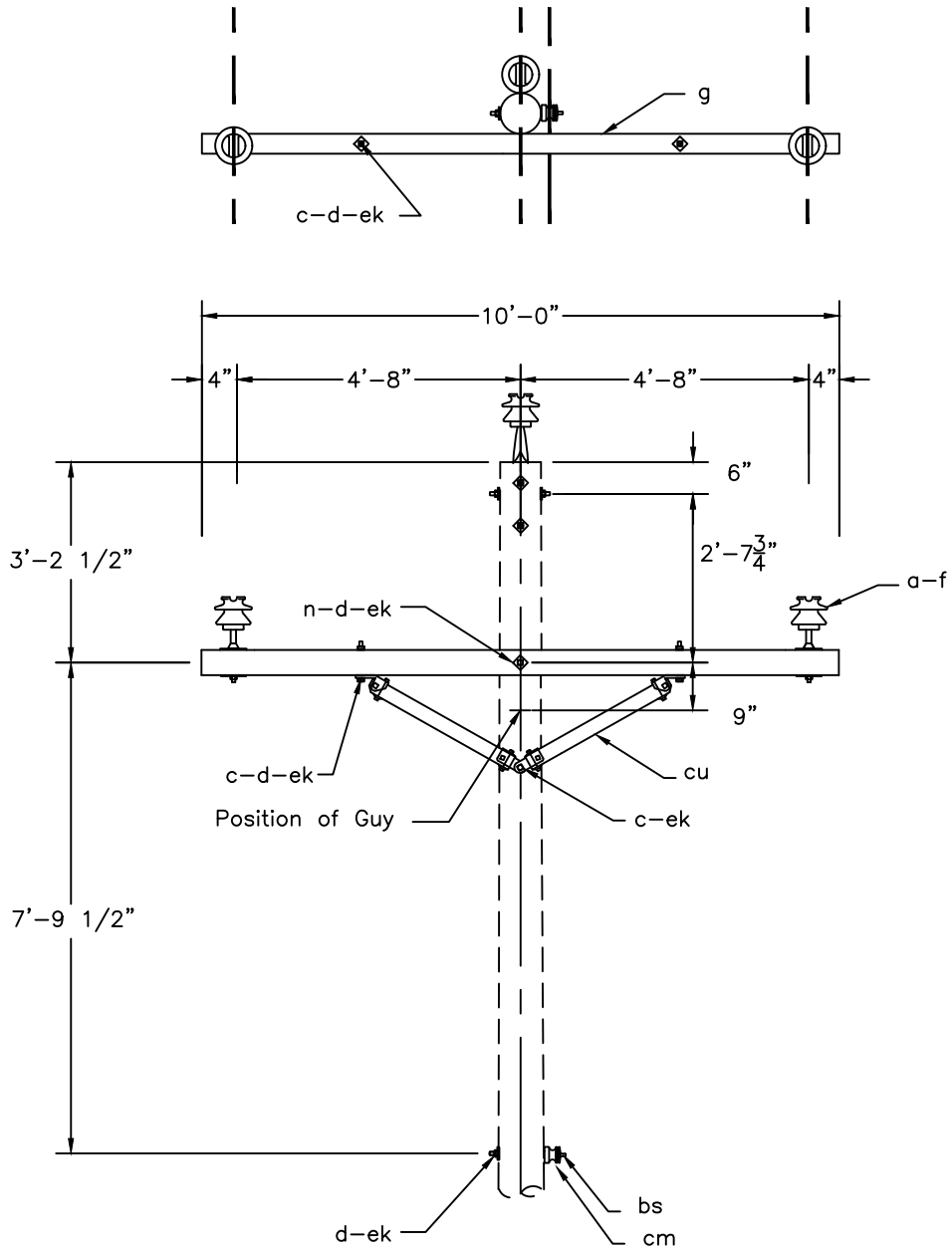
DATE 5-01-01
DWN BY J. Penney
DWG NAME um5-30pz

THREE PHASE - POLYMER
PRIMARY CABLE RISER
1/0 AL URD PRIMARY CABLE

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

UM5 3/0PZ

DATE	REVISION
12/14/2006	Correct sizes



RAPTOR FRIENDLY

Pole Top Pin Assembly

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a	6 Insulator, pin type	f	4 Pin, crossarm, steel
b	2 Pin, pole top, 20"	g	2 Crossarm, 3-5/8" x 4-5/8" x 10'-0"
c	3 Bolt, machine, 5/8 x req'd length	n	3 Bolt, single upset, insulated
c	4 Bolt, machine, 1/2" x 6"	cu	2 Brace, wood, 60" span (1 set)
d	1 Washer, curved 3" x 3"	bs	1 Bolt, single, upset
d	10 Washer, square 2 1/4"	ek	* Locknuts
cm	1 Insulator, spool, 3"		

* As required
Required length

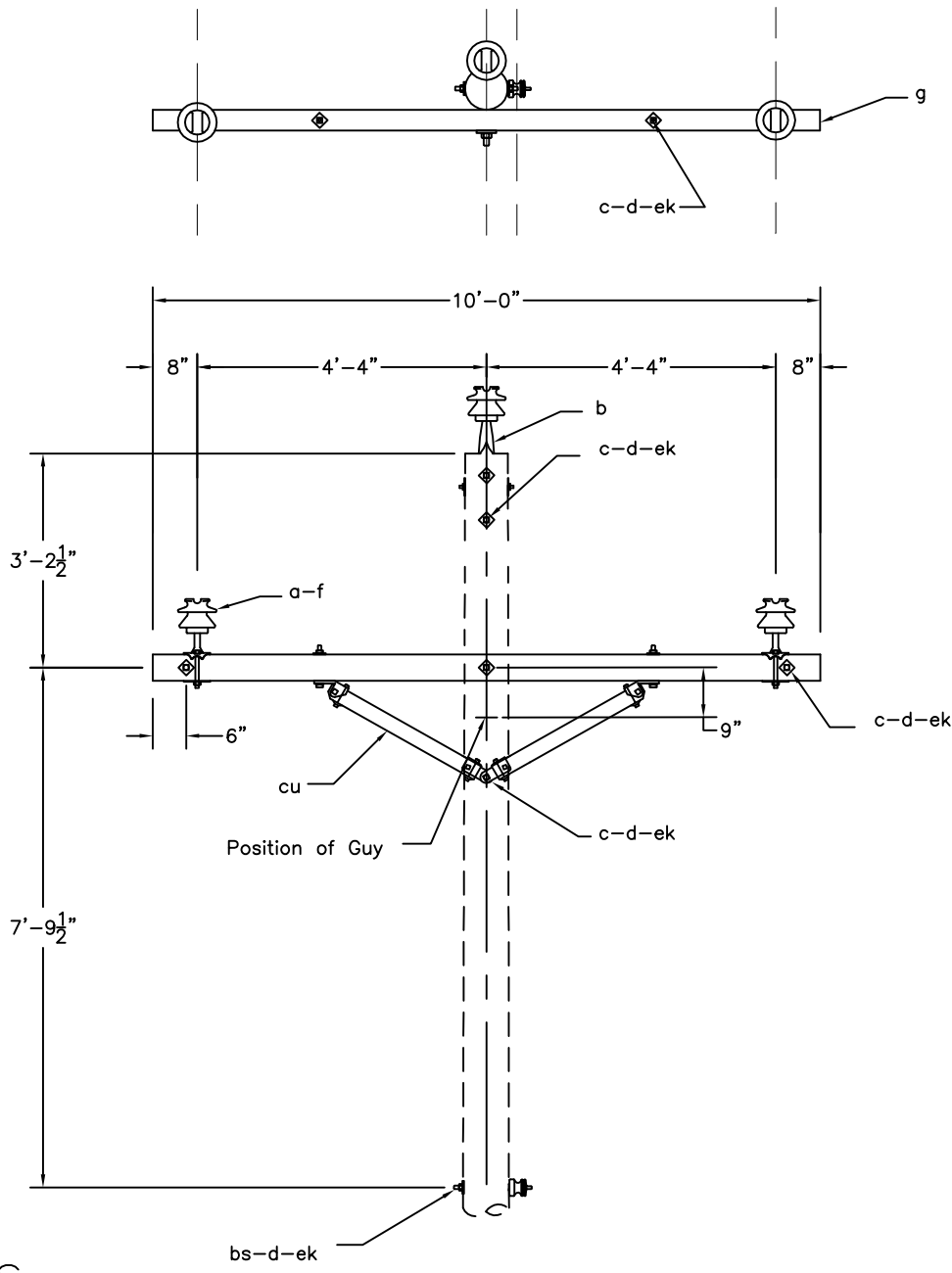


RAPTOR FRIENDLY CONSTRUCTION - 14.4/24.9-kV.
THREE-PHASE CROSSARM CONSTRUCTION
0° TO 2° ANGLE

DATE
5-9-16
DWN. BY
D VanSant
DWG
VC1.1R

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VC1.1R



NOTES:

1. This construction required for all conductors having a breaking strength of more than 4500 lbs.

RAPTOR FRIENDLY

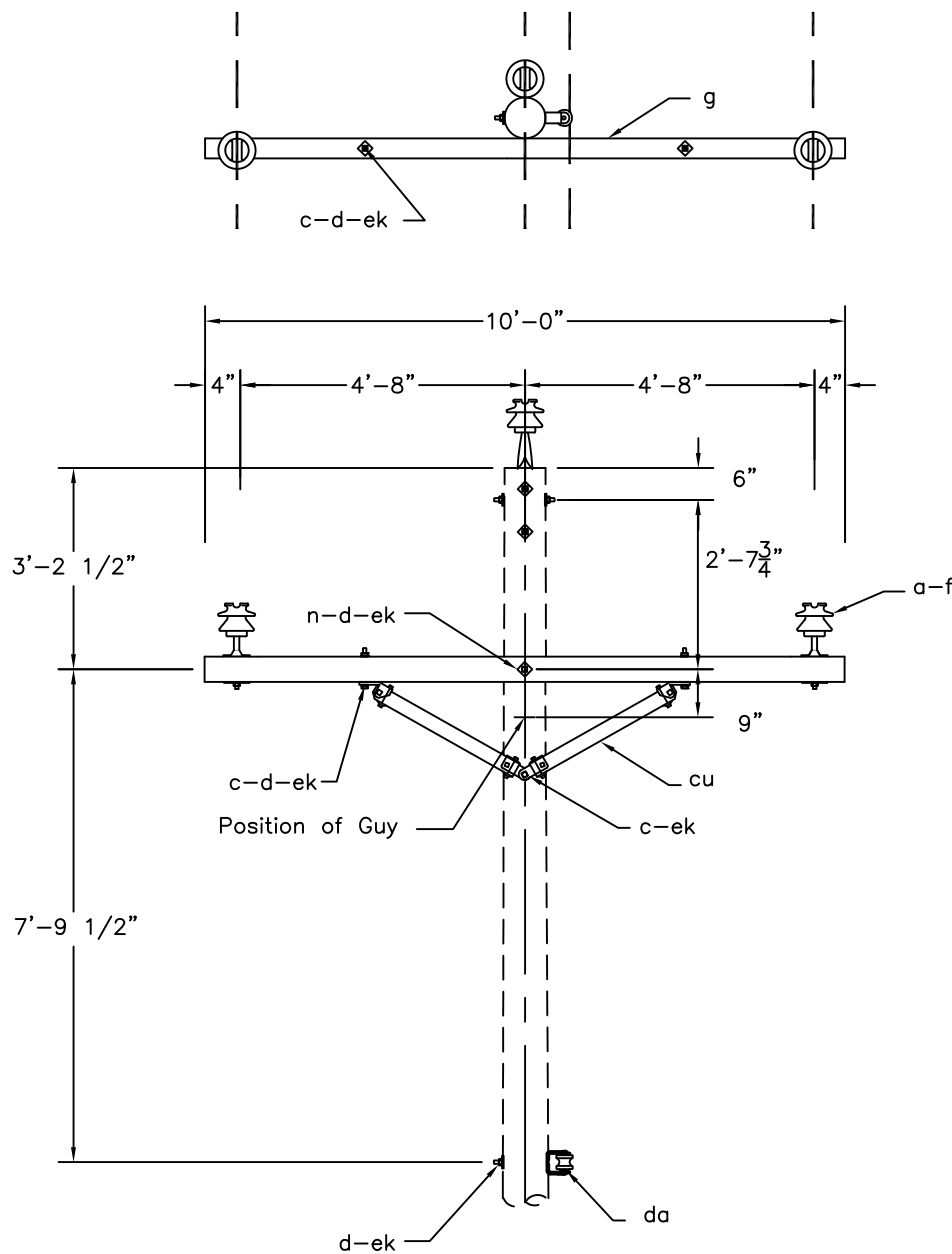
ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a 3	Insulator, pin type	f 2	Pin, crossarm, steel, clamp type
b 1	Pin, pole top 20"	g 1	Crossarm, 3 3/4" x 4 3/4" x 10'-0"
c 6	Bolt, machine, 5/8" x req'd length	bs 1	Bolt, single upset, insulated
c 2	Bolt, machine, 1/2" x 6"	cu 1	Brace, wood, 60" span (1 set)
d 6	Washer, square 2 1/4"	ek *	Locknuts
d 5	Washer, curved 3" x 3"		

* As required
Required length



RAPTOR FRIENDLY CONSTRUCTION - 14.4/24.9-kV.
THREE-PHASE CROSSARM CONSTRUCTION
0° TO 2° ANGLE (LARGE CONDUCTORS)

DATE 7-02-15	TILLAMOOK P.U.D. OREGON 24 TILLAMOOK	VC1.2LXR
DWN. BY <i>J. Broad</i>		
DWG. NAME VC12LXR		

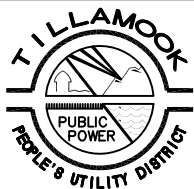


RAPTOR FRIENDLY

Pole Top Pin Assembly

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a 6	Insulator, pin type	f 4	Pin, crossarm, steel
b 2	Pin, pole top, 20"	g 2	Crossarm, 3-5/8" x 4-5/8" x 10'-0"
c 3	Bolt, machine, 5/8 x req'd length	n 3	Bolt, single upset, insulated
c 4	Bolt, machine, 1/2" x 6"	cu 2	Brace, wood, 60" span (1 set)
d 1	Washer, curved 3" x 3"	da 1	Bracket, insulated
d 10	Washer, square 2 1/4"	ek *	Locknuts

* As required
Required length

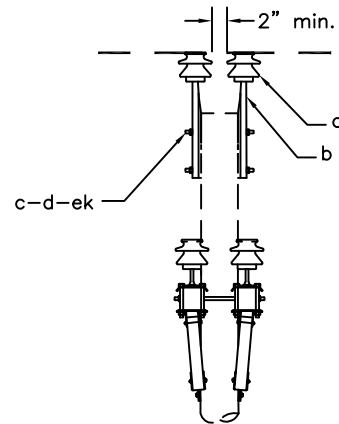
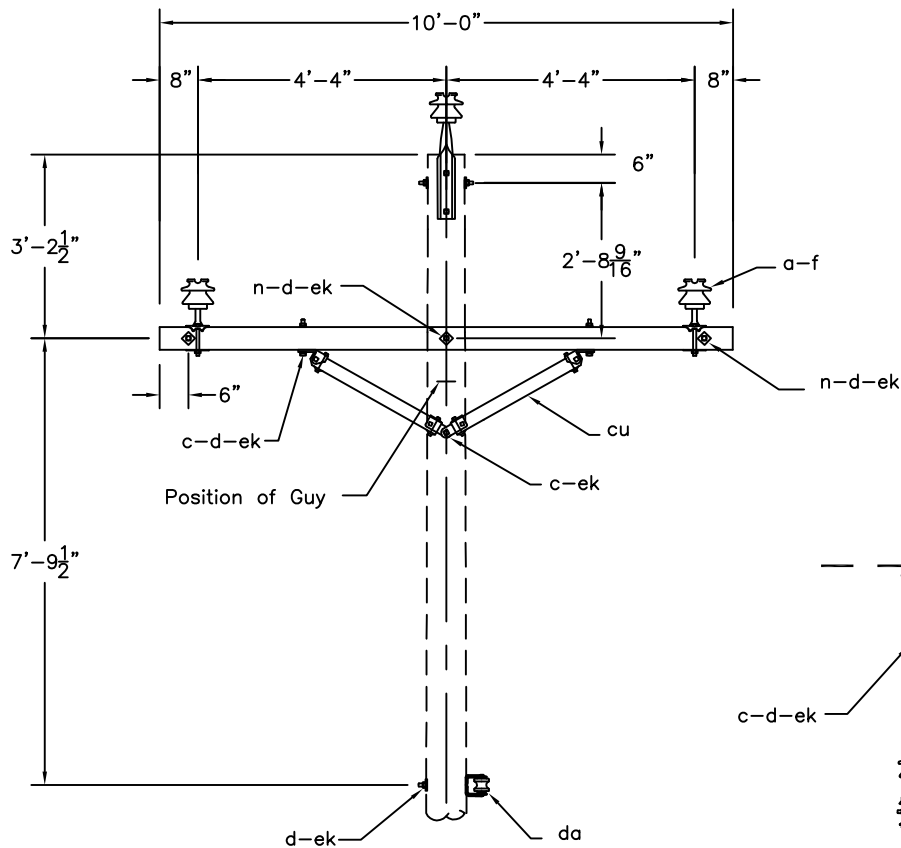
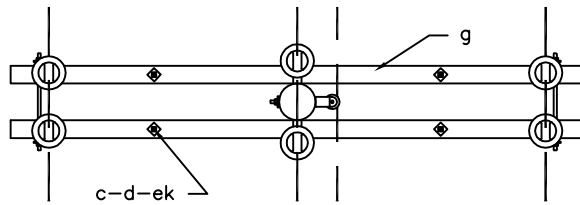


RAPTOR FRIENDLY CONSTRUCTION - 14.4/24.9-kV.
THREE-PHASE CROSSARM CONSTRUCTION
0° TO 2° ANGLE (LARGE CONDUCTORS)

DATE
9-22-11
DWN. BY
J. Shevill
DWG
VC111R

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VC1.11R

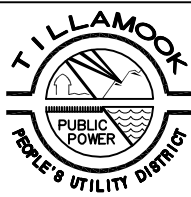


Pole Top Pin Assembly

RAPTOR FRIENDLY

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a	6 Insulator, pin type	f	4 Pin, crossarm, steel
b	2 Pin, pole top, 20"	g	2 Crossarm, 3 3/4" x 4 3/4" x 10'-0"
c	3 Bolt, machine, 5/8 x req'd length	n	3 Bolt, double arming, 5/8" x req'd length
c	4 Bolt, machine, 1/2" x 6"	cu	2 Brace, wood, 60" span (1 set)
d	1 Washer, curved 3" x 3"	da	1 Bracket, insulated
d	10 Washer, square 2 1/4"	ek	* Locknuts

* As required
Required length

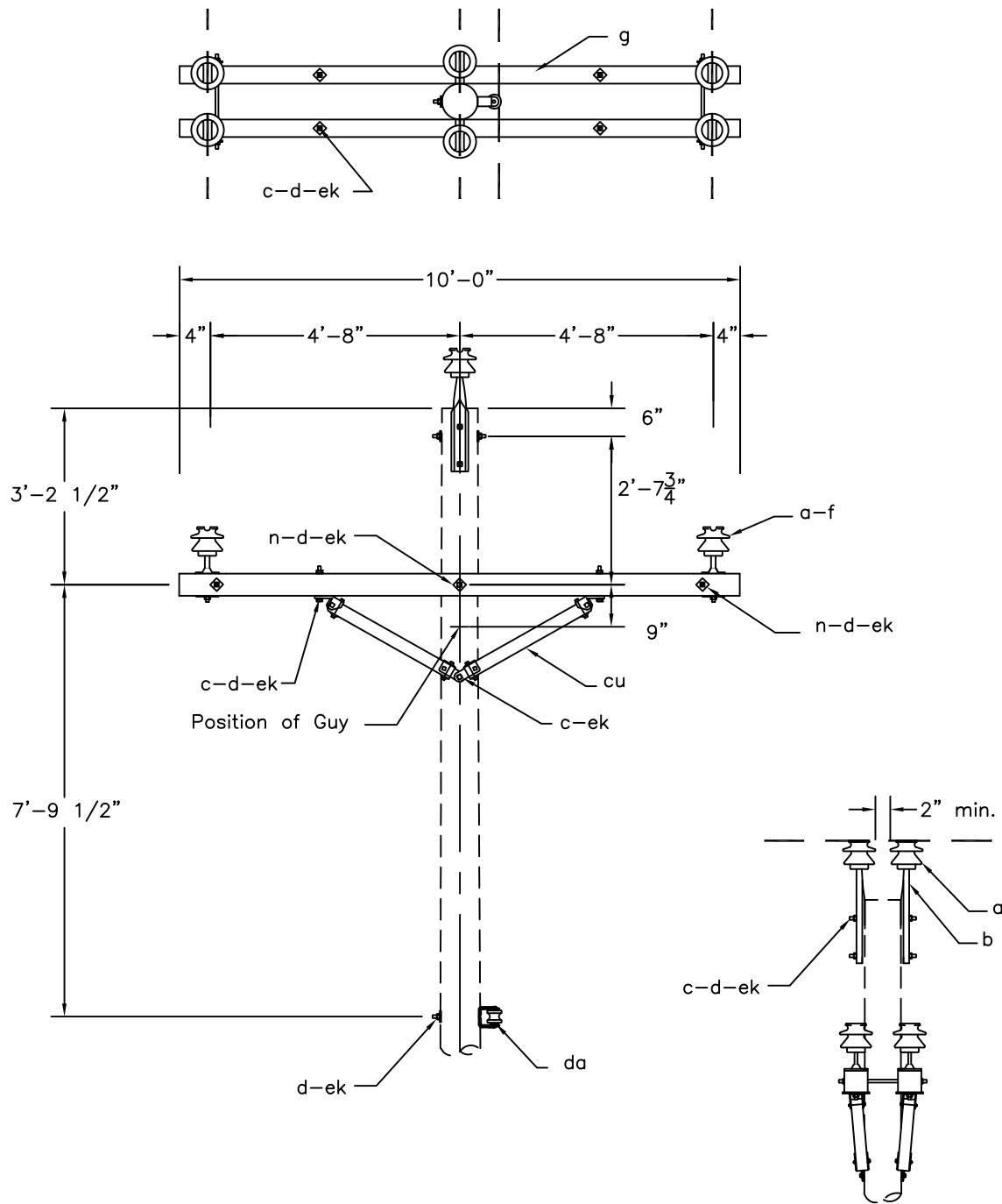


RAPTOR FRIENDLY CONSTRUCTION - 14.4/24.9-kV.
THREE-PHASE CROSSARM CONSTRUCTION-DOUBLE PRIMARY SUPPORT
0° TO 5° ANGLE (LARGE CONDUCTORS)

DATE
7-02-15
DWN. BY
J Broad
DWG
VC221LXR

TILLAMOOK P. U. D.
OREGON 24 TILLAMOOK

VC2.21LXR

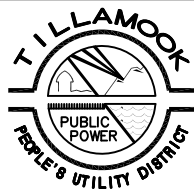


RAPTOR FRIENDLY

Pole Top Pin Assembly

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
a 6	Insulator, pin type	f 4	Pin, crossarm, steel
b 2	Pin, pole top, 20"	g 2	Crossarm, 3-5/8" x 4-5/8" x 10'-0"
c 3	Bolt, machine, 5/8 x req'd length	n 3	Bolt, double arming, 5/8" x req'd length
c 4	Bolt, machine, 1/2" x 6"	cu 2	Brace, wood, 60" span (2 sets)
d 1	Washer, curved 3" x 3"	da 1	Bracket, insulated
d 10	Washer, square 2 1/4"	ek *	Locknuts

* As required
Required length

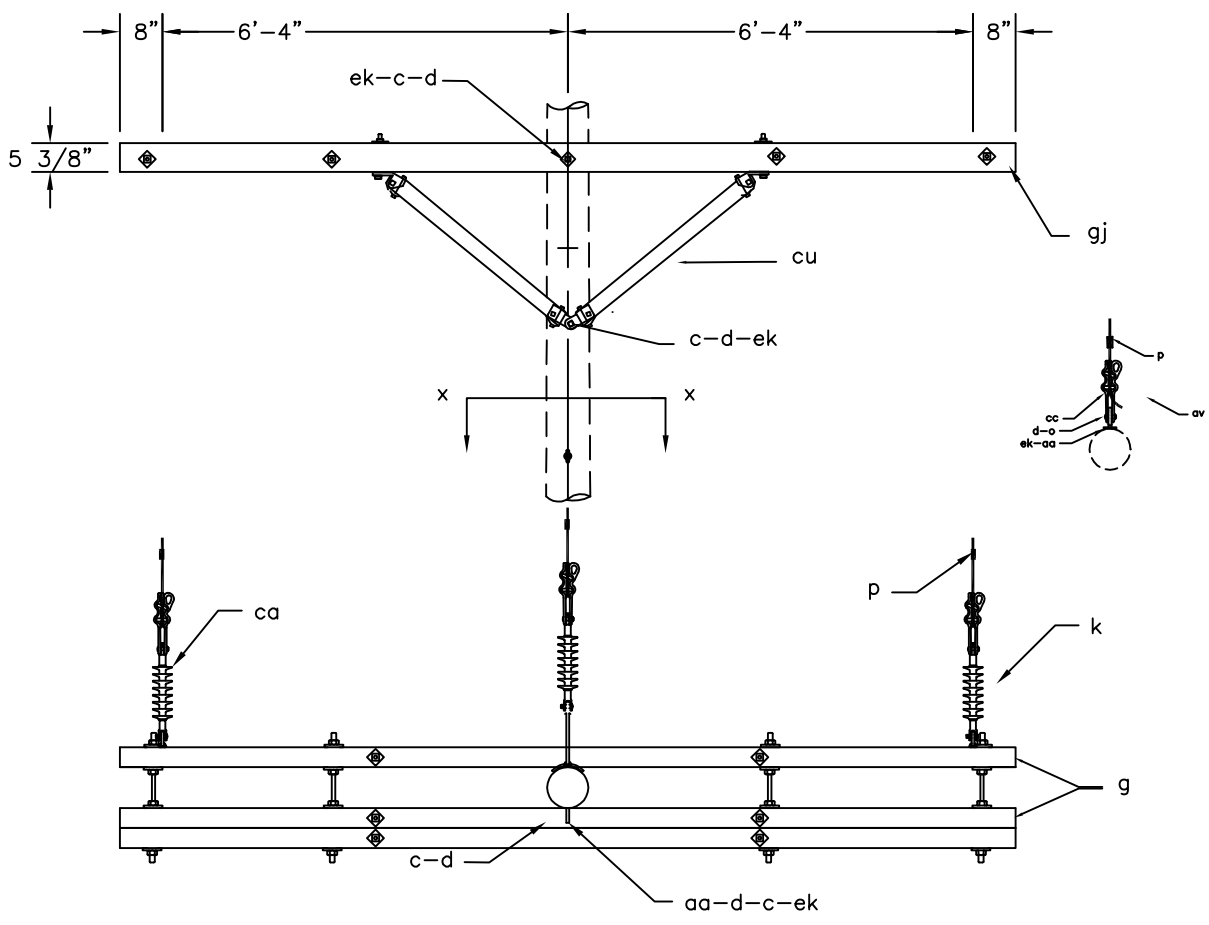


RAPTOR FRIENDLY CONSTRUCTION - 14.4/24.9-kV.
THREE-PHASE CROSSARM CONSTRUCTION-DOUBLE PRIMARY SUPPORT
0° TO 5° ANGLE (LARGE CONDUCTORS)

DATE
9-13-11
DWN. BY
J. Shevill
DWG
VC221R

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VC2.21R



ITEM	MATERIAL	VC5-314
c	Bolt, machine, 3/4" x req'd length	2
d	Washer, curved 3" x 3"	4
d	Washer, Square, 3"	2
k	Insulator, polymer-35 kV	3
o	Bolt, eye, 5/8" x req'd length	1
c	Bolt, machine, 5/8" x req'd length	1
p	Connectors	*
aa	Nut, eye, 3/4"	1
aa	Nut, eye, 5/8"	1
av	Jumpers and leads	#
ca	Deadend assembly, primary	3
cc	Deadend assembly, neutral	1
ek	Locknuts	*
gj	14' crossarm deadend assembly	3

* As required
Required Length

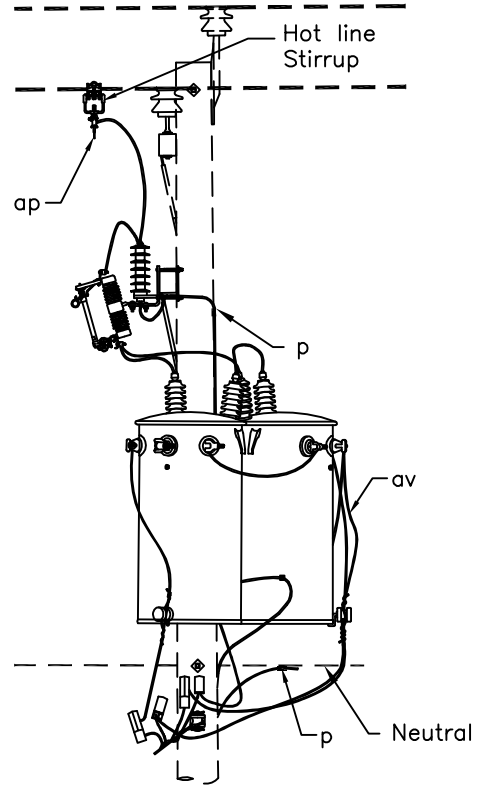
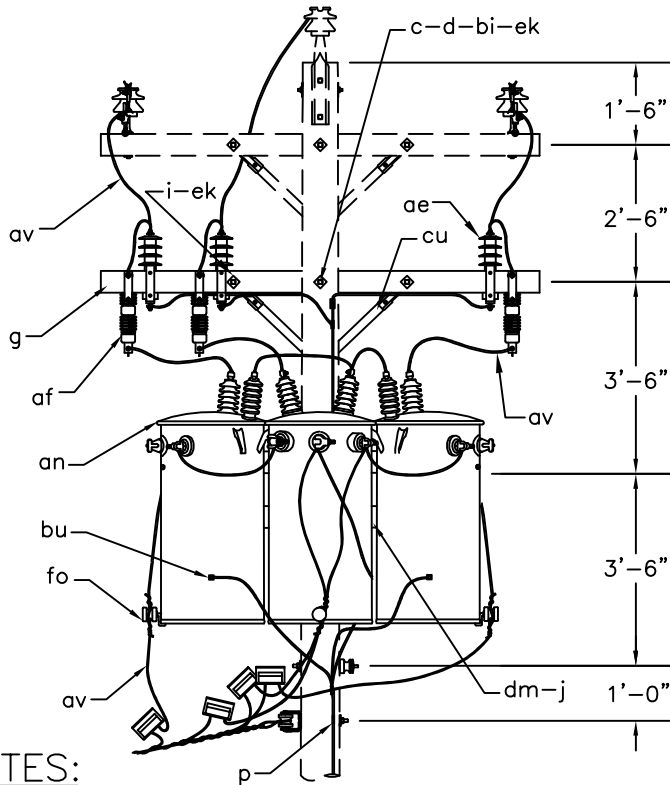


14.4/24.9-KV.
3Ø SINGLE DEADEND ASSEMBLY - TRIPLE CROSSARM

DATE
8-18-14
DWN. BY
J. Aman
DWG NAME
vc5-14

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VC5.314

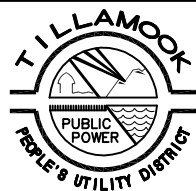


NOTES:

1. Designate VG3.1AGX for crossarm mounted cutout.
2. Designate VG3.1AX for crossarm mounted cutout and arrester.
3. Specify kVA and voltage of transformer.
4. Transformers are to be stainless steel.
5. All secondary connectors will be approved before use.
6. 3/4" machine bolts will be used when transformer is bigger than 75 kVA.

ITEM	MATERIAL	VG3.1AGX	VG3.1AX
c	Bolt, machine, 3/4" x req'd length	1	1
c	Bolt, machine, 5/8" x req'd length	1	1
d	Washer, square 2 1/4"	1	1
d	Washer, curved 3" x 3"	1	1
g	Crossarm, 3 3/4" x 4 3/4" x 8'-0"	1	1
i	Bolt, carriage	2	2
j	Screw, lag, 1/2" x 4"	2	2
p	Connectors, (see note 5)	*	*
ae	Arrester, polymer - 18 kV (Ohio Brass 213-615-50-65)	0	3
af	Cutout LBC 100 amp heavy duty (S&C)	3	3
an	Transformers (see notes 3 & 4)	*	*
ap	Connectors, hot tap (small)	3	3
av	Jumpers, #4 insulated stranded copper	#	#
av	Jumpers, #6 insulated stranded copper	#	#
bi	Pole gain	1	1
bu	Transformer, ground lug, connector	3	3
cu	Brace, wood 28" (1 set)	1	1
dm	Bracket, transformer, cluster mount	1	1
ek	Locknuts	*	*
fo	Transformer secondary bracket, insulated	3	3
	Hot line stirrup connectors	3	3

* As required
Required length

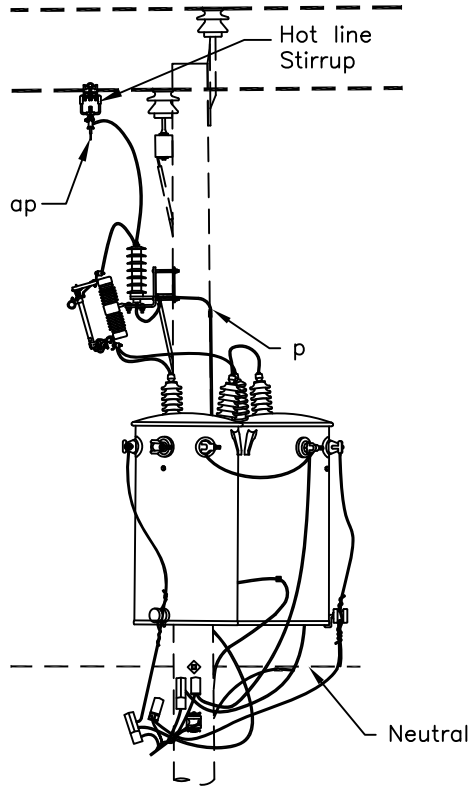
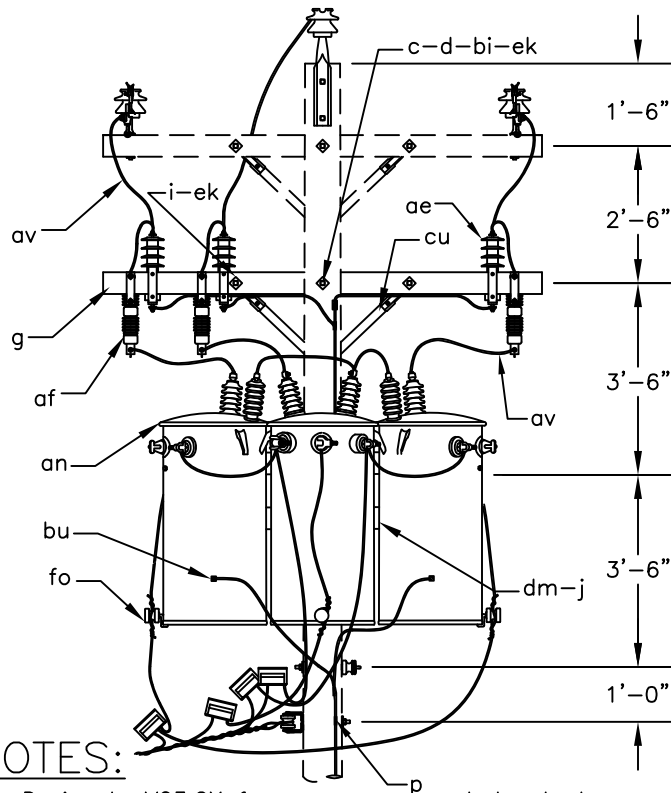


THREE TRANSFORMERS, CLUSTER MOUNTED
UNGROUND WYE PRIMARY-GROUNDED DELTA SECONDARY
FOR 240/120 OR 480/240V POWER LOAD

DATE
4-24-01
DWN. BY
J Penney
DWG NAME
vg31x

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VG3.1AGX
VG3.1AX

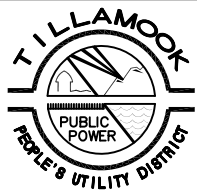


NOTES:

1. Designate VG3.2X for crossarm mounted cutout.
2. Designate VG3.2AX for crossarm mounted cutout and arrester.
3. Specify voltage and kVA of transformers.
4. Transformers are to be stainless steel.
5. All secondary connectors will be approved before use.
6. 3/4" machine bolts will be used when transformer is bigger than 75 kVA.

ITEM	MATERIAL	VG3.2X	VG3.2AX
c	Bolt, machine, 5/8" x req'd length	1	1
c	Bolt, machine, 3/4" x req'd length - see note 6	1	1
d	Washer, square 2 1/4"	1	1
d	Washer, curved 3" x 3"	1	1
g	Crossarm, 3 3/4" x 4 3/4" x 8'-0"	1	1
i	Bolt, carriage	2	2
j	Screw, lag, 1/2" x 4"	1	1
p	Connectors - see note 5	*	*
ae	Arrester, polymer - 18 kV (Ohio Brass 213-615-50-65)	0	3
af	Cutout LBC 100 amp heavy duty (S&C)	3	3
an	Transformers - see notes 3 & 4	*	*
ap	Connector, hot tap (small)	3	3
av	Jumpers, #4 insulated stranded copper	#	#
av	Jumpers, #6 insulated stranded copper	#	#
bi	Pole gain	1	1
bu	Transformer, ground lug, connector	3	3
cu	Brace, wood 28" (1 set)	1	1
dm	Bracket, transformer, cluster mount	1	1
ek	Locknuts	*	*
fo	Transformer secondary bracket, insulated	3	3
	Hot line stirrup connectors	3	3

* As required
Required length

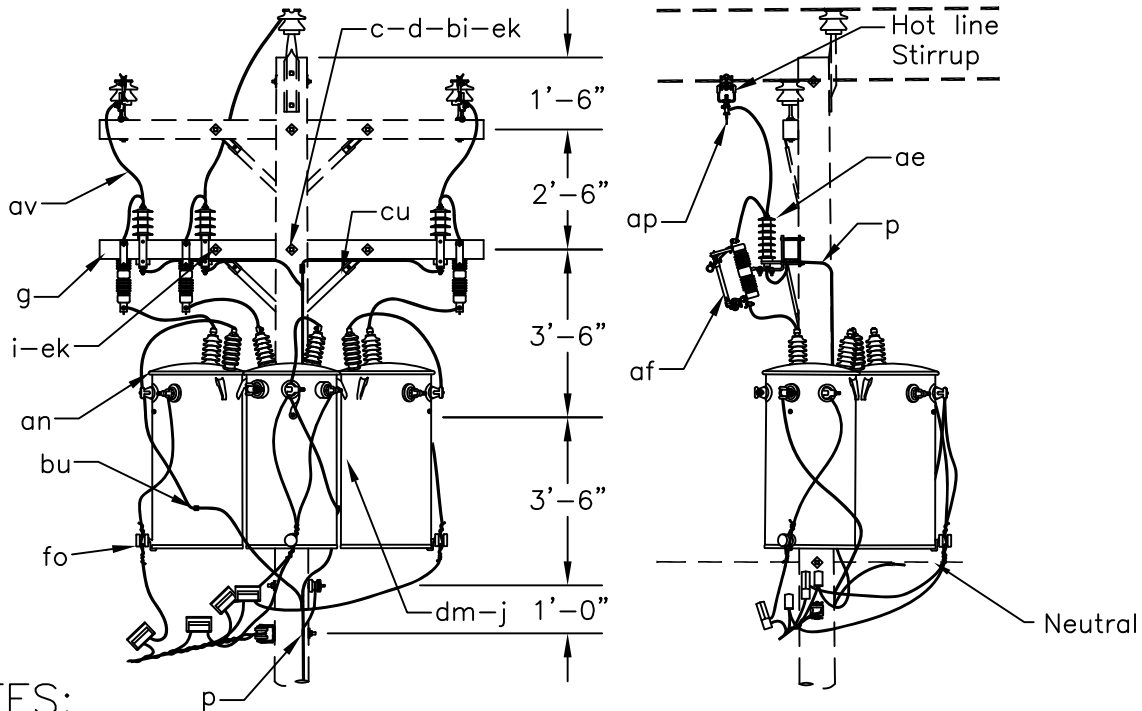


THREE TRANSFORMERS, CLUSTER MOUNTED
UNGROUND WYE PRIMARY - THREE WIRE SECONDARY
FOR 240 OR 480V POWER LOADS

DATE
6-22-01
DWN. BY
J. Penney
DWG. NAME
vg32x

TILLAMOOK P. U. D.
OREGON 24 TILLAMOOK

VG3.2X
VG3.2AX



NOTES:

1. Designate VG3.3GX for crossarm mounted cutout.
2. Designate VG3.3AGX for crossarm mounted cutout and arrester.
3. Specify kVA and voltage of transformer.
4. Transformer is to be stainless steel.
5. All secondary connectors will be approved before use.
6. 3/4" Machine bolts will be used when transformer is bigger than 75 kVA.

ITEM	MATERIAL	VG3.3GX	VG3.3AGX
c	Bolt, machine, 5/8" x req'd length	1	1
c	Bolt, machine, 3/4" x req'd length - see note 6	1	1
d	Washer, square 2 1/4"	1	1
d	Washer, curved 3" x 3"	1	1
g	Crossarm, 3 3/4" x 4 3/4" x 8'-0"	1	1
i	Bolt, carriage	2	2
j	Screw, lag, 1/2" x 4"	2	2
p	Connectors - see note 5	*	*
ae	Arrester, polymer - 18 kV (Ohio Brass 213-615-50-65)	0	3
af	Cutout LBC 100 amp heavy duty (S&C)	3	3
an	Transformers - see notes 3 & 4	*	*
ap	Connector, hot tap (small)	3	3
av	Jumpers, #4 insulated stranded copper	#	#
av	Jumpers, #6 insulated stranded copper	#	#
bi	Pole gain	1	1
bu	Transformer, ground lug, connector	3	3
cu	Brace, wood 28" (1 set)	1	1
dm	Bracket, transformer, cluster mount	1	1
ek	Locknuts	*	*
fo	Transformer secondary bracket, insulated	3	3
	Hot line stirrup connectors	3	3

* As required
Required length

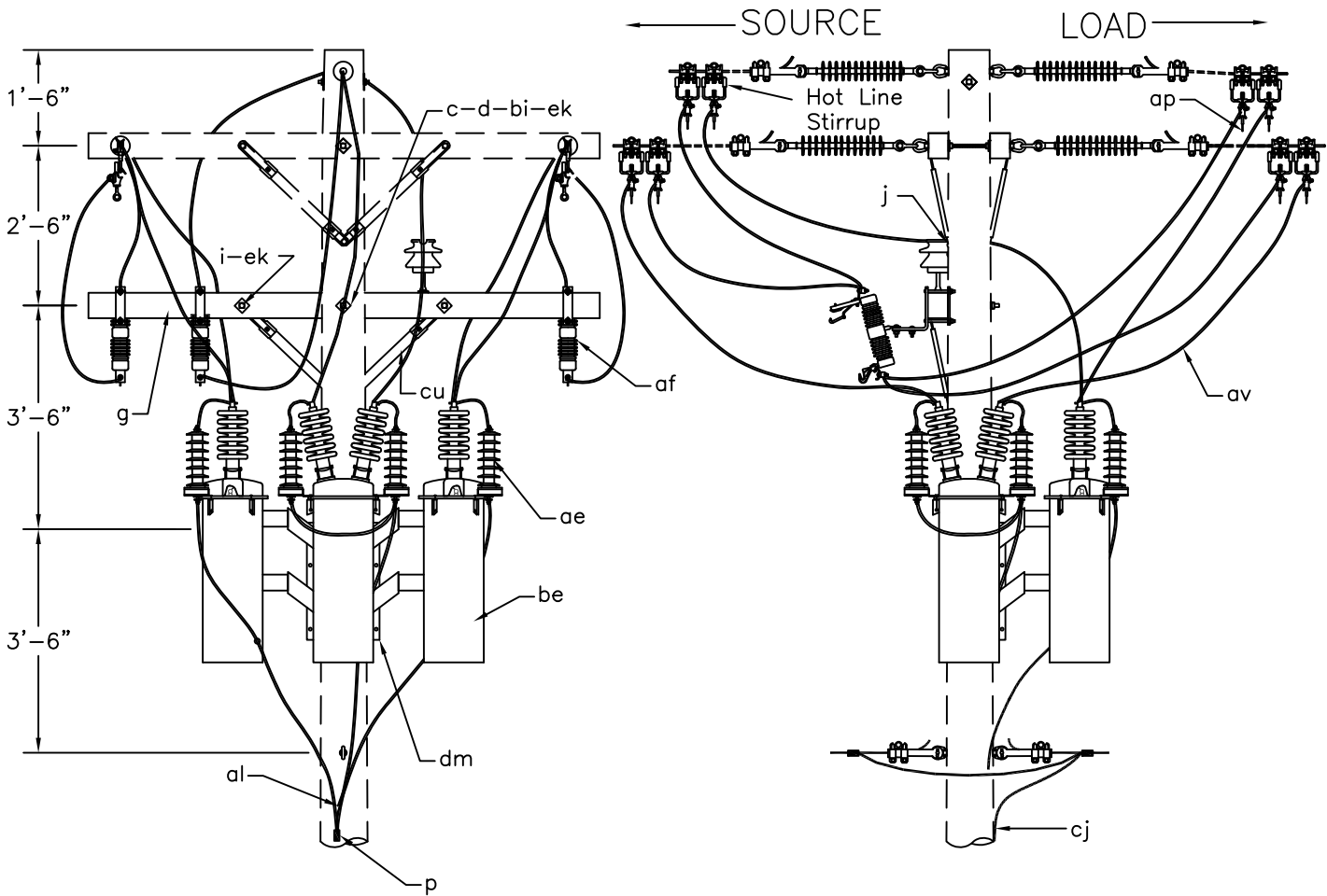


THREE TRANSFORMERS, CLUSTER MOUNTED
GROUNDED WYE PRIMARY - GROUNDED WYE SECONDARY
FOR 208/120 OR 480/277V POWER LOADS

DATE
6-22-01
DWN. BY
J Penney
vc111lx
vg33gx

TILLAMOOK P. U. D.
OREGON 24 TILLAMOOK

VG3.3GX
VG3.3AGX



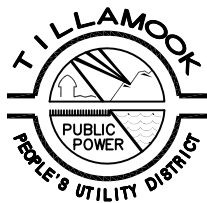
NOTES:

SOURCE: FRONT LOAD: BACK

1. Specify circuit recloser type
2. Specify coil size of circuit recloser
3. Specify operating data and sequence of circuit recloser
4. Specify bypass fuse size
5. The recloser terminal bushing connected directly to the coil should be connected to the source.
6. Secondary connectors to be approved before use.

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
d	1 Washer, square 2 1/4"	av	# Jumper, #4 insulated stranded copper
d	1 Washer, curved 3" x 3"	av	# Jumper, #6 insulated stranded copper
g	1 Crossarm, 3 3/4" x 4 3/4" x 8'-0"	be	3 Circuit recloser w/ control
i	2 Bolt, carriage	bi	1 Pole gain
j	2 Lag screw 1/2" x 4"	dm	1 Bracket, transformer, cluster
p	* Connectors	cu	1 Brace, wood 28" (1 set)
ae	6 Arrester, polymer - 18 kV (Ohio brass 213-615-50-65)	ek	* Locknuts
af	3 Cutout LBC 100 amp heavy duty (S&C)	cj	# Ground wire, #2 stranded copper
ap	12 Connector, hot tap (small)		12 Hot line stirrup connectors

* As required
Required length

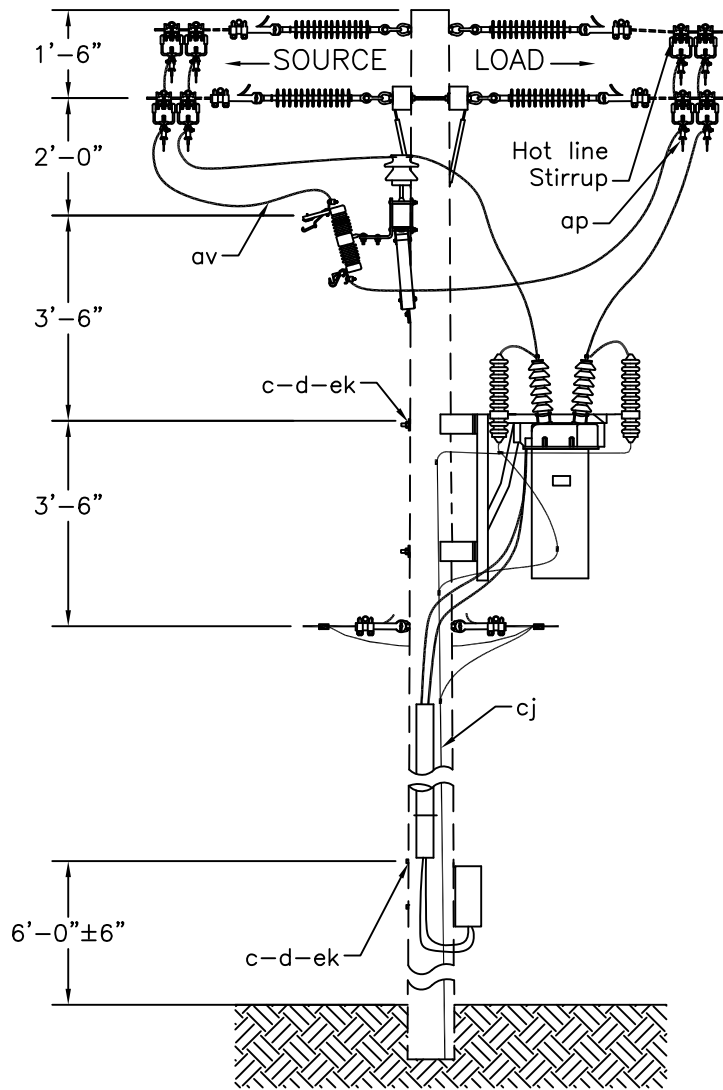
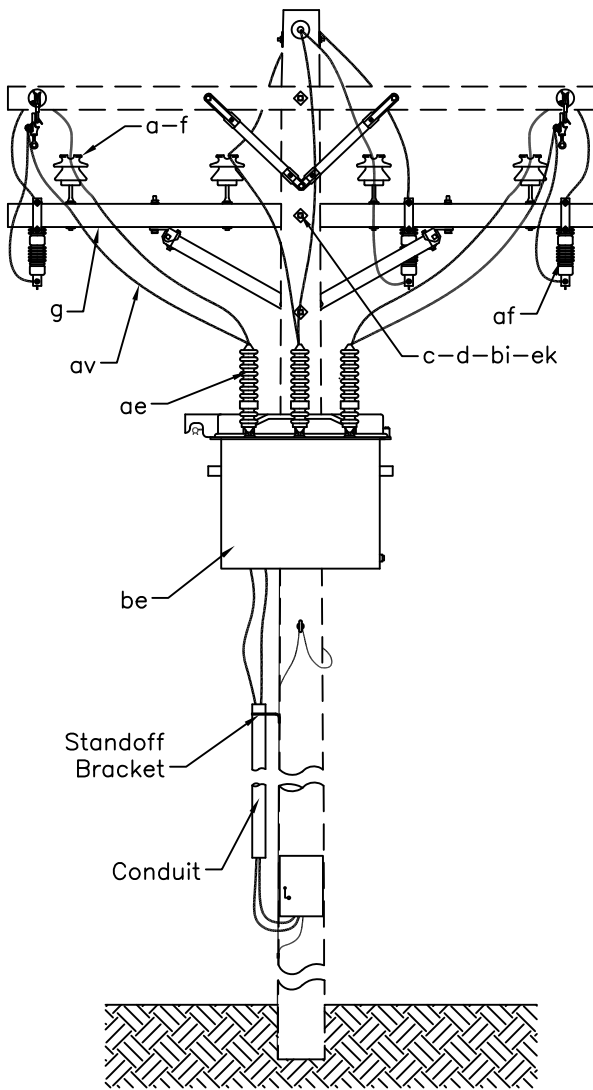


THREE SINGLE-PHASE
CIRCUIT RECLOSERS

DATE
6-22-01
DWN. BY
J. Penney
DWG NAME
vr31x

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VR3.1X

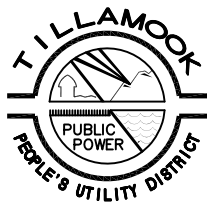


NOTES:

1. Show size and amount of PVC conduit in parenthesis following the specification number.
e.g. VR3.3X (20' PVC 3")
2. Specify circuit recloser type.
3. Specify operating data and sequence for circuit recloser.
4. Specify bypass fuse size.
5. Secondary connectors to be approved before use.

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
c 2	Bolt, machine, 3/4" x req'd length	ap 12	Connector, hot tap (large)
c 4	Bolt, machine, 5/8" x req'd length	av #	Jumpers, #4 insulated stranded copper
c 2	Bolt, machine, 1/2" x 6"	av #	Jumpers, #6 insulated stranded copper
g 1	Crossarm, 3 3/4" x 4 3/4" x 10'-0"	be 1	Three-phase circuit recloser w/ control
d 1	Washer, square 2 1/4"	bi 1	Pole gain
d 4	Washer, curved 3" x 3"	a 4	Insulator, pin type
cj #	Ground wire, #2 stranded copper	cu 1	Brace, wood 60" (1 set)
f 4	Pin, crossarm, steel 5/8"x14"	ek *	Locknuts
ae 6	Arrester, polymer - 18 kV (Ohio brass 213-615-50-65)	#	Cable, #12 copper type SO
af 3	Cutout LBC 100 amp heavy duty (S&C)	#	3" conduit PVC schedule 40
p *	Connectors	6	Hot line stirrup connectors
		3	Standoff bracket, kindorf type w/ clamps

* As required
Required length

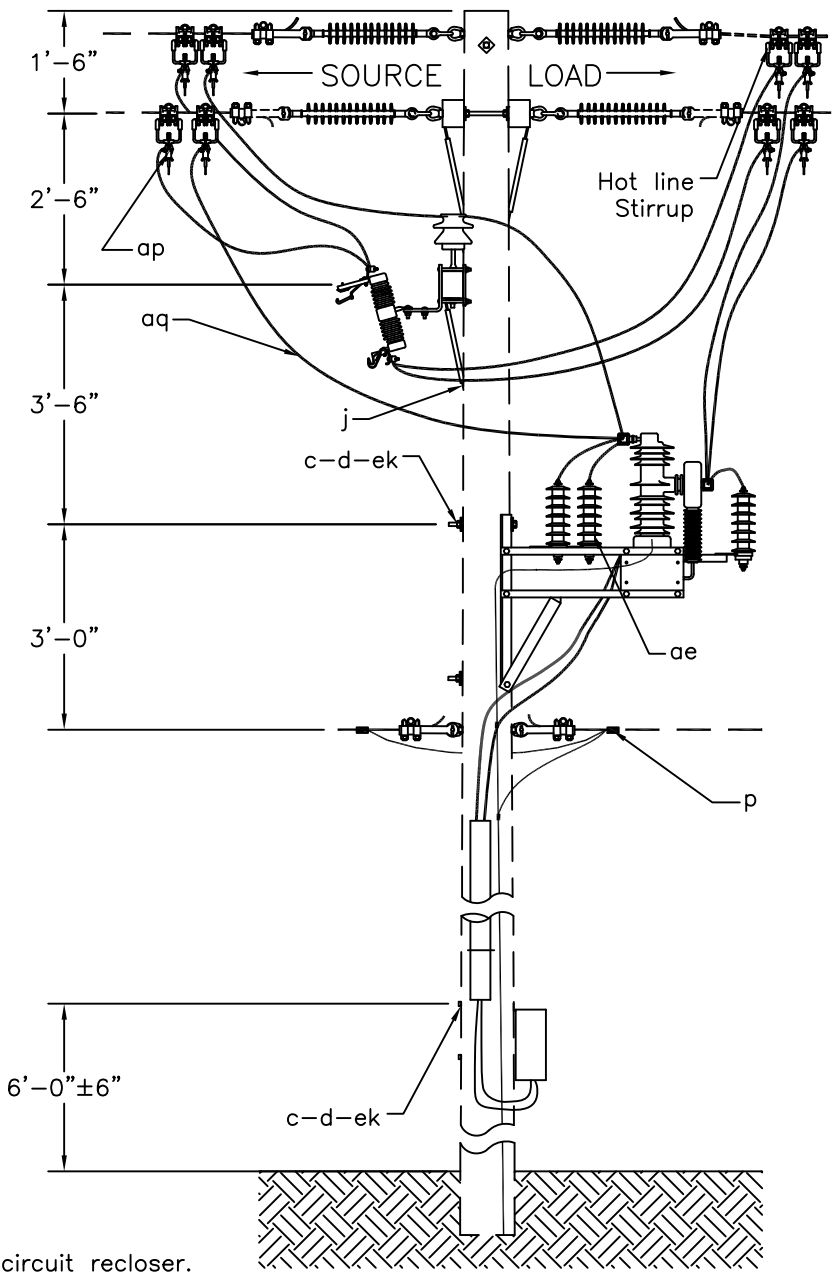
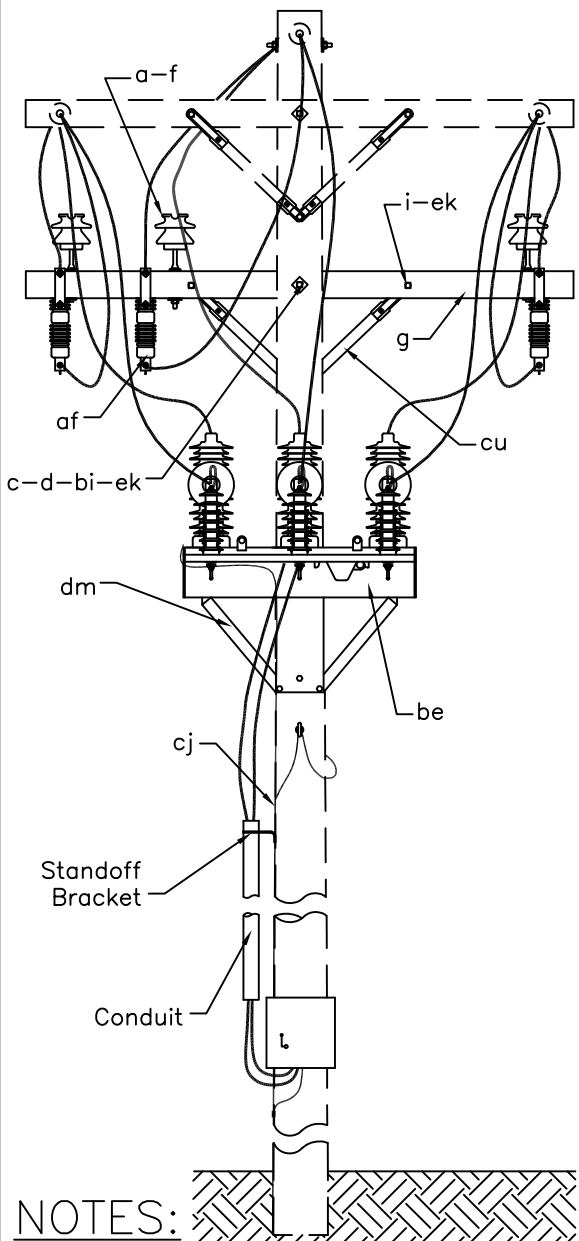


**THREE-PHASE
CIRCUIT RECLOSER**

DATE
6-22-01
DWN. BY
J. Penney
DWG NAME
vr33x

**TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK**

VR3.3X

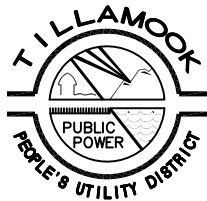


NOTES:

1. Specify operating data and sequence of circuit recloser.
2. Specify bypass fuse size.
3. Secondary connectors to be approved before use.

ITEM NO.	MATERIAL	ITEM NO.	MATERIAL
i	2 Bolt, carriage, 3/8" x req'd length	a	3 Insulator, pin type
c	3 Bolt, machine, 5/8" x req'd length	av	# Jumper, #4 insulated stranded copper
d	1 Washer, square 2 1/4"	av	# Jumper, #6 insulated stranded copper
d	3 Washer, curved 3" x 3"	be	1 Three-phase circuit recloser w/ control
g	1 Crossarm, 3 3/4" x 4 3/4" x 8'-0"	bi	1 Pole gain
p	* Connectors	dm	1 Bracket, K Nova recloser
ae	6 Arrester, polymer - 18 kV (Ohio brass 213-615-50-65)	cu	1 Brace, wood 28" (1 set)
f	3 Pin, crossarm, steel 5/8" x 14"	ek	* Locknuts
	# 3" conduit PVC schedule 40	j	1 Screw, lag, 1/2" x 4"
af	3 Cutout LBC 100 amp heavy duty (S&C)		# Cable, #12 copper type SO
ap	12 Connector, hot tap (large)	12	Hot line stirrup connectors
		3	Standoff bracket, kindorf type w/ clamps

* As required
Required length

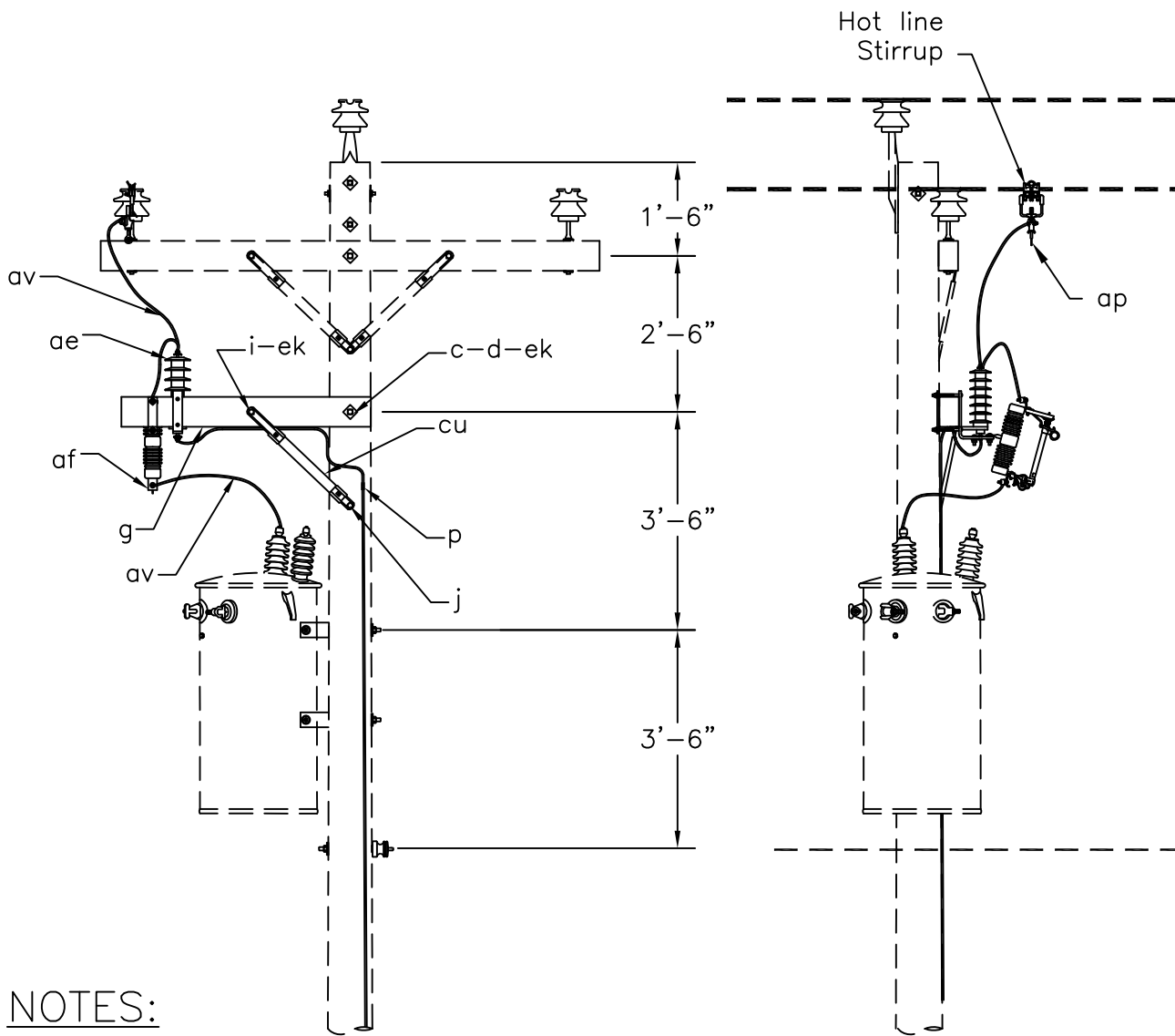


**K NOVA THREE-PHASE
CIRCUIT RECLOSER**

DATE
6-22-01
DWN. BY
J. Penney
DWG NAME
vr34x

**TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK**

VR3.4X

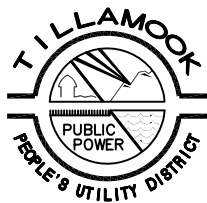


NOTES:

1. Designate VS1.12X if no arrester is required.
2. Designate VS1.12AX if arrester is required.
3. Secondary connectors to be approved before use.

ITEM	MATERIAL	VS1.12X	VS1.12AX
c	Bolt, machine, 5/8" x req'd length	1	1
d	Washer, square 2 1/4"	1	1
d	Washer, curved 3" x 3"	1	1
g	Crossarm, 3 3/4" x 4 3/4" x 4'-0"	1	1
i	Bolt, carriage 3/8" x 4 1/2"	1	1
j	Screw, lag, 1/2" x 4"	1	1
p	Connectors - see note 3	*	*
ae	Arrester, polymer - 18 kV (Ohio Brass 213-615-50-65)	0	1
av	Jumpers, #4 insulated stranded copper	#	#
av	Jumpers, #6 insulated stranded copper	#	#
ap	Connector, hot tap (small)	1	1
af	Cutout LBC 100 amp heavy duty	1	1
cu	Brace, wood, 28" span	1	1
ek	Locknuts	*	*
	Hotline stirrup connectors	1	1

* As required
Required length

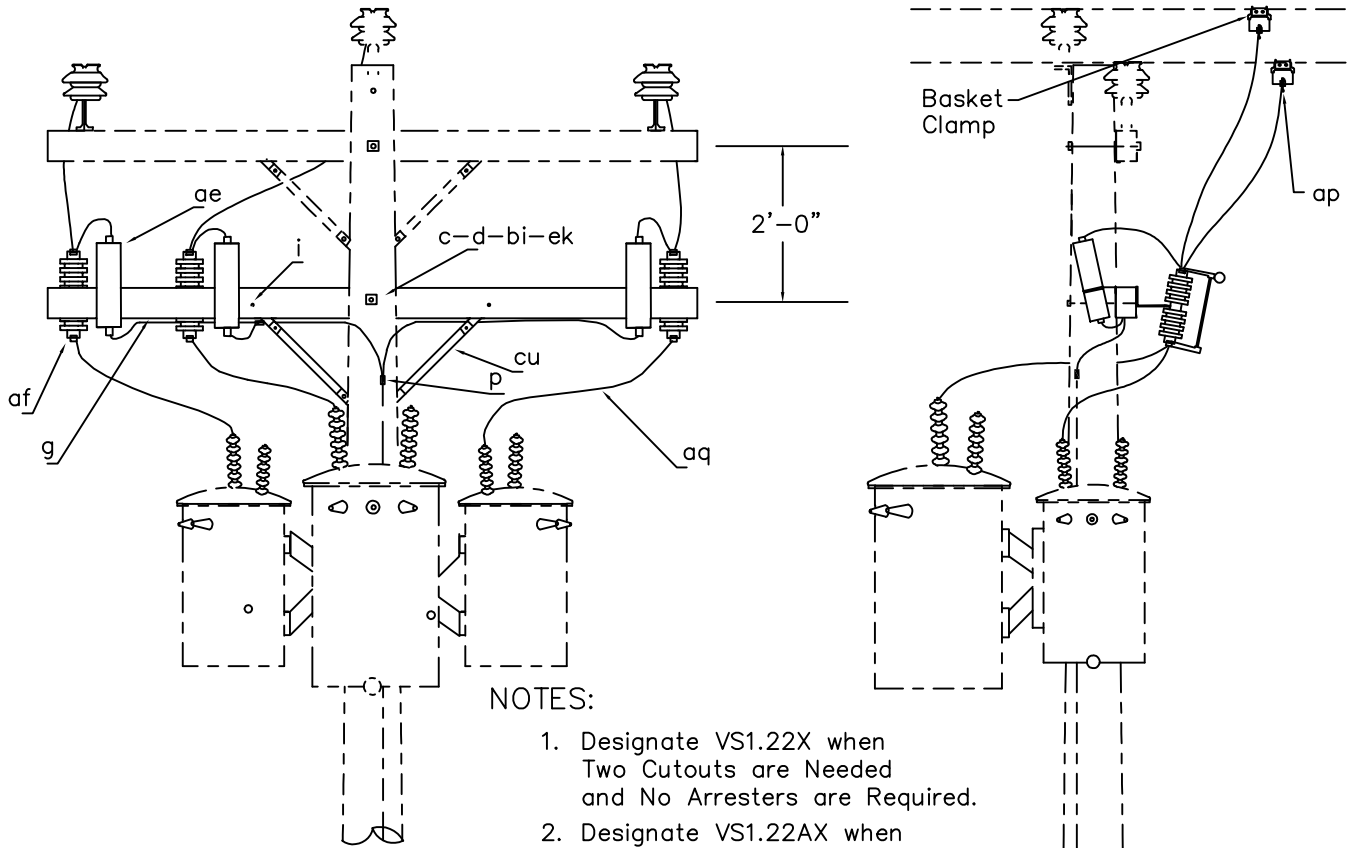


**CUTOUT ARM ASSEMBLY
4 FOOT CROSSARM**

DATE
6-22-01
DWN. BY
T Penney
DWG NAME
vs112x

**TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK**

VS1.12X
VS1.12AX

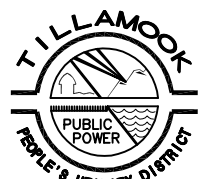


NOTES:

1. Designate VS1.22X when Two Cutouts are Needed and No Arresters are Required.
2. Designate VS1.22AX when Two Cutouts are Needed and Two Arresters are Required.
3. Designate VS1.22X when Three Cutouts are Needed and No Arresters are Required.
4. Designate VS1.22AX when Three Cutouts are Needed and Three Arresters are Required.

ITEM	MATERIAL	VS1.22X	VS1.22AX	VS1.32X	VS1.32AX
c	Bolt, Machine, 5/8" x Req'd Length	1	1	1	1
d	Washer, Square 2 1/4"	2	2	2	2
g	Crossarm, 3 3/4" x 4 3/4" x 8'-0"	1	1	1	1
i	Bolt, Carriage	2	2	2	2
j	Lag Screw 1/2" x 4"	1	1	1	1
p	Connectors	as req'd	as req'd	as req'd	as req'd
ae	Arrester 18-KV	0	2	0	3
af	Cutout LBC 100 Amp Heavy Duty	2	2	3	3
ap	Connector, Hot Tap (Small)	2	2	3	3
av	Jumpers, Insulated Stranded Copper	as req'd	as req'd	as req'd	as req'd
cu	Brace, Wood 28"	2	2	2	2
ek	Locknut	1	1	1	1
	Basket Clamp	2	2	3	3

* As required
Required Length

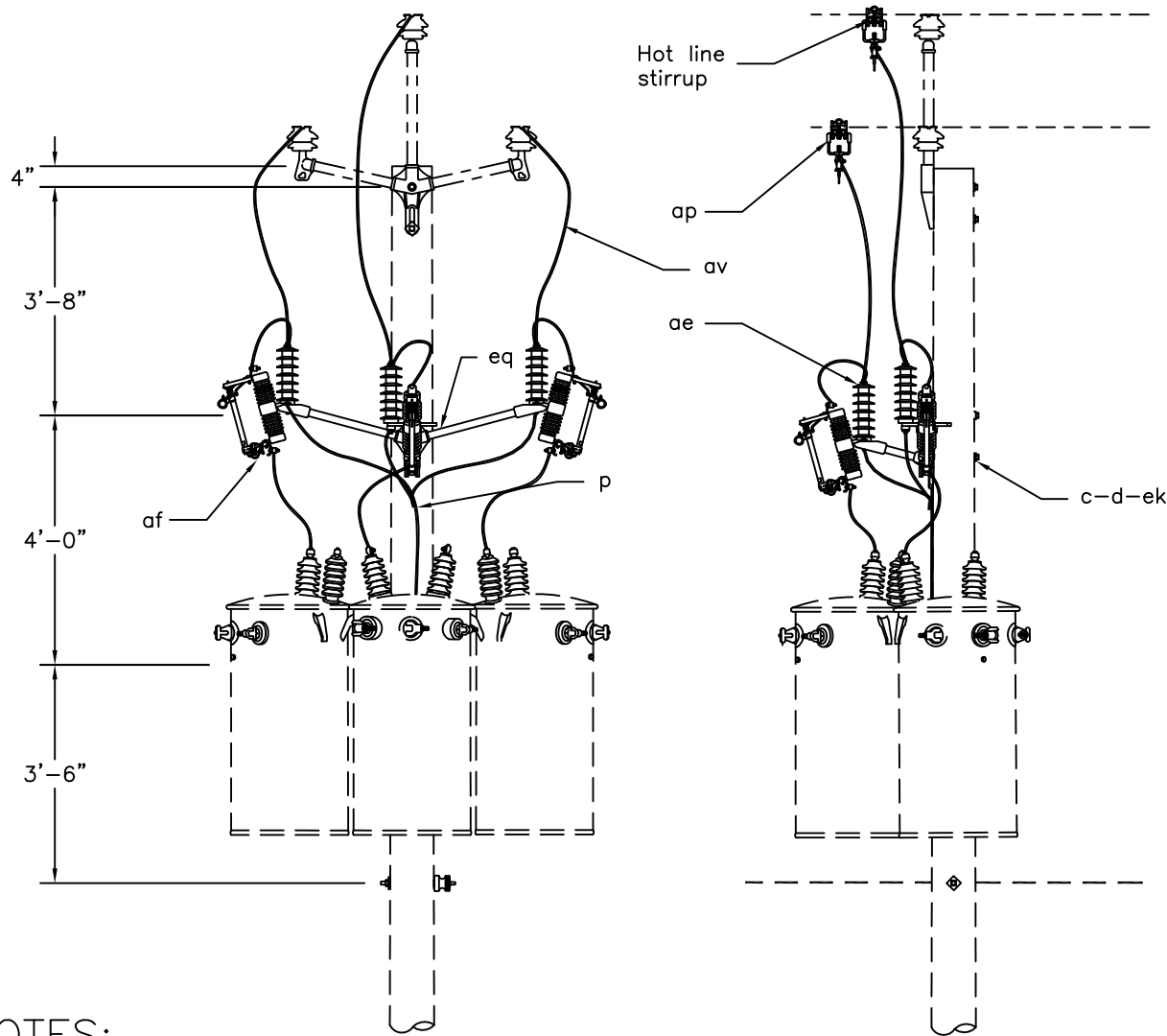


CUTOUT ARM ASSEMBLY
8 FOOT CROSSARM

DWN. BY.
D. VanSant
5/9/2016

TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VS1.22X
VS1.22AX
VS1.32X
VS1.32AX

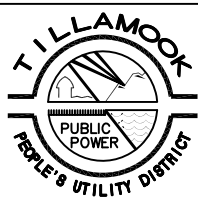


NOTES:

1. Designate VS1.23X when two cutouts are needed and no arresters are required.
2. Designate VS1.23AX when two cutouts are needed and two arresters are required.
3. Designate VS1.33X when three cutouts are needed and no arresters are required.
4. Designate VS1.33AX when three cutouts are needed and three arresters are required.
5. Secondary connectors to be approved before use.

ITEM	MATERIAL	VS1.23X	VS1.23AX	VS1.33X	VS1.33AX
c	Bolt, machine, 5/8" x req'd length	2	2	2	2
d	Washer, curved 3" x 3"	2	2	2	2
eq	Bracket, fiberglass cutout & arrester mtg	1	1	1	1
p	Connectors - see note 5	*	*	*	*
ae	Arrester, polymer - 18 kV (Ohio Brass 213-615-50-65)	0	2	0	3
af	Cutout LBC 100 amp heavy duty (S&C)	2	2	3	3
ap	Connector, hot tap (small)	2	2	3	3
av	Jumpers, #4 insulated stranded copper	#	#	#	#
av	Jumpers, #6 insulated stranded copper	#	#	#	#
ek	Locknuts	*	*	*	*
	Hot line stirrup connectors	2	2	3	3

* As required
Required Length

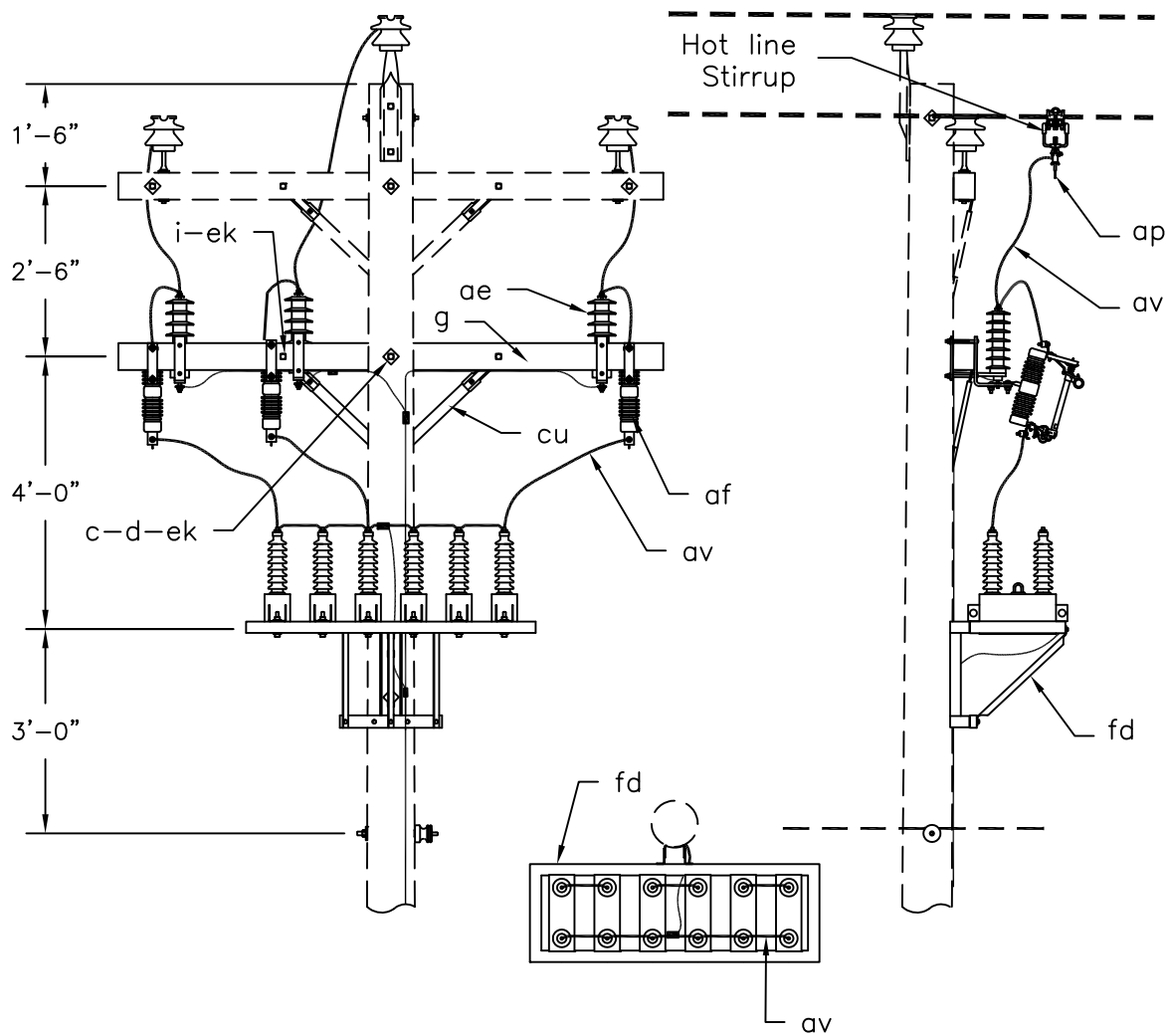


**CUTOUT ARM ASSEMBLY
FIBERGLASS CROSSARM**

DATE
4-24-01
DWN. BY
J. Penney
DWG. NAME
VS123X

**TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK**

VS1.23X
VS1.23AX
VS1.33X
VS1.33AX



NOTES:

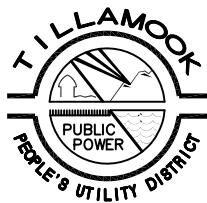
1. Specify number and KVAR required.
2. Specify insulating caps for primary terminal bushings.
3. Table is for 14.4-kV rated capacitors only
4. Care must be taken to coordinate fuse with sectionalizing plan.
5. Secondary connectors to be approved before use.

SUGGESTED FUSING TABLE:

Voltage	KVAR Connected to each Cutout...			
	100	200	300	400
7.2 kV	5	7	10	15
12.0 kV	7	15	20	25
14.4 kV	7	15	25	30

ITEM	NO.	MATERIAL	ITEM	NO.	MATERIAL
c	2	Bolt, machine, 5/8" x req'd length	p	*	Connectors - see note 5
i	1	Bolt, carriage, 3/8" x 4 1/2"	ap	12	Connector, hot tap (small)
d	1	Washer, square 2 1/4"	af	3	Cutout LBC 100 amp heavy duty (S&C)
d	1	Washer, curved 3" x 3"	fc	3	Capacitor_____KVAR each
j	1	Lag screw 1/2" x 4"	g	2	Crossarm, 3 3/4" x 4 3/4" x 8'-0"
av	#	Jumper, #4 insulated stranded copper	fd	1	Bracket, capacitor
av	#	Jumper, #6 insulated stranded copper	cu	1	Brace, wood, 28" span (1 set)
ae	6	Arrester, polymer - 18 kV, (Ohio brass 213-615-50-65)	ek	*	Locknuts
				3	Hot line stirrup connectors

* As required
Required length



14.4/24.9-kV
THREE-PHASE CAPACITOR ASSEMBLY

DATE
6-22-01
DWN. BY
J. Penney
DWG NAME
vy33x

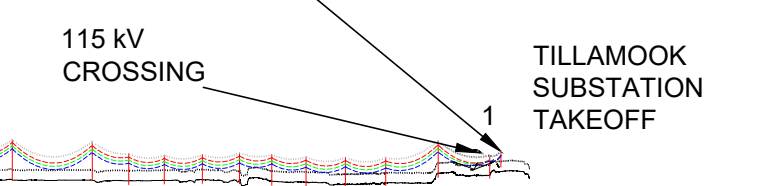
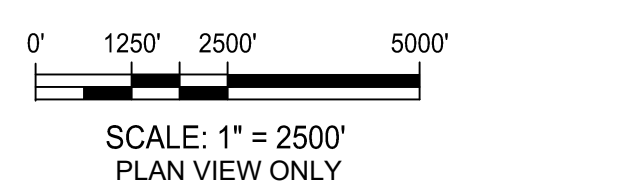
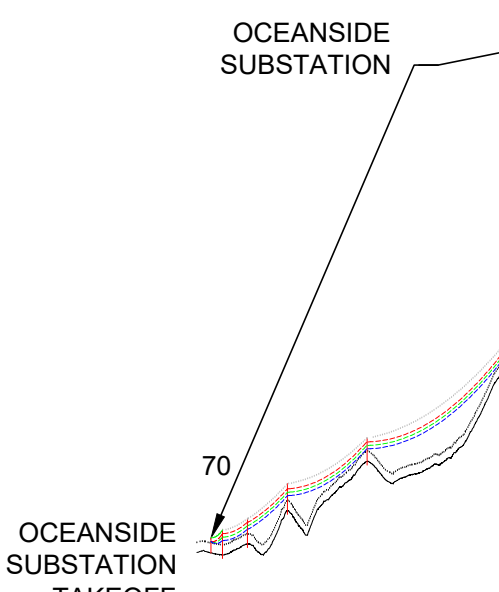
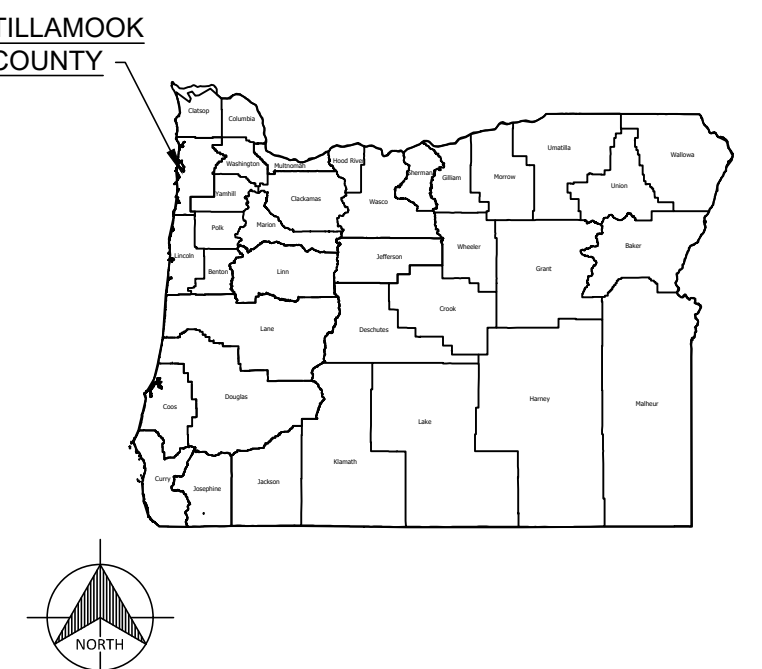
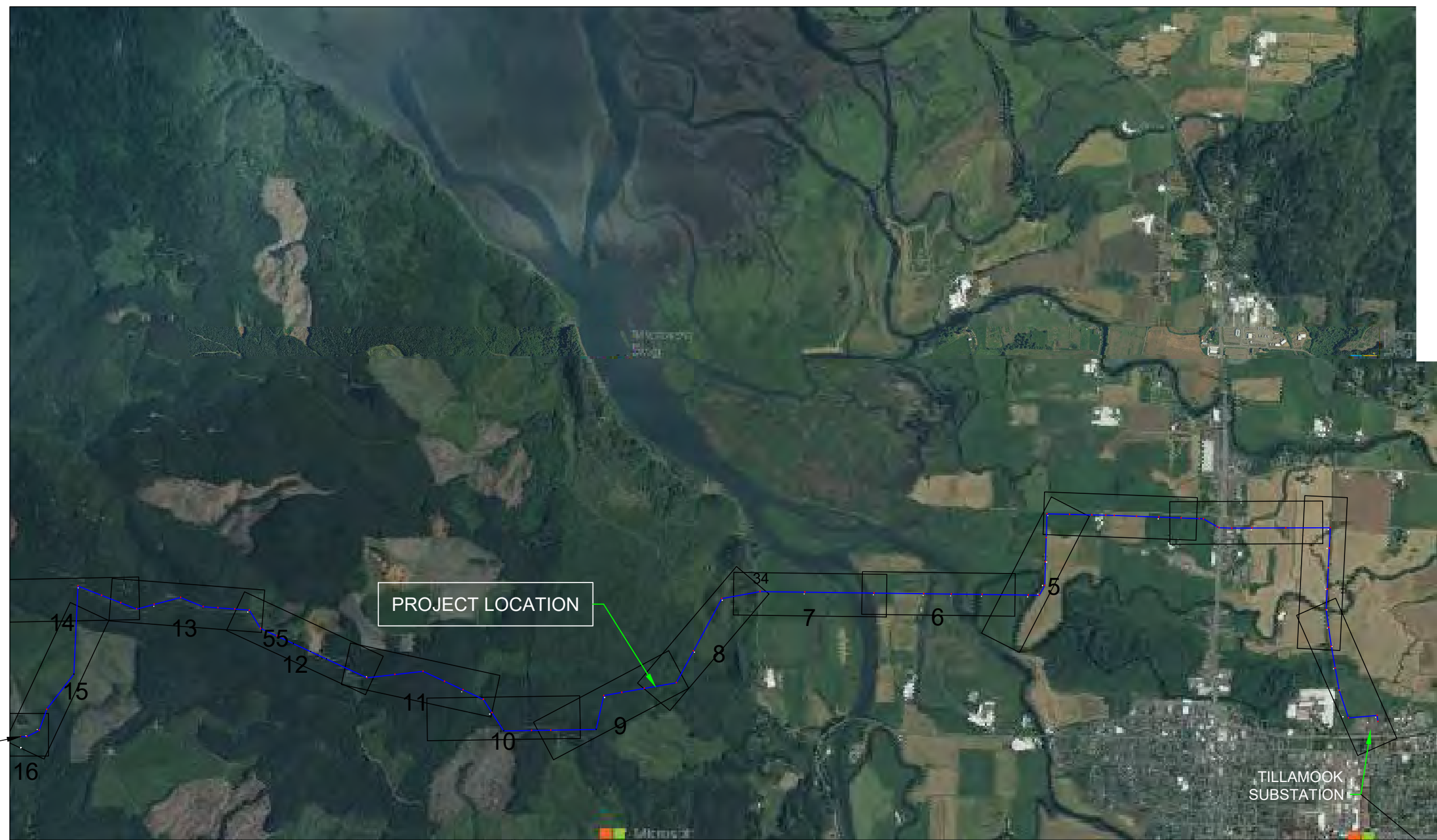
TILLAMOOK P.U.D.
OREGON 24 TILLAMOOK

VY3.3X

Appendix D – Training Log

APPLICATION OF HAWK-EYE BIRD FLIGHT DIVERTERS ON OCEANSIDE TRANSMISSION LINE PROJECT

TILLAMOOK-OCEANSIDE 115 kV OVERHEAD LINE



NOTES:

- HEIGHT, SIZE AND QUANTITY INFORMATION PROVIDED FOR REFERENCE.
- ROUTE BASED ON PROVIDED REFERENCE FILES.
- PRELIMINARY LINE DESIGN BASED ON PUBLICLY AVAILABLE LIDAR SURVEY DATA.
- SEE PLAN AND PROFILE DRAWINGS AND GOOGLE EARTH FILE FOR ADDITIONAL INFORMATION.
- CONTACT MIGRATORY BIRD PERMIT EXAMINER LOCATED IN THE USFWS REGION FOR AVIAN CONSIDERATION RECOMMENDATIONS.
- PRELIMINARY FAA MARKING AND LIGHTING SCREENING WAS COMPLETED AND NO STRUCTURES REQUIRE FAA NOTIFICATION.
- LINE DESIGN ENGINEER SHALL COORDINATE WITH SUBSTATION, LAND, CIVIL, PERMITTING, CONSTRUCTION, VEGETATION MANAGEMENT, THIRD-PARTY/Joint USE OWNERS, AND OTHER PERSONNEL REQUIRED TO COORDINATE ALL REQUIREMENTS FOR THE PROJECT. THIS SHALL INCLUDE CONDUCTOR AND COMMUNICATION CONNECTIONS AT SUBSTATIONS.
- UNIT OF MEASURE FOR SPAN LENGTHS, DISTANCES, AND ELEVATIONS IS FEET.
- CONTRACTOR MUST COMPLY WITH ALL ENVIRONMENTAL REGULATIONS DURING THE CONSTRUCTION OF THIS PROJECT.
- CONTACT LOCAL ONE CALL SYSTEM (811) FOR LOCATES BEFORE DIGGING.
- ADHERE TO ALL AGREEMENT REGULATIONS FOR ALL OVERHEAD AND UNDERGROUND CROSSINGS.
- OPGW FIBER OPTIC CABLE TO BE CONFIRMED BY ENGINEER AT TIME OF ORDER.
- SEE DESIGN BASIS DOCUMENT FOR SPECIFIC DEFLECTION REQUIREMENTS IN LEVEES.

CRITERIA:

- POLE DESIGNS SHALL HAVE A MAXIMUM POLE DEFLECTION OF 1% OF THE POLE HEIGHT ABOVE GROUND AT 60° F, NO ICE, NO WIND, AFTER CREEP. POLES SHALL HAVE A MAXIMUM POLE DEFLECTION OF 10% THE POLE HEIGHT ABOVE GROUND AT ALL REQUIRED LOAD CASES WITH OVERLOAD FACTORS (INITIAL AND AFTER CREEP).
- STRUCTURE USAGE SHALL NOT EXCEED 95% DURING DESIGN STAGE. THE INTENT OF THIS REQUIREMENT IS TO ACT AS A DESIGN BUFFER DURING POTENTIAL CHANGES DURING CONSTRUCTION.
- BROKEN WIRE LOADING SHALL BE CONSIDERED FOR ALL DEADEND STRUCTURES AND UNDER ALL LOAD CONDITIONS.
- BROKEN WIRE LOADING SHALL BE CONSIDERED FOR ALL TANGENT STRUCTURES ASSUMING ONE CABLE OR PHASE BROKEN. ALL CABLES SHALL BE CONSIDERED IN THE LOADING ANALYSIS. A 1.1 LOAD FACTOR WILL BE APPLIED TO ALL LOAD CASES.
- STRUCTURES SHALL BE DESIGNED FOR STRINGING, AND MAINTENANCE LOADS UNDER 3 PSF WIND, AND 30° F, NO ICE, INITIAL CONDITIONS. REFER TO ASCE MANUAL OF PRACTICE 74 DESCRIBING THE APPLICATION OF THESE LOADS.
- CONSTRUCTION AND MAINTENANCE INTACT LOADS SHALL INCLUDE A LOAD FACTOR OF 2.0 FOR THE WIRE VERTICAL, WIND, AND TENSION LOADS, PLUS 375 LBS (250 LBS * 1.5 LOAD FACTOR) FOR WORKER AND TOOLS.
- PULL-THROUGH STRUCTURES SHALL BE DESIGNED WITH A MINIMUM 2.0 LOAD FACTOR FOR THE WIRE VERTICAL, AND WIND LOADS, AND 1.5 LOAD FACTOR FOR WIRE TENSION LOADS.
- SNUB STRUCTURES SHALL BE DESIGNED ASSUMING ALL CONTROLLING COMBINATIONS OF PHASES/CABLES DEADENED OR SNUBBED TO GROUND ON ONE SIDE, WITH A MINIMUM 1.5 LOAD FACTOR FOR THE WIRE VERTICAL, WIND, AND TENSION LOADS.

REFERENCES:

- RUS BULLETIN 1724E-200, DESIGN MANUAL FOR HIGH VOLTAGE TRANSMISSION LINES.
- NATIONAL ELECTRICAL SAFETY CODE C2-2017 (NESC 2017).
- ASCE MANUALS AND REPORTS ON ENGINEERING PRACTICE No. 74, GUIDELINES FOR ELECTRICAL TRANSMISSION LINE STRUCTURAL LOADING.
- IEEE 1313.2-1999: IEEE GUIDE FOR THE APPLICATION OF INSULATION COORDINATION.
- USGS LIDAR POINT CLOUD (LPC) OR_NORTHCOAST_2008-2009_002015 2014-09-11 LAS
- USGS LIDAR POINT CLOUD (LPC) OR_TILLAMOOK_ODF_2007_000497 2014-09-16 LAS

MANUFACTURER ABBREVIATIONS:

MPS = MACLEAN POWER SYSTEMS
 HPS = HUBBELL POWER SYSTEMS
 (AND) = ANDERSON (FGR) = FARGO
 (OHBR) = OHIO BRASS (CHN) = CHANCE
 AFL = ALCOA-FUJIKURA
 HB = HUGHES BROTHERS
 PLP = PREFORMED LINE PRODUCTS
 ALFRM = ALUMIFORM
 SWIRE = SOUTHWIRE
 ERICO = ERICO
 SEIM = SEIMENS
 ECP = EARTH CONTACT PRODUCTS

OTHER ABBREVIATIONS:

TPUD = TILLAMOOK PEOPLE'S UTILITY DISTRICT
 PLCS = PLACES
 TL = TRANSMISSION LINE
 O.C. = ON CENTER
 TYP = TYPICAL
 OD = OUTER DIAMETER
 KOM = THOUSAND CIRCULAR MILS
 30K = 30,000 POUNDS
 FT = FEET
 IN = INCHES
 LBS = POUNDS
 STR = STRAND / STRANDS / STRANDING
 AAAC = ALL ALUMINUM ALLOY CONDUCTOR
 ACCS = ALUMINUM CONDUCTOR STEEL SUPPORTED
 OPGW = OPTICAL GROUND WIRE
 MAX = MAXIMUM
 MIN = MINIMUM
 RBS = RATED BREAKING STRENGTH
 EHS = EXTRA HIGH STRENGTH
 GALV = GALVANIZED
 ALUM = ALUMINUM
 TBD = TO BE DETERMINED (DATA NOT FINALIZED OR UNAVAILABLE)
 DIA = DIAMETER
 CLSM = CONTROLLED LOW DENSITY MATERIAL

DESIGN PARAMETERS	
LINE LENGTH (MILES)	8.25 (6.7 OF ALLIANCE)
LINE RATINGS (MVA)	25
LINE VOLTAGE (KV)	115
PHASE AMPERAGE (A)	139
CONDUCTOR TYPES	465.4 KCMIL 19 STR AAAC CAIRO 2 x 246.6 KCMIL 7 STR AAACVR2 ALLIANCE
APPEARING IN LINE (STRUCTURE TO STRUCTURE)	TILLAMOOK-23, 34 OCEANSIDE
AMPACTIVITY @ 75 °C (A)	590 333
RESISTANCE (Ω/1000 FT)	0.0518 0.0488
20-YR MAX AIR TEMP (°F)	52 52
MAX LINE RATING CONDUCTOR TEMP (°F)	167 167
MAX CONDUCTOR OPERATING TEMP (°F)	120 120
AVERAGE SPAN LENGTH (FT)	528
LEVEL SPAN AVERAGE MAX TEMP (°F)	13
TYPICAL BLOWOUT - 6 PSF WIND (FT)	21
TYPICAL BLOWOUT - EXTREME WIND	33
RECOMMENDED MIN EASEMENT WIDTH (FT)	50/100, LONGER SPANS MAY REQUIRE ADDITIONAL EASEMENT

DESIGN CONSIDERATION SUMMARY	
COORDINATE SYSTEM	NAD83 3601: OREGON NORTH, US SURVEY FEET
MAX ELEVATION (ASL, FT)	1932
LAT/LON (DMS)	12349'46.853"W 45127'29.594"N TO 12345'79.112"W 45127'13.274"N
FAA PRE-SCREENING RESULTS	NOTIFICATIONS ARE NOT REQUIRED
SECURITY LEVEL	5
AIR CONTAMINATION	MARINE AIR
GALLOPING	YES
AECOLIUM VIBRATION	YES
AVIAN	YES, DIVERTERS IN THE RIVERINE AREA
EXTREME ICING	YES
ALTAIR (°F)	48.1/8
DESIGN TENSION @ 250B, MEDIUM INIT (LBS)	3,200 LBS FOR 465.4 AAAC "CAIRO"
DESIGN TENSION @ 250B, MEDIUM INIT (LBS)	7,500 LBS FOR 2 x 246.6 KCMIL 7 STR AAACVR2 ALLIANCE
EMP	NO
PARALLEL FACILITIES	NONE
ENVIRONMENTAL	WETLAND, RIPARIAN, GEOLOGICAL HAZARDS
TERRAIN	FLAT THEN MOUNTAINOUS
SOIL	PENDING GEOTECH (SOFT SOILS IN LOWLANDS)
FAULT CURRENT REQUIREMENTS	TBD
PROPERTY OWNERSHIP	PRIVATE

LOADING CONDITIONS				
DESCRIPTION	WIND VELOCITY (MPH)	WIND PRESSURE (PSF)	WIRE ICE THICKNESS (IN)	WIRE TEMP (°F)
NESC MEDIUM (250B)	39.5	4	0.25	15
TPUD EXTREME WIND (250C)	100	25.6	0	60
NESC ICE AND WIND (250D)	30	2.30	0.25	15
EXTREME ICE	0	0	0.5	30
STRINGING & MAINTENANCE	30	2.3	0	30

OVERLOAD FACTORS - GRADE B (SEE CRITERIA NOTE B)				
CONDITION	VERTICAL	TRANSVERSE WIND	GENERAL	LONGITUDINAL DEADEND
NESC 250B (INCLUDE STR WEIGHT LOAD FACTOR OF 1.5)	1.50	2.50	1.10	1.65
NESC 250C/D, EXTREME ICE	1.00	1.00	1.00	1.00
STRINGING (THERMAL)	2.01.5	2.01.5	1.50	1.50
MAINTENANCE	2.00	2.00	2.00	2.00
*FOR STRUCTURES EXCEEDING 60 FT ABOVE GROUND.				

STRENGTH FACTORS - GRADE B			CONDITION*	
ITEM	250B	250C/D	250B	250C/D
METAL/CONCRETE/FP	1.00	1.00	1.00	1.00
WOOD	0.85	0.75	0.85	0.75
HARDWARE	1.00	0.80	1.00	0.80
GLY WIRE	0.90	0.80	0.90	0.80
GLY ANCHOR/FOUNDATIONS	1.00	1.00	1.00	1.00
SUSPENSE INSULATORS	0.50	0.65	0.50	0.65
POLY POST INSULATOR (SCL)	0.50	0.50	0.50	0.50
POLY POST INSULATOR (STL)	0.50	0.50	0.50	0.50
*FOR INITIAL CONDITIONS				

CABLE TENSION LIMITS - GRADE B			
CONDITION	INITIAL	FINAL	% UTS
250B*	INITIAL	INITIAL	80%
250C/D	INITIAL	INITIAL	80%
261H1c	INITIAL	INITIAL	35%
261H1c	INITIAL	INITIAL	35%
261H1c	INITIAL	INITIAL	25%
*0° F HVY, 15° F MED, 30° F LIGHT			

CLEARANCE REQUIREMENTS (FT)				
FEATURE	DESIGN	NESC MIN	BUFFER	
GROUND ROAD	25	23.1	4.3	
RAILROAD	33	28.3	4.7	
WATER (>2000 ACRES)	45	42.1	2.9	

CROSSINGS	
RAILROAD	
HVY 90'	
TRASK RIVER	
TILLAMOOK RIVER	
BAYOCEAN BLVD	

INSULATION COORDINATION			
SPECIFICATION	STRAIN	POST	
BIL (KV)	450	450	
L50% WITHSTAND VOLTAGE (KV)	173	173	
B5L SWITCHING IMPULSE LEVEL	460	460	
EQUIVALENT BELL REQUIREMENT	10	8	
MINIMUM LEAKAGE DISTANCE (IN)	115.0	92.0	
MINIMUM STRIKE DISTANCE (IN)	57.5	46.0	

INSULATOR REQUIREMENTS			
SPECIFICATION	I-STRING STRAIN	POST	
STRIKE DISTANCE (IN)	52	52.9	
LEAKAGE DISTANCE (IN)	154.7	137.9	
60 Hz DRY FLASHOVER (KV)	564	498	
60 Hz WET FLASHOVER (KV)	463	416	
CIPO POSITIVE (KV)	896	866	
CIPO NEGATIVE (KV)	952	912	

CABLE DATA						
NAME	SIZE (KCMIL OR OTHER)	STRANDING	RTS (LBS)	DIA (IN)	WEIGHT (LBS/FT)	LENGTH
465.4 KCMIL 19 STR CAIRO	465.4	19	15600.0	0.783	0.522	3,000
246.6 KCMIL 7 STR ALLIANCE AAACVR2	246.6	7	17120.0	0.563 x 1.126 (0.922)	0.464	100
OPGW CENTER CORE 48 CO-29/29/465	N/A	4/1	10,538	0.465	0.238	100
AFL 20M ALUMINUM WELD GUY WIRE	20M	7	20,000	0.444	0.347	100
7 No. 8 ALUMINUM WELD ASTM B 416 (SHIELD WIRE)	7 No. 8	7	15,930	0.385	0.262	2
#4 AWG 3 STR COPPER (GROUND/BONDING)	#4 AWG	7	N/A	0.232	0.129	16.0

SPACERS & DAMPER QUANTITIES		QTY (EACH)
VIBRATION DAMPERS: SEE AFL VIBREC DOCUMENTS: UPLANDS & LOWLANDS		SEE VIBREC DOCUMENTS
BIRD FLIGHT DIVERTERS (ALL CABLES EVERY 15 FT, STR 23 - 34 - >8500 FT)		115 kV SWP OPGW, 180 SHIELD, 0

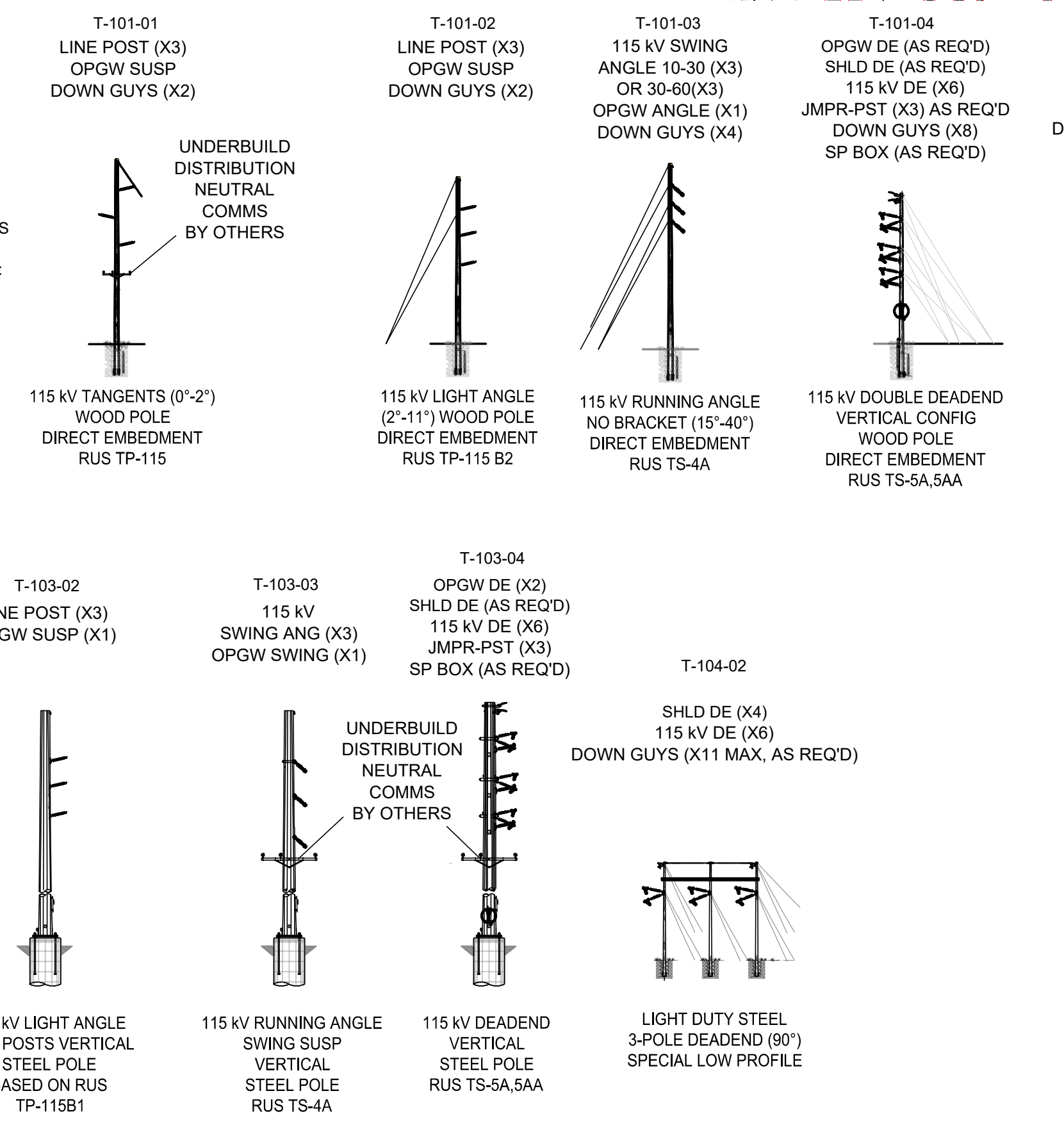
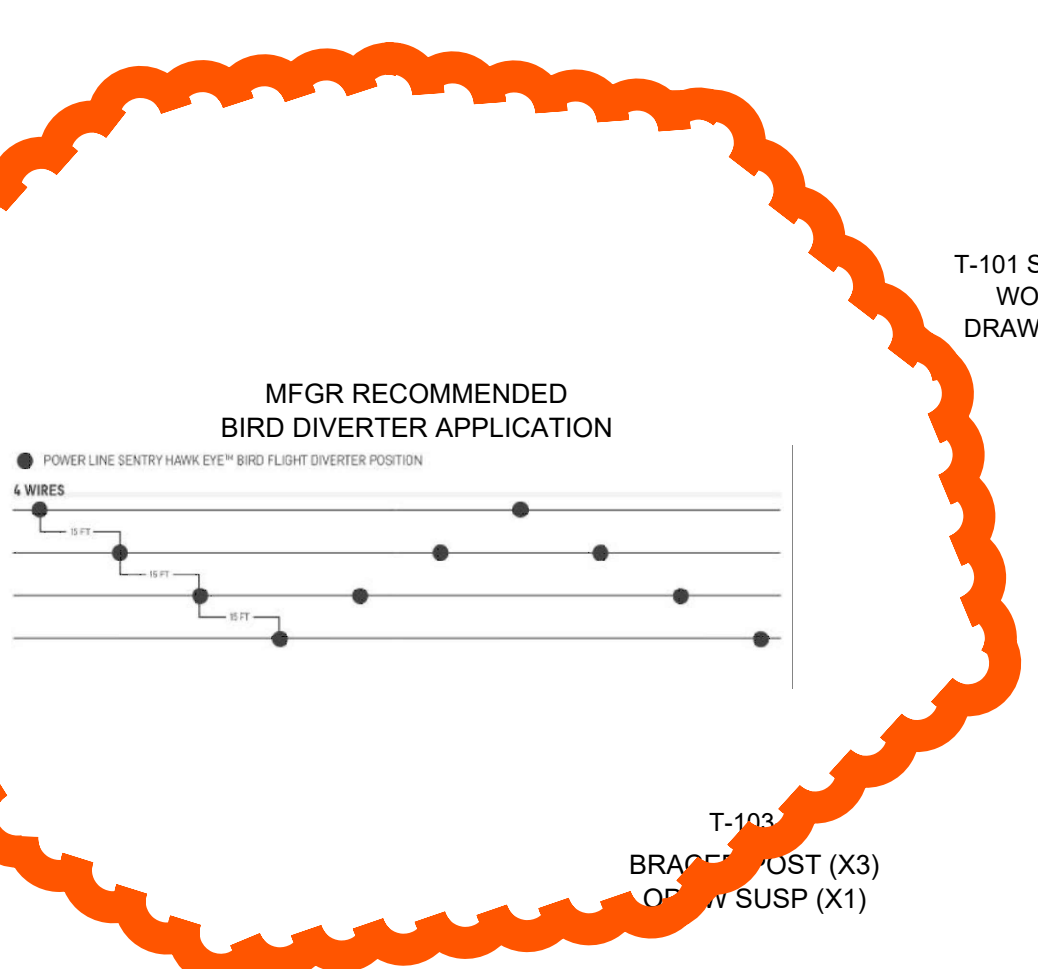
EXCAVATION/BACKFILL QUANTITIES		VOLUME (CU-YD)
TOTAL PROJECT STRUCTURAL EXCAVATION		0.15
TOTAL PROJECT DRILLED PIER CONCRETE		489

LINE IMPEDANCE PER MILE					
PROJECT R+ (Ω/M)	PROJECT X+ (Ω/M)	PROJECT B+ (Ω/M)	PROJECT R0 (Ω/M)	PROJECT X0 (Ω/M)	PROJECT B0 (Ω/M)
0.2545	0.7365	5.848	0.64859	2.3485	2.93721

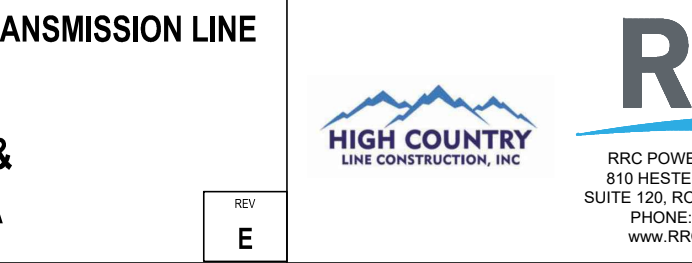
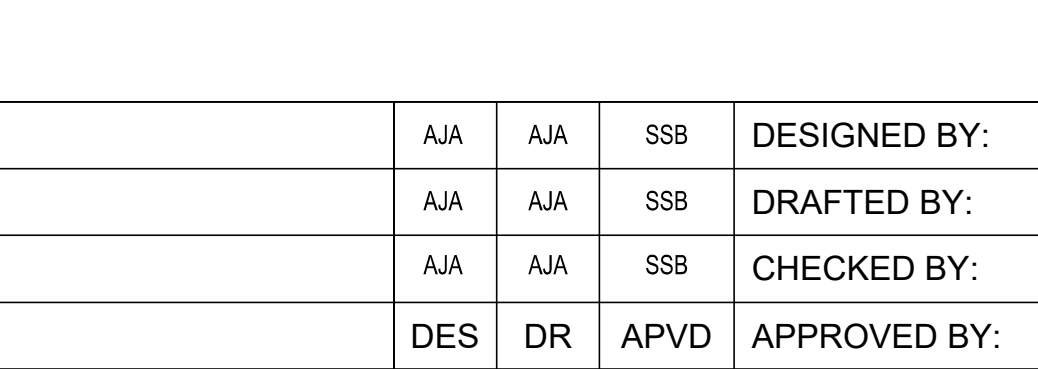
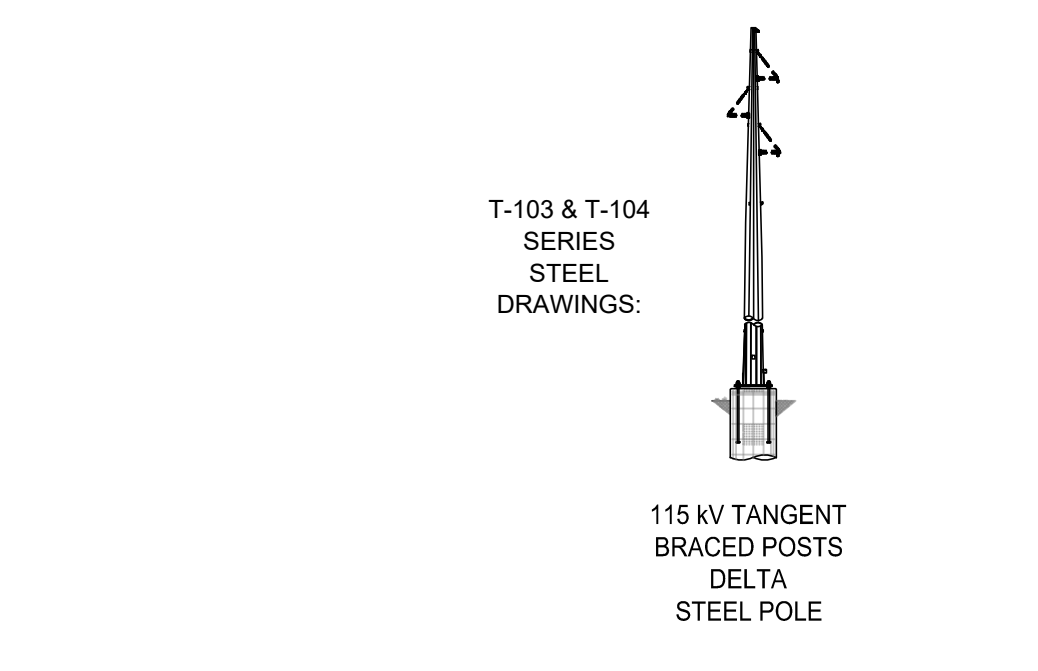
LINE IMPEDANCE PER UNIT 115 KV/100 MVA					
PROJECT R+ (PU)	PROJECT X+ (PU)	PROJECT B+ (PU)	PROJECT R0 (PU)	PROJECT X0 (PU)	PROJECT B0 (PU)
0.01681	0.04881	0.03575	0.04283	0.1551	0.00339

REACTIVE POWER (MVAR)					
POSITIVE SEQUENCE	ZERO SEQUENCE				
0.67549	0.33927				

FOUNDATION DISPLACEMENT LIMITS (NOTE 1)					
OVERTURNING UNDER NO WIND?	DEFLECTION (IN)	ROTATION (DEG)			
YES	2	0.5			
NO	3	1			



DRAWING No.	REV	DESCRIPTION/TITLE	DATE
T01-T-100-01	E	COVER SHEET: DRAWING LIST & PROJECT DATA	30/09/2023
T01-T-101-01	E	WOOD TANGENT 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-101-02	E	WOOD LIGHT ANGLE 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-101-03	E	WOOD RUNNING ANGLE 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-101-04	E	WOOD DEADEND 3 POLE @ 21° STR. WIRE	30/09/2023
T01-T-102-01	E	WOOD DEADEND 3 POLE @ 90° STR. WIRE	30/09/2023
T01-T-103-01	E	STEEL TANGENT 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-103-02	E	STEEL LIGHT ANGLE 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-103-03	E	STEEL RUNNING ANGLE 1 POLE @ 21° STR. WIRE	30/09/2023
T01-T-103-04	E	STEEL DEADEND 3 POLE @ 21° STR. WIRE	30/09/2023
T01-T-104-01	E	STEEL DEADEND 3 POLE @ 90° STR. WIRE	30/09/2023
T01-T-104-02	A	LIGHT DUTY STEEL DEADEND 3 POLE @ 90° STR. WIRE	30/09/2023
T01-T-105-01	E	115 kV CONDUCTOR ASSEMBLIES	30/09/2023
T01-T-106-01	E	FIBER OPTIC AND SHIELD WIRE ASSEMBLIES	30/09/2023
T01-T-107-01	E	WOOD POLE GRUYS AND GUY ANCHOR DETAILS	30/09/2023
T01-T-108-01	E	115 kV GUY ANCHOR AND GUY WIRE DETAILS	30/09/2023
T01-T-109-01	E	POLE DIRECT EMBEDMENT AND GROUND ROD DETAILS	30/09/2023
T01-T-110-01	E	DRILLER'S SCHEDULE	30/09/2023
T01-T-111-01	E	WOOD TANGENT 1 POLE @ 21° STR. WIRE DETAILS	30/09/2023
T01-T-112-01	E	WOOD LIGHT ANGLE 1 POLE @ 21° STR. WIRE DETAILS	30/09/2023
T01-T-113-01	E	WOOD RUNNING ANGLE 1 POLE @ 21° STR. WIRE DETAILS	30/09/2023
T01-T-114-01	E	WOOD DEADEND 3 POLE @ 21° STR. WIRE DETAILS	30/09/2023
T01-T-115-01	E	WOOD DEADEND 3 POLE @ 90° STR. WIRE DETAILS	30/09/2023
T01-T-116-01	E	WOOD TANGENT 1 POLE @ 21° DRILL W/ GND AND FASTENERS	30/09/2023
T01-T-117-01	E	WOOD LIGHT ANGLE 1 POLE @ 21° DRILL W/ GND AND FASTENERS	30/09/2023
T01-T-118-01	E	WOOD RUNNING ANGLE 1 POLE @ 21° DRILL W/ GND AND FASTENERS	30/09/2023
T01-T-119-01	E	WOOD DEADEND 3 POLE @ 21° DRILL W/ GND AND FASTENERS	30/09/2023
T01-T-120-01	E	WOOD DEADEND 3 POLE @ 90° DRILL W/ GND AND FASTENERS	30/09/2023
T01-T-121-01	E	PLAN AND PROFILE SHEET #1	30/09/2023
T01-T-122-01	E	STRUCTURE DATA SHEETS (K&S WITH COVER SHEET)	30/09/2023
T01-T-123-01	E	STRINGING TABLES (DOC W/ COVER SHEET)	30/09/2023
T01-T-124-01	E	CONSTRUCTION STAKING REF SHEET (DOC W/ COVER SHEET)	30/09/2023
T01-T-125-01	E	PROJECT BUILT 1/2" = 1" MEASUREMENT SCALE WORKSHEET	30/09/2023



E	06/08/2023	IFR 95%, ADDED 104-02	AJA	AJA	SSB	DESIGNED BY:	RRC / A. AMATO	ORIGINAL DRAWING DATE:	07/28/2022
D	03/24/2023	IFR 90%	AJA	AJA	SSB	DRAFTED BY:	RRC / A. AMATO	CONTRACTOR DRAWING NO:	TOTL-T-000-01
C	11/18/2022	IFR 60%	AJA	AJA	SSB	CHECKED BY:	RRC / S. BEILSTEIN	PROJECT NO:	RRC MD2207027
NO:	DATE	REVISION DESCRIPTION	DES	DR	APVD	APPROVED BY:	RRC / S. BEILSTEIN	WORK ORDER NUMBER:	7103

TILLAMOOK PUD
 TILLAMOOK, OREGON

TILLAMOOK - OCEANSIDE 115 kV TRANSMISSION LINE
 COVER SHEET,
 DRAWING LIST &
 PROJECT DATA

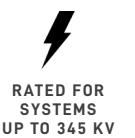
RRC
 CONFIDENTIAL - THE PROPERTY OF RRC POWER & ENERGY, LLC. HIGH COUNTRY LINE CONSTRUCTION AND TILLAMOOK PUD, INC. REPRODUCTION MAY BE MADE IN WHOLE OR IN

HAWK EYE™ BIRD FLIGHT DIVERTERS

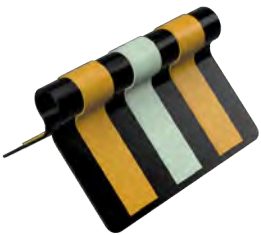


PATENT # 8,438,998 B2

SHAPE AND DESIGN SUPPORT RESEARCH PROVING THAT VISIBILITY IN LOW LIGHT IS THE MOST IMPORTANT ASPECT IN PREVENTING AVIAN COLLISIONS.



LARGEST SURFACE AREA OF REFLECTIVE MATERIAL IN THE INDUSTRY



INSIDE VIEW



LINEFLY™ INSTALLATION ROBOT

FLUORESCENT PRISMATIC YELLOW IS MIRRORED TO EFFECTIVELY REFLECT LIGHT

24-HOUR GLOW-IN-THE-DARK

A-FRAME SHAPE PROVIDES MAXIMUM VISIBILITY FROM ALL ANGLES

DURABLE RUBBER HOSE CRADLES WIRE, DOES NOT DAMAGE OPGW

NO MECHANICAL COMPONENTS TO POTENTIALLY FAIL

RATED FOR SYSTEMS UP TO 345 KV

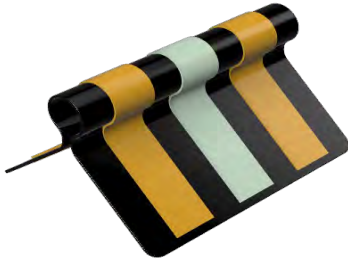
EASY HOTSTICK INSTALL

QUICK, SAFE, EFFICIENT ROBOT/DRONE INSTALL OPTION

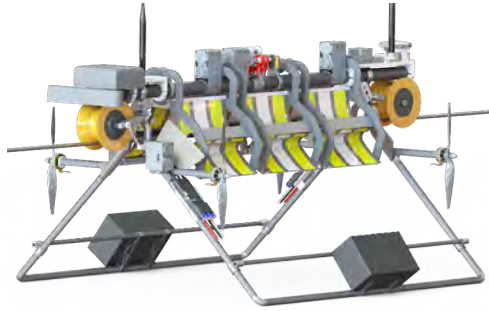
VIDEOS +
MORE INFO



HAWK EYE™ BIRD FLIGHT DIVERTERS



HAWK EYE™
BIRD FLIGHT DIVERTER
BFD-050



HAWK EYE™
LINEFLY™
INSTALLATION ROBOT



HOTSTICK
INSTALLATION TOOL
BFD-AT-050-075

SKU	LENGTH	HEIGHT	SYSTEM KV	CONDUCTOR RANGE	CONDUCTOR DIAMETER	MIN QTY
BFD-050	6" / 15.24 CM	3" / 7.62 CM	≤ 345 KV	#4 - 300 + OPGW	0.25" - 0.68" (0.63 cm - 1.72 cm)	50
BFD-075	6" / 15.24 CM	4" / 10.16 CM	≤ 345 KV	336 - 795 MCM	0.68" - 1.1" (1.72 cm - 2.79 cm)	50
BFD-150	6" / 15.24 CM	5" / 12.7 CM	≤ 345 KV	850 - 1780 MCM	1.1" - 1.5" (2.79 cm - 3.81 cm)	50
BFD-051 / GUY WIRE MARKER *	6" / 15.24 CM	3" / 7.62 CM	≤ 345 KV	-	0.25" - 0.68" (0.63 cm - 1.72 cm)	50
BFD-076 / GUY WIRE MARKER *	6" / 15.24 CM	4" / 10.16 CM	≤ 345 KV	-	0.68" - 1.1" (1.72 cm - 2.79 cm)	50

* GUY WIRE MARKER INCLUDES RETENTION CLIP

TOOLS

BFD-AT-050-075	HOTSTICK COMPATIBLE INSTALLATION TOOL FOR BFD-050 AND BFD-075
BFD-AT-150	HOTSTICK COMPATIBLE INSTALLATION TOOL FOR BFD-150

TESTS

TESTS	RESULTS
UL 94 // FLAMMABILITY OF PLASTIC MATERIALS	V-0 / 5VA (UL FILE NUMBER: E175765)
IEEE 1656 5.6 / ASTM 4329/ASTM G-154 UV AGING	3,000 HOURS
ASTM D-638 / D-1822 // TENSILE STRENGTH @ YIELD	900 PSI (62.1 MPA)
ASTM D-256 / NOTCHED IZOD IMPACT	12.5 FT-LB/IN (670 J/M)
ASTM D648 / DEFLECTION TEMPERATURE UNDER LOAD @ 66 PSI	270 F / 132 C
24 HOUR PHOTO LUMINESCENT - COMPLIANCE	DIN 67510, ASTM 2072, PSPA Class A/B/C/D, APTA SS-PS-004-99 Rev 2/3, ICC 2009/201202015 IBC/IFC, UL 1994

REGULATORY

ROHS COMPLIANT

- CONCENTRATED LOAD DATA FOR PLS-CADD AVAILABLE UPON REQUEST
- WIND AND ICE LOAD DATA AVAILABLE UPON REQUEST

HAWK EYE™ BIRD FLIGHT DIVERTER

POWER LINE SPACING REFERENCE



SPACING RECOMMENDATIONS

Areas with higher avian traffic:

- Placement recommended at 15 feet (4.57 meters) intervals

Areas with less avian traffic:

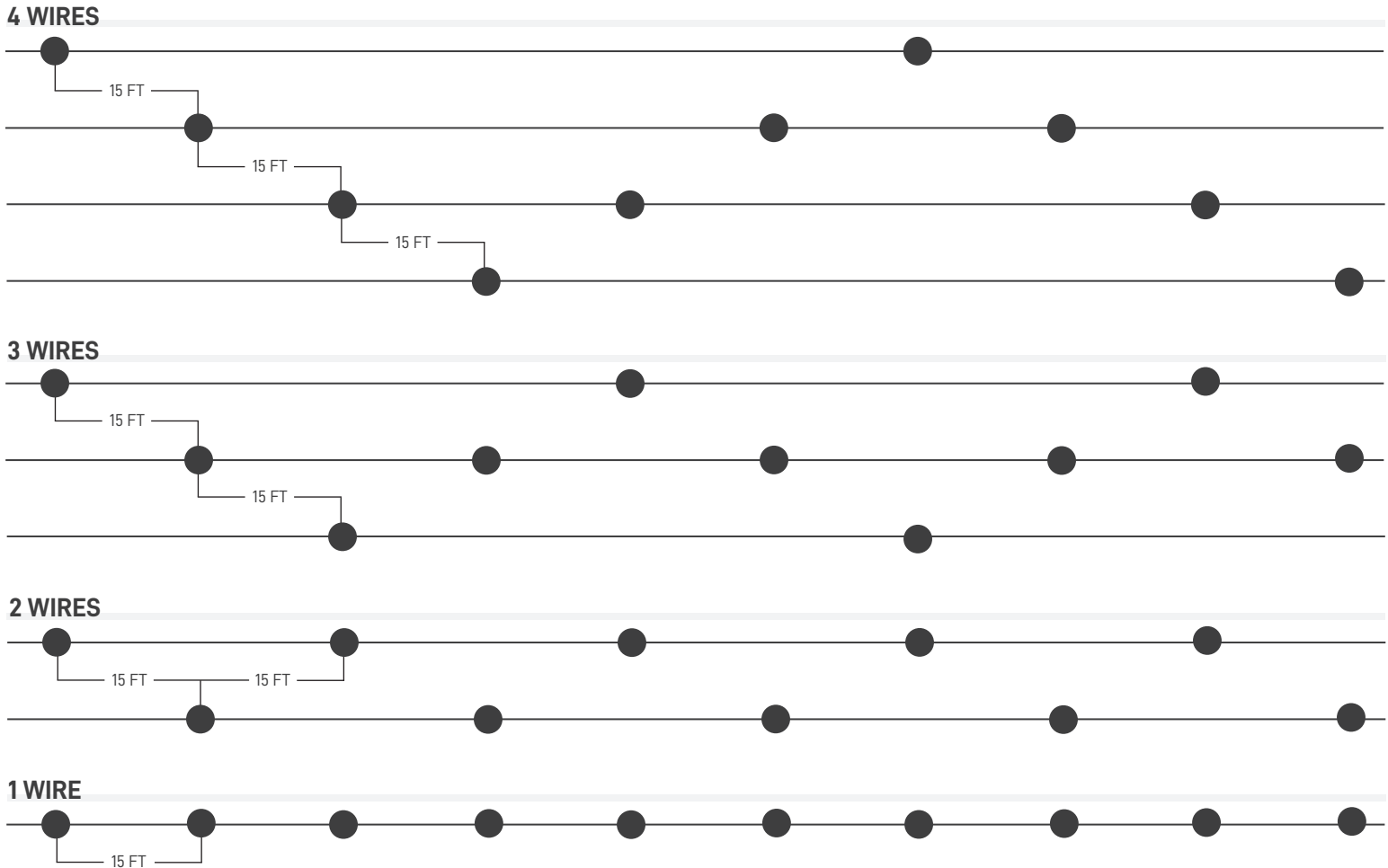
- Consult APLIC.org and local authorities to collaborate on appropriate spacing
- Areas that are not heavily trafficked (i.e., eco-regions with topography that does not feature feeding grounds, waterways or other flyway corridors) can sometimes be marked less frequently at 25 feet (7.62 meters) intervals

Systems with multiple power lines

- Stagger placement on each line

EXAMPLES OF STAGGERING PLACEMENT ON SYSTEMS WITH MULTIPLE LINES IN THE SAME HORIZONTAL PLANE

● POWER LINE SENTRY HAWK EYE™ BIRD FLIGHT DIVERTER POSITION



AVIAN PROTECTION PLAN DOCUMENTATION RECOMMENDATIONS

Rationale for placement should be documented in an avian protection plan. Areas where placement is greater than 15 feet apart should be monitored and modified as needed. If collisions continue these lines should be backfilled with additional bird flight diverters to achieve 15 feet spacing. Refer to APLIC.org, local authorities, and your environmental department for additional guidance.



Appendix D

Underground Alternatives

Cost Estimate - Planning Level
115kV Underground Transmission Line
7,000 Foot Directional Boring

Item	Units	Qty	Cost/Unit	Extended Cost
Deadend Tower	Each	2	\$275,000	\$550,000
Deadend Foundation	Each	2	\$125,000	\$250,000
Pole Mounted UG Terminations	Each	8	\$14,737	\$117,897
350MCM UG Cable (4 runs w/spare)	LFT	28,000	\$43	\$1,194,200
Fiber Optic Cable - Underground	LFT	7,000	\$22	\$154,000
Directional Boring 1-16" Bore w/o Casing	LFT	7,000	\$375	\$2,625,000
HDPE 2 inch - 1 Run Communication	LFT	7,000	\$4.25	\$29,750
HDPE 6 inch - 4 Runs	LFT	28,000	\$14.25	\$399,000
HDPE 16 inch - 1 Run	LFT	7,000	\$63	\$441,350
Bore pits 120 ft x 180 ft	Each	2	\$38,000	\$76,000
Valts 8' x 18' x 6'	Each	2	\$120,000	\$240,000
USACE Approvals	LS	1	\$100,000	\$100,000
Geotechnical Boring Samples/Analysis	Each	5	\$15,000	\$75,000
Land (Dead-end Towers & Vaults)	Acre	1.377	\$32,000	\$44,077
Subtotal				\$6,296,274
Mob/DeMob	5%			\$314,814
Surveying	3%			\$157,407
Permitting	12%			\$755,553
Engineering	15%			\$944,441
Construction Management	5%			\$314,814
Subtotal				\$8,783,302
Planning Level Contingency - High	50%			\$4,391,651
Total				\$13,174,953

4/1/2023

Planning Level Cost Estimate to Underground 115kV Transmission Line Through the OWEB Defined Estuary Area

April 2023

Tillamook People's Utility District developed a planning level cost estimate at the request of the Oregon Watershed Enhancement Board as part of an easement request made to Tillamook County. Based on recommendations from more experienced electric utilities in the Pacific Northwest, it was recommended that a spare cable be installed to reduce potential outage times in the event of a failure. These outage times would range from a few months to a year, or longer, depending on the location of the faulted cable and damage caused if a spare cable wasn't installed. Southwire recommended that the cables be installed using horizontal directional drilling and a specialized 350MCM underground cable was recommended for this type of river crossing and length is installation. The pricing was from 2017 and was escalated to 2023 dollars based on the cost increases the District has experienced for 25kV underground cable (same insulation and conductor material, just much larger in size).

Preliminary pricing was provided by industry experts including Southwire (cable and cable terminations), Pacific Gas and Electric (construction techniques), Directional Horizontal Drilling (horizontal drilling via a phone conversation), Oldcastle (vaults), Haliburton (HDD), and ISCO Industries (HDPE pipe). Two boring pits will be needed approximately 120 feet by 180 feet and 12 to 15 feet deep, one at each end. A large staging area would be required to house the rolls of HDPE piping and equipment needed to butt weld the ends of the HDPE rolls. Two large vaults will be needed near each termination structure and were estimated at 8 feet wide by 18 feet long and 6 feet deep. The vault lids would be near ground level with two access point being above ground surface, thus permanently impacting the farms fields where the vaults are to be located.

Large dead-end towers are needed to transition the overhead conductors to the underground cable. These self-supporting towers are estimated to be 80 to 90 feet tall and 4 to 6 feet in diameter requiring foundations 25 to 30 feet deep and 6 to 8 feet in diameter.

Directional Horizontal Drilling company out of Canada estimated that 2 boring rigs would be required to push the entire 7,000 feet and pull the HDPE piping back through the bore holes. They expressed concerns of being able to bore so that there is 40 feet under the rivers. The rivers are around 15 feet deep at the crossings and there is a hard gravel layer found at around 40 to 50 below ground level based on the current geotechnical boring samples. The pricing provided by Directional Horizontal Drilling company did not include a casing, which might be required given the less than desirable depth below the rivers and soft soils.

Pricing for the specialized underground cable was provided by Southwire in 2017 and a 50 percent escalation factor was added (based on increased costs on 25kV underground cable). Southwire also provided pricing for the underground cable terminations. The cable recommended is designed for long cable pulls with large distances between vaults.

The planned route for the underground cable would start along Goodspeed Road in the same location where the overhead route is planned to turn south and enter the estuary area. The overhead transmission line would end at the riser pole on Goodspeed Road and transition to the underground cable on the riser pole. The underground vault would be located within 50 feet of the riser and will have to be located off of the county road and into the farm field. The route would continue in a southwesterly direction under the farm fields and the Southern Flow Corridor property, crossing under the Trask River, then under another farm property and under the Tillamook River and terminating on the west side of another farm field near Bayocean Road. An underground vault would be placed in the farm field within 50 feet of the riser pole. The transmission line would transition from underground to overhead and continue overhead across Bayocean Road up into the forested area to the west of Bayocean Road.



Proposed Steel Riser Pole







Southwire Cost for Underground Cable

Main

Description	Quantity	Spare Quantity	Unit	Comments/Product number	Unit Price	Total price	Unit
Cable Option 2	17,424	0	ft.	350 kcmil Compact Al, 630 mils XLPE, Cu Screen Wires, Al Laminate Tape, PE Jkt	15.10	263,102.40	USD/ft
Terminations	6	0	ea.	Kabledon APECB 1452P	4,491.40	26,948.40	USD

Prices are in USD and do not include taxes.
Freight is included as FCA Jobsite.

Added 50% exculation

The people behind the power.™



I. Comments, Clarifications and Exceptions

1. Commercial Clarifications and Exceptions

- A. Customer terms and conditions have not been reviewed and Southwire reserves the right to review and negotiate the terms at later date.
- B. Sales or other applicable taxes are not included in the price. You, the customer, are responsible for all sales and use taxes that may be due at the time of the invoicing. If you have a Tax Exemption Certificate applicable to this project you must present this certificate with your purchase order for this project.
- C. All cables are packed on returnable (spare: non-returnable) heavy-duty steel reels with a wooden lagging protection. Reel deposit Charges are not included in our unit price. Reel Deposit Charges will be waived for a period of six (6) months after date of invoice. If Southwire is performing installation Reel Deposit Charges are not applicable.

II. Commercial Conditions

1. Cable Price Adjustment

Quote Metal Base	
CPBid	\$2.6580
APBid	\$0.9102

Cable Metal Weight		
Cable Construction	Wtcu	Wtal
350kcmil Al 630mils XLPE (sheath)	0.0000	0.9031
350kcmil Al 630mils XLPE (Lam)	1.0890	0.4024

Customers may elect either A) Firm Pricing at time of order or B) Adjustable Pricing

- A. Firm Pricing at time of order
 - o A hedge contract will be used to fix the cost of the aluminum and / or copper content.

Tillamook Budget 115kV

SW Quote #: 17-XXX-X

- Upon receipt of a fully clarified and firm order with mutually agreed upon delivery date and within 3 working days thereafter, Southwire HV Solutions will purchase metals contracts for the delivery month to cover the metals content.
- Concurrently, the cable price or prices will be adjusted accordingly as follows:

$$FP = BP - \{Wt_{cu} * (CPBid - CPOrder)\} - \{Wt_{al} * (APBid - APOrder)\} \quad [$/ft]$$

FP	Final Adjusted Price [\$/ft]
BP	Bid Price [\$/ft]
Wtcu	Amount of Copper used in the cable construction [lbs/ft]
CPBid	Copper Price base in the quotation [\$/lb]
CPOrder	Copper price COMEX as per the hedge contract for the delivery month [\$/lb]
Wtal	Amount of Aluminum used in the cable construction [lbs/ft]
APBid	Aluminum price base in the quotation [\$/lb]
APOrder	Aluminum Mid-West U.S. Transaction price as per the hedge contract for the delivery month [\$/lb]

B. Adjustable Pricing

- The cable price will be adjusted at the time of shipment. In this case:

CPOrder	Southwire’s copper base is the average of the daily closing COMEX prices for current month to date.
APOrder	Southwire’s aluminum base is the average of the METALS WEEK U.S. Transaction daily prices for the previous month.

2. Delivery

Delivery to begin 16-18 weeks after receipt of PO and firm cut lengths, subject to our confirmation at the time of the order.

Date: 2/2/2017

Revision No. 0

3. Terms of Payment

Payment terms will be Net 30 from invoice date, subject to credit approval.

4. Testing

Routine and sample cable tests will be carried out according to AEIC CS9-2006 and ICEA S-108-720-2012.

5. Packing and Transportation

Incoterms: FCA Jobsite

Packing is included in our prices. All cables are packed on returnable (spare: non-returnable) heavy-duty steel reels with a wooden lagging protection. Every reel length is equipped with a pulling eye.

Return shipment of empty cable reels is at the expense of Southwire. Loading of empty cable reels on trucks provided by Southwire is the responsibility of the customer.

Price of spare reel: \$8,900/ea.

6. Quality Assurance

Southwire maintains a QA system, certified to ISO 9001: 2008

7. Warranty

- A. (1)Warranty for Equipment Supply Only. Southwire Company, LLC ("Supplier") expressly warrants to Company that, for a period of one (1) year beginning from the date the high voltage cable system materials ("the Equipment") is energized in the utility network or beginning six (6) months from the date the Equipment arrives at the Company's requested location, whichever occurs first, (hereinafter, the "Warranty

Period"), the Equipment shall (a) conform and be in compliance with the Specifications, (b) be free from defects in design, material, workmanship and title, and (c) be of the kind and quality, and provide the performance, as designated and described herein. All Equipment shall be new, unused, and undamaged when installed or otherwise incorporated in the work. To the extent that the Equipment incorporates or includes components or parts manufactured by third parties, Supplier hereby assigns and passes through to Company all express and implied warranties from such third parties. This warranty is contingent upon correct installation and operation within acceptable industry practices.

(2)Remedy for Breach of Warranty for Materials Supply Only. Should the Equipment provided by Supplier fail to meet one or more of such warranties set forth in Section 1 (A) of this Agreement during the warranty period, Supplier, at its cost and expense, shall repair or replace the defective Equipment, at Supplier's sole election, f.o.b. original destination point, as soon as practicable. Supplier shall not be liable for the costs of removal of the defective Equipment or the costs of reinstalling the replacement Equipment. Likewise, Supplier shall not be responsible for any costs of civil works, including, but not limited to, duct bank damage, trenching, and other structural construction, which may result from defective Equipment. Additionally, Southwire shall not be liable for the costs of any incidental, indirect, punitive or consequential loss or damage including loss of profits or revenue, cost of capital, loss of use of equipment or facilities, cost of purchased or replacement power or claims of customers due to loss of service resulting from replacement or repair of failed Equipment.

- B. (1)Warranty for Equipment Supply and Installation of Equipment. Southwire Company, LLC ("Supplier") expressly warrants to Company that, for a period of two (2) years beginning from the date the high voltage cable system materials ("the Equipment") is energized in the utility network or beginning six (6) months from the date the Equipment arrives at the Company's requested location, whichever occurs first, (hereinafter, the

"Warranty Period"), the Equipment and the Installation Services shall (a) conform and be in compliance with the Specifications, (b) be free from defects in design, material, workmanship and title, and (c) be of the kind and quality, and provide the performance, as designated and described herein. All Equipment shall be new, unused, and undamaged when installed or otherwise incorporated in the work. To the extent that the Equipment incorporates or includes components or parts manufactured by third parties, Supplier hereby assigns and passes through to Company all express and implied warranties from such third parties. This warranty is contingent upon correct installation and operation within acceptable industry practices.

(2) Remedy for Breach of Warranty for Equipment Supply and Installation.

Should the Equipment and/or Installation Services provided by Supplier fail to meet one or more of such warranties set forth in Section 2 (A) of this Agreement during the warranty period, Supplier, at its cost and expense, shall repair or replace the defective Equipment, at Supplier's sole election, f.o.b. original destination point, as soon as practicable. Supplier shall be responsible for the costs of removal of the defective Equipment and the costs of reinstalling the replacement Equipment. However, Supplier shall not be responsible for any costs of civil works, including, but not limited to, duct bank damage, trenching, and other structural construction, which may result from defective Equipment. Additionally, Southwire shall not be liable for the costs of any incidental, indirect, punitive or consequential loss or damage including loss of profits or revenue, cost of capital, loss of use of equipment or facilities, cost of purchased or replacement power or claims of customers due to loss of service resulting from replacement or repair of failed Equipment.

- C. (1) Warranty for Equipment Supply and Installation Supervision only. Southwire Company, LLC ("Supplier") expressly warrants to Company that, for a period of two (2) years beginning from the date the high voltage cable system materials ("the Equipment") is energized in the utility network or beginning six (6) months from the date the Equipment

arrives at the Company's requested location, whichever occurs first, (hereinafter, the "Warranty Period"), the Equipment and the Supervision Services shall (a) conform and be in compliance with the Specifications, (b) be free from defects in design, material, workmanship and title, and (c) be of the kind and quality, and provide the performance, as designated and described herein. All Equipment shall be new, unused, and undamaged when installed or otherwise incorporated in the work. To the extent that the Equipment incorporates or includes components or parts manufactured by third parties, Supplier hereby assigns and passes through to Company all express and implied warranties from such third parties. This warranty is contingent upon correct installation and operation within acceptable industry practices.

(2) Remedy for Breach of Warranty for Equipment Supply and Installation Supervision only. Should the Equipment and/or Supervision Services provided by Supplier fail to meet one or more of such warranties set forth in Section 3 (A) of this Agreement during the warranty period, Supplier, at its cost and expense, shall repair or replace the defective Equipment, at Supplier's sole election, f.o.b. original destination point, as soon as practicable. Supplier shall be responsible for providing Supervision Services for the reinstallation of the replacement Equipment however; Supplier will not be responsible for the costs of removal of the defective Equipment and the costs of reinstalling the replacement Equipment. Likewise, Supplier shall not be responsible for any costs of civil works, including, but not limited to, duct bank damage, trenching, and other structural construction, which may result from defective Equipment. Additionally, Southwire shall not be liable for the costs of any incidental, indirect, punitive or consequential loss or damage including loss of profits or revenue, cost of capital, loss of use of equipment or facilities, cost of purchased or replacement power or claims of customers due to loss of service resulting from replacement or repair of failed Equipment.

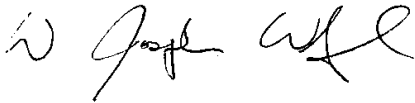
D. THE WARRANTIES SET FORTH HEREIN ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS WARRANTY APPLIES ONLY TO COMMERCIAL OR INDUSTRIAL USERS OR PURCHASERS FOR PURPOSES OF RESALE.

- E. If a technical dispute arises from a warranty claim, that cannot be resolved between the parties, they agree to submit said dispute to the National Electric Energy Testing, Research and Application Center (NEETRAC) for final evaluation and resolution of the cause of the defect.
- F. All Equipment repaired or replaced pursuant to each Warranty Section and all Supervision or Installation Services provided pursuant to the Warranty Sections 2 and 3 are subject to the provisions of this Section to the same extent as the Materials and Services originally performed, except that the Warranty Period with respect thereto will run from the date of completion of the repair or replacement.

Please do not hesitate to contact us should you have any questions or require further assistance.

Thank you,



W. Joseph Wadford
HV Proposal Engineer
Southwire

115 kV High Voltage Transmission Solid Dielectric Cable

Al conductor with concentric Cu wires and Al laminate sheath



Component	Description	Material	Thickness (mils)	Thickness (mm)	Diameter (in.)	Diameter (mm)
1	Compact Stranded Conductor 350 kcmil (177 mm ²) — 37 strands	Aluminum	n / a	n / a	0.62	15.6
2	Semi-Conductive Tape	Semi-Conducting Tape	0	0.00	0.62	15.6
3	Conductor Shield	SC-XLPE	47	1.20	0.71	18.0
4	XLPE Insulation	XLPE	630	16.00	1.97	50.0
5	Insulation Shield	SC-XLPE	59	1.50	2.09	53.0
6	Water-Swellable Semi-Conductive Tape	Semi-Conducting Tape	24	0.60	2.14	54.2
7	55 × AWG 12 Concentric Wires	Copper	81	2.05	2.30	58.4
8	Water-Swellable Semi-Conductive Tape	Semi-Conducting Tape	24	0.60	2.34	59.6
9	Laminate Foil Tape Shield	Aluminum	8	0.20	2.36	60.0
10	Jacket	LLDPE	115	2.92	2.59	65.8
11	Semi-Conductive Jacket Layer	SC-PE	8	0.20	2.61	66.2

Approximate Finished Cable Weight = 3.3 pounds per foot, 4.9 kilograms per meter

Note: Drawing not to scale. Values for tendering purposes only. Values in manufacturing specification may vary.

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Dwg. No: Budgetary-XS01	Customer: Oregon Utility
Date: 2017 - 02 - 02	Rev. 0
Prepared by: CJL	

Cable Characteristics

File Number:	Budgetary	Voltage:	115 kV
Customer:	Oregon Utility	Standard:	AEIC CS9
Drawing:	Budgetary-XS01	Cable Type:	350 kcmil Compact Al, 630 mils XLPE, 55 × AWG 12 Cu Screen
Prepared by:	CJL	Date:	2/2/2017
		Revision:	0

Operating Voltage Stresses	Voltages =	ø-ø: 115 kV; ø-g: 66 kV; BIL: 550 kV	
	C. Shield =	183.23 V / mil	7.21 kV / mm.
	Average =	105.4 V / mil	4.15 kV / mm.
	I. Shield =	66.07 V / mil	2.6 kV / mm.

Insulation Expansion	90 °C =	33 mils (1.6 %)	0.83 mm.
	105 °C =	53 mils (2.5 %)	1.35 mm.

Conductor Resistance	Rdc 25°C=	0.0505 Ohms / 1000 ft.	0.16568 Ohms / km.
	Rdc 90°C=	0.06347 Ohms / 1000 ft.	0.20825 Ohms / km.
	Rac 90°C=	0.06365 Ohms / 1000 ft.	0.20882 Ohms / km.

Shield / Sheath Resistance	Rdc 25°C=	0.02616 Ohms / 1000 ft.	0.08583 Ohms / km.
	Rdc 75°C=	0.03121 Ohms / 1000 ft.	0.10241 Ohms / km.
	Rac 75°C=	0.03184 Ohms / 1000 ft.	0.10446 Ohms / km.
rac resistance calculated on 2% linear increase basis			

Capacitance, Inductance, Surge Impedance	C =	39.843 pF / ft. (nF / 1000 ft.)	0.13072 nF / m. (µF / km.)
	L =	0.40292 µH / ft. (mH / 1000 ft.)	1.32192 µH / m. (mH / km.)
	Z _s =	101 Ohms	Configuration: Flat
XLPE loss factor = 0.0003, relative permittivity = 2.4			

Charging Current, Shunt Reactance, Dielectric Loss	I _c =	0.997 Amps / 1000 ft.	3.272 Amps / km.
	X _c =	66576 Ohms / 1000 ft.	20292 Ohms / km.
	W _D =	0.02 W / ft.	0.065 W / m.

Operating, Fault Sheath Voltage Rise	SVR =	64.2 Volts / 1000 ft.	210.7 Volts / km.
	L =	1000 ft.	305 m.
	SVR =	64.2 Volts	Fault SVR: 1.93 kV
SVR calculated at 1000 Amps			

Sidewall bearing pressure	1028 lb. / ft.	Maximum pulling tension	2800 lb.
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Minimum bending radius - installation	46.9" / 1191 mm	Minimum bending radius - permanent	31.3" / 794 mm
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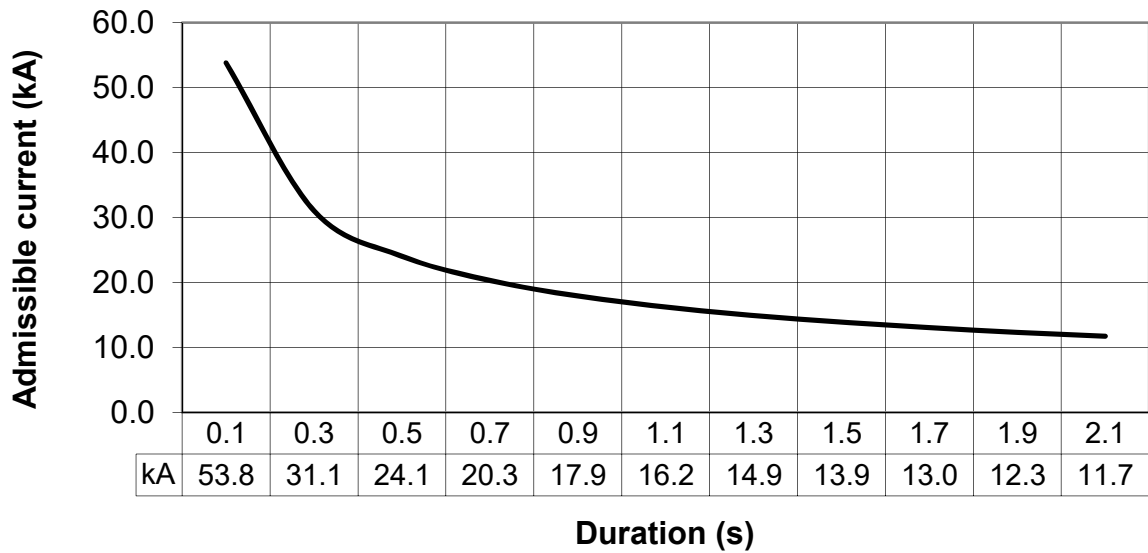
Conductor Short Circuit Current Capacity

File Number:	Budgetary	Voltage:	115 kV
Customer:	Oregon Utility	Standard:	AEIC CS9
Drawing:	Budgetary-XS01	Cable Type:	350 kcmil Compact Al, 630 mils XLPE, 55 × AWG 12 Cu Screen
Prepared by:	CJL	Date:	2/2/2017
		Revision:	0

Conductor short circuit current carrying capacity to IEC 949

Cross section:	177 mm ²	Specified short circuit current:	30 kA
Conductor metal:	Aluminum	Duration:	0.5 second
Initial temperature:	90 °C	Final temperature:	250 °C
K (mat. constant):	148 As ^{0.5} /mm ²	Beta (rec.of coeff.):	228 K

Maximum permissible short circuit current for 0.5 second is 24.1 kA.



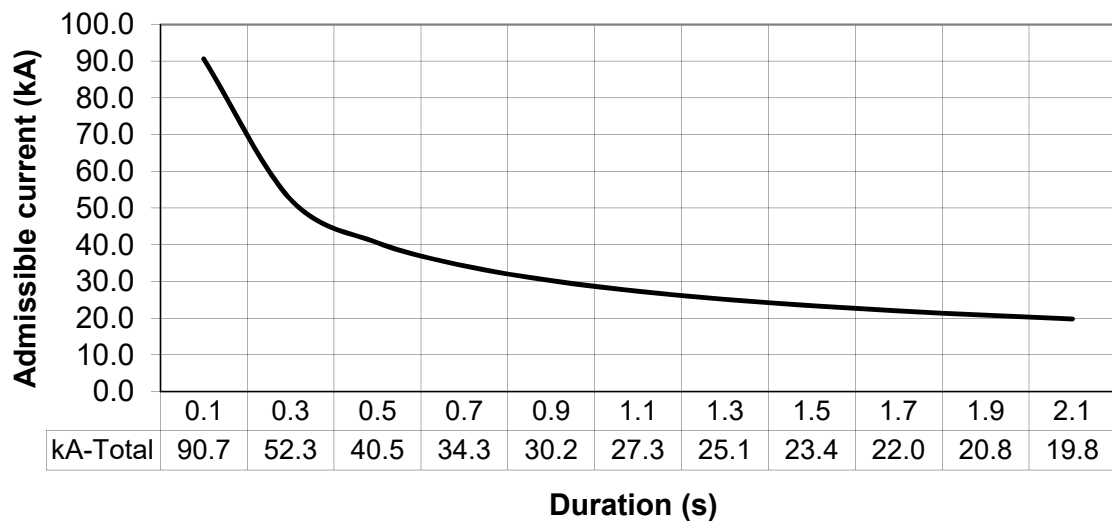
Metallic Shield/Sheath Short Circuit Current Capacity

File Number:	Budgetary	Voltage:	115 kV
Customer:	Oregon Utility	Standard:	AEIC CS9
Drawing:	Budgetary-XS01	Cable Type:	350 kcmil Compact Al, 630 mils XLPE, 55 × AWG 12 Cu Screen
Prepared by:	CJL	Date:	2/2/2017
		Revision:	0

Combined short circuit current carrying capacity to IEC 949

Wire Area:	182 mm ²	Specified short circuit current:	30 kA
Wire Metal:	Copper	Duration:	0.5 second
Laminate Area:	38 mm ²	Initial temperature:	75 °C
Laminate Metal:	Aluminum	Final temperature:	250.0 °C

Maximum permissible short circuit current for 0.5 sec. is 40.5 kA
Note: metallic laminate foil not included in short circuit calculation



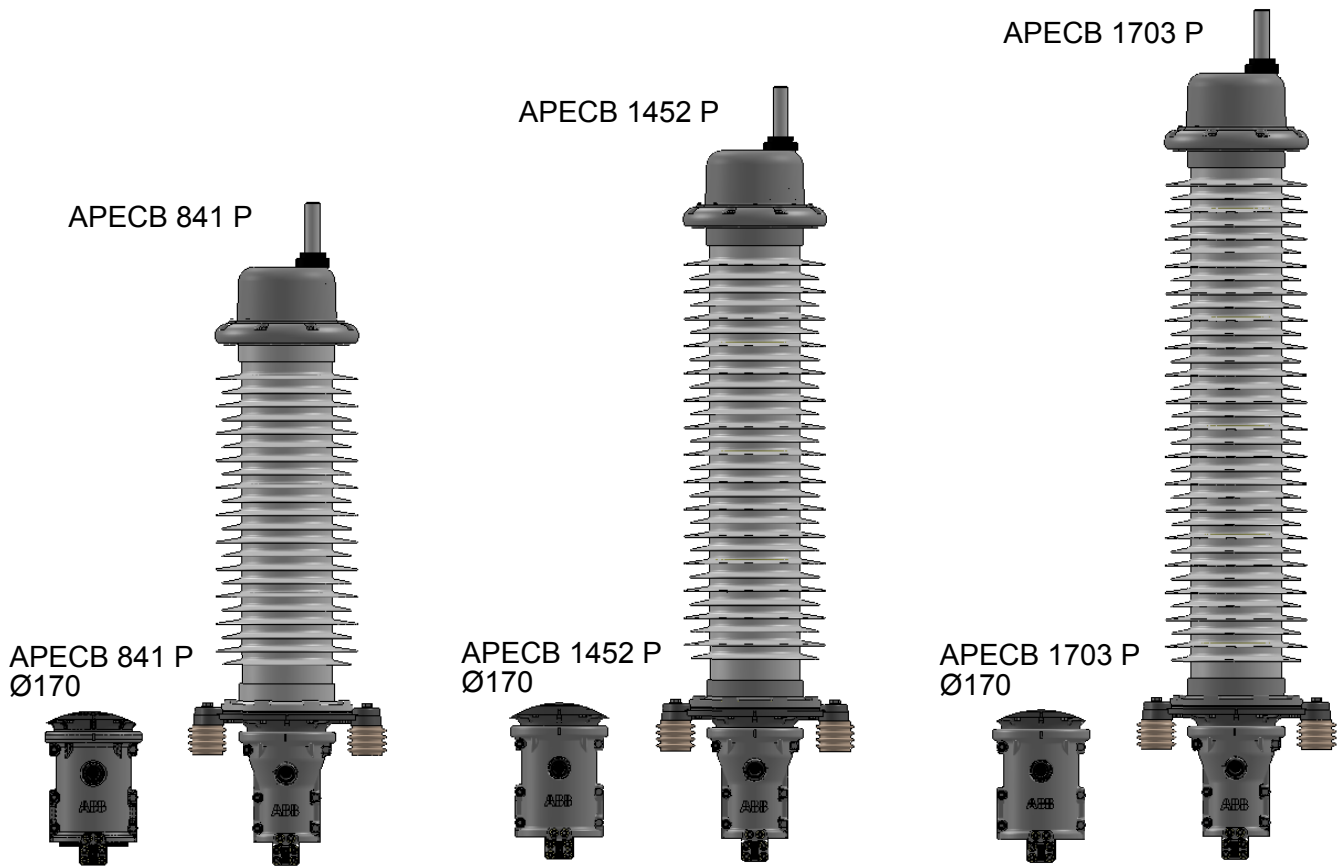
115kV Bushings - Transition OH to UG

Technical Data Sheet

APECB 84-170 kV P

Outdoor cable termination with composite insulator

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Use

Suitable for installations in which the termination is to be used as a self supporting type and for installations where there is a risk of very heavy site pollution severity.

Design

The cable termination consists of a composite insulator installed on a box body made of Al casting.

The field control component is a premolded stress relief cone. The insulator has sheds of the short-long type and is filled with synthetic insulating oil.

The composite insulator is available in grey. A post insulator kit which includes three stand-off insulators for insulating installation.

A top bolt with a diameter of 40, 50, 54, 60mm can be chosen and is included in the kit.

Installation

The installation can be simplified by assembling the termination horizontally on the ground.

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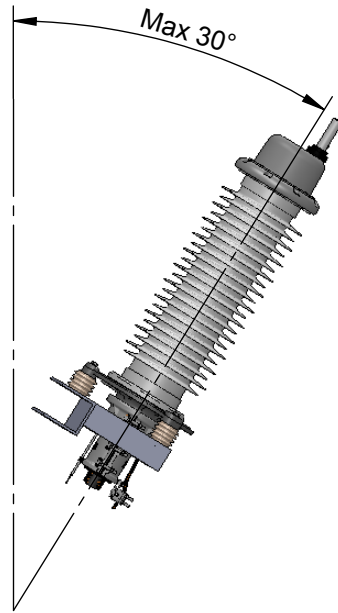
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- Top bolt $\varnothing 40/50/54$ for conductor $\varnothing 15-54\text{mm}$.
Top bolt $\varnothing 60$ for conductor $\varnothing 50-70\text{mm}$
- The cable must be secured below the cable clamps. Recommendation is 3 clamps between 0,5-1,5m from the termination.
- The sheds of the insulator can either have spiral or flat form.
- *******) Top bolt is positioned 68mm "off center" and can be placed in eight different positions.
- ******) Required length of opto fibre below the termination, according to distance K (for details see installation instruction).

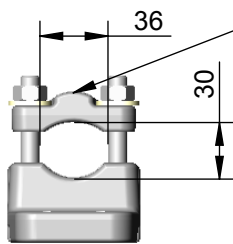
Type	kV	Dimension	
		~A	~ \varnothing
APECB 841 P	84	1330	370
APECB 841 P $\varnothing 170$	84		
APECB 1452 P	145	1630	370
APECB 1452 P $\varnothing 170$	145		
APECB 1703 P	170	1830	370
APECB 1703 P $\varnothing 170$	170		

(All measurements in mm)

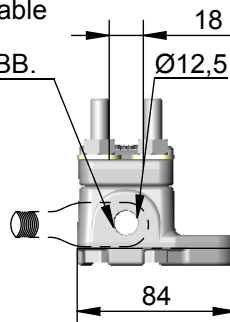
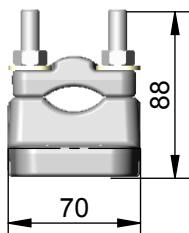


Screen connection clamp

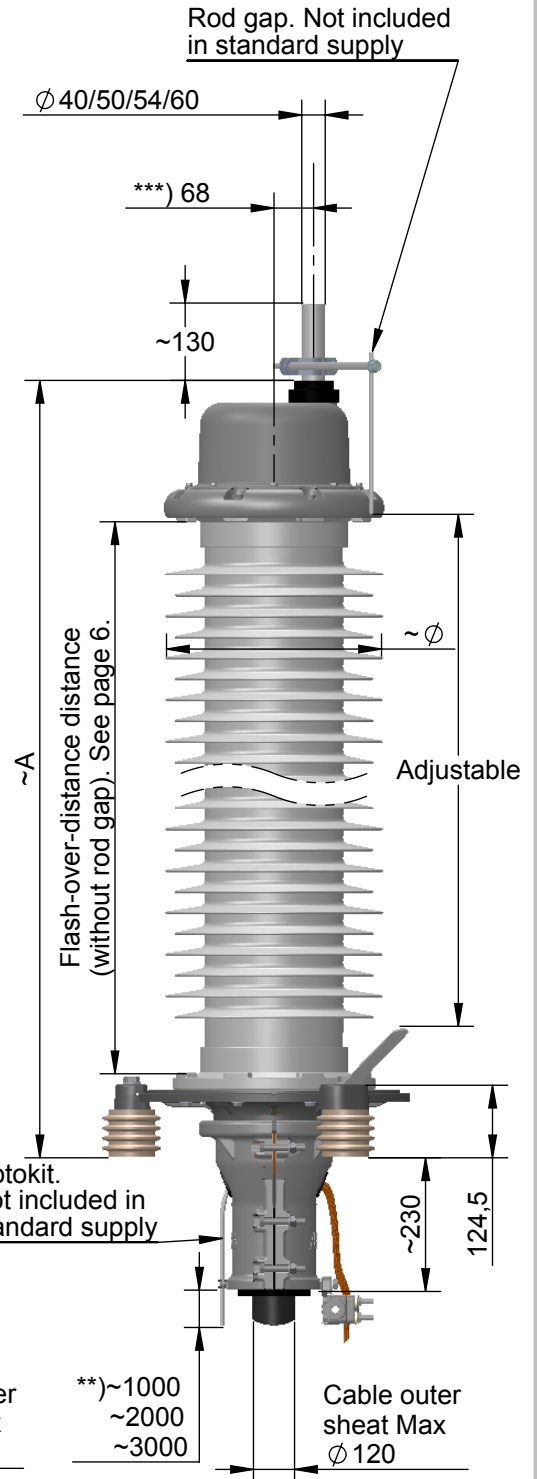
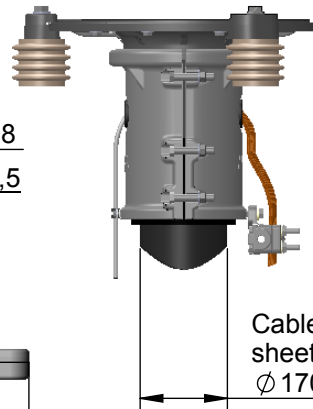
Reversible clamps for shields with areas between 55 and 1050mm² for (APECB 1452 P - 1703 P).



Possibility to connect the earth wire to cable lug. Not supplied by ABB.



Optional Ø170 Clamp



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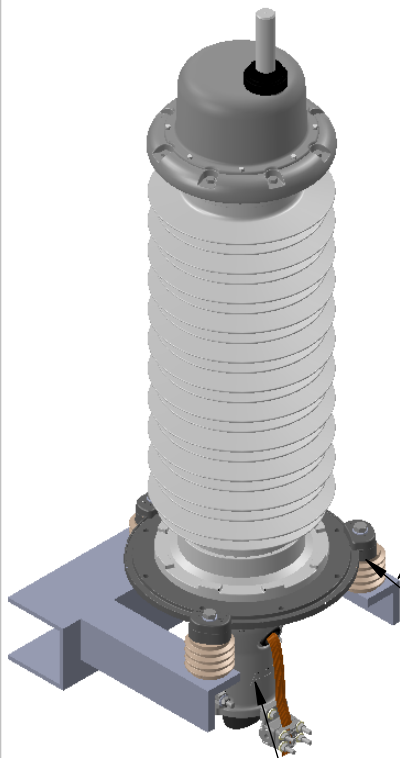
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Fastening on support with post insulators

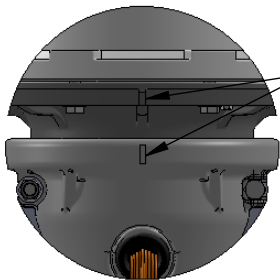
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- Three PIU APECB included in kit (X3)
- If needed four PIU APECB could be used. Optional (X4)

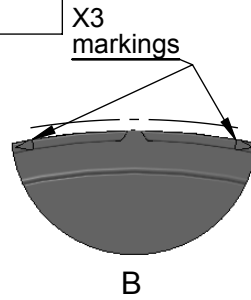


Not part of cable accessory delivery/supply

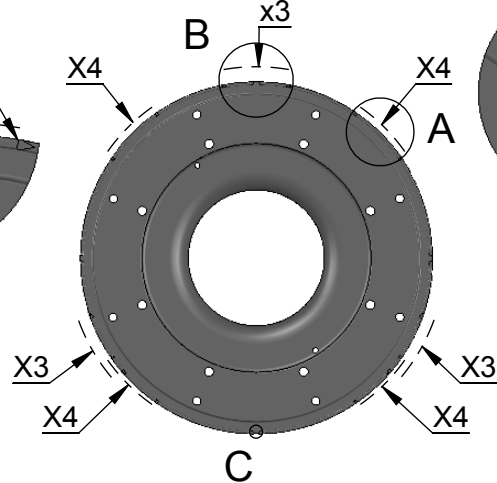
Cable clamps fully rotatable but with markings for front facing position.



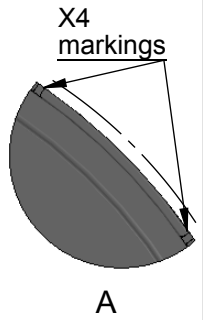
PIU position on box body



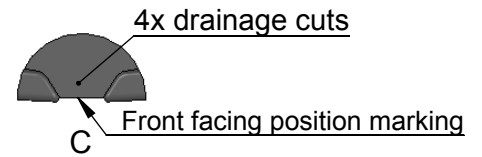
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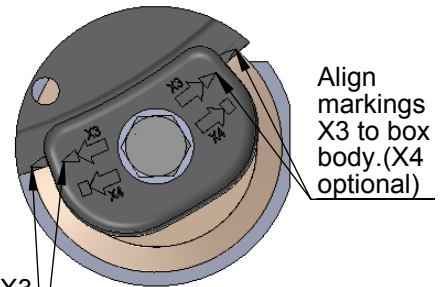
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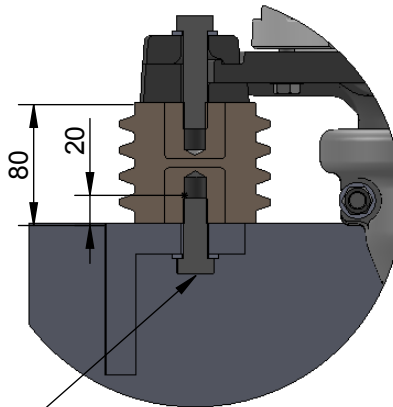
PIU fully rotatable but with markings for design intent position.



Align markings X3 to box body. (X4 optional)

Align markings X3 to box body. (X4 optional)

Post insulator fixed to the support with ~100Nm or suitable for chosen bolt, Max 200Nm. Recommendation M16 Min class 8.8 Required threaded grip length is 15-20mm. M16 bolts are not part of cable accessory delivery/supply.



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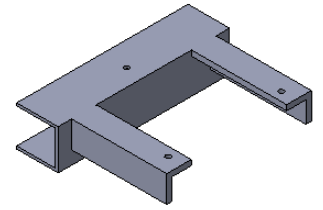
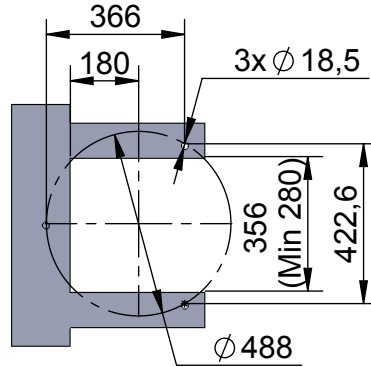
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Support design recommendations

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1. When use of:

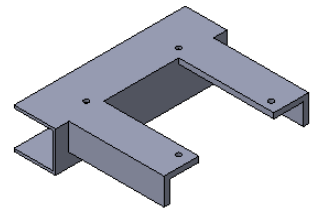
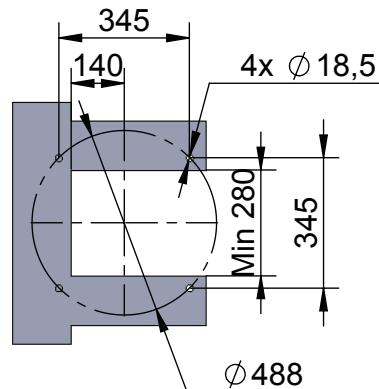
- Horizontal installation
- Three PIU
- Open support.



Opening and hole pattern needed.

2. When use of:

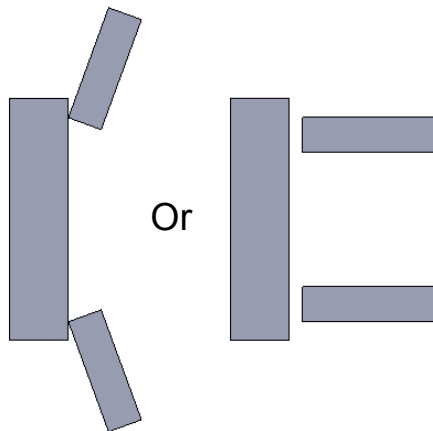
- Horizontal installation
- Four PIU (Optional).
- Open support.



Opening and hole pattern needed.

3. When use of:

- Vertical installation
- Three or Four PIU (Optional).
- Open support.
- Cable secured

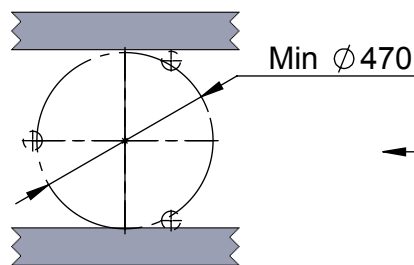


Dimension same as 1 and 2 when assembled. Recommendation is to use removable arms or foldable arms to the base beam for easier vertical assembly of the termination. No need of bringing the box body all the way out of the arms when it is parked below

Space in support ≥ 470 mm needed. The box body must be moved down ~ 400 during installation.

4. When use of:

- Vertical installation
- Three or Four PIU (Optional).
- Closed support.



Opening needed to move down box body ~ 400 mm.

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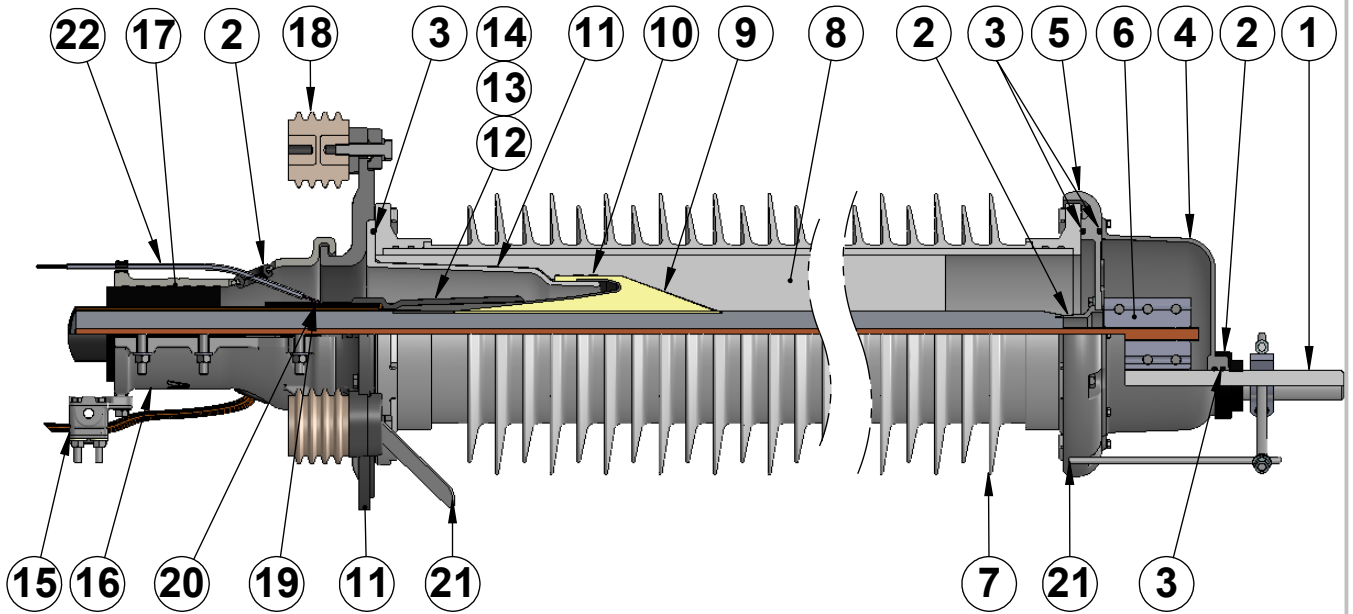
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Exposed screws, nuts and washers of stainless steel or hot galvanized steel

22	1	OKT2 Optokit	(Option)	Teflon
21	1	Rod gap	(Option)	Stainless steel
20	1	JSA2 (AL-foil cable)	(Option)	Tinned brass, Stainless steel
19	1	JSA1PB (Lead sheet cable)	(Option)	Soldering tin, Tinned copper
18	3	Support insulators		Epoxy
17	1	Fitting winding		Bitumized paper
16	2	Cable clamp		Aluminum
15	1	Screen connection clamp		Nickel coated brass
14	1	Cover winding		PVC tape
13	1	Insulating tightening winding		Self-bonding tape
12	1	Earthing		Tinned copper net
11	1	Flange / box body		Aluminum
10	2	Connection clamps		Stainless steel
9	1	Stress relief cone		EPDM rubber
8	1	Insulating oil		Polybutene
7	1	Insulator		Fibreglass epoxy / silicone
6	2	Conductor clamp		Aluminum
5	1	Top cover		Aluminum
4	1	Top cover cap		Aluminum
3	5	O-rings		Chloroprene rubber
2	4	Rubber sealing		EPDM rubber
1	1	Top bolt		Copper or Aluminum
Item No.	Qty.	Name of Item		Material

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Technical Data of APECB 84-170 kV P

Outdoor cable termination with composite insulator

Manufacturer	ABB AB
Country	Sweden
Type designation	APECB 841 P / 1452 P / 1703 P
Application	outdoor
Applicable standard	IEC 60840, IEEE Std 48 (1452 P)

Electrical data

APECB type	841 P	1452 P	1703 P
Highest voltage for equipment U_m (kV)	84	145	170
Rated voltage U (kV)	72	132-138	150-161
Rated frequency (Hz)	50/60	50/60	50/60
Lightning impulse voltage withstand BIL (kV)	380	650	750
Switching impulse voltage withstand SIL (kV)	N/A	N/A	N/A
Site pollution severity (SPS) class (IEC 60815)	e/very heavy	d/heavy	d/heavy
Creepage distance (mm)	3150	4350	5250
Protected creepage distance (mm)	2350	3250	3950
Flashover distance (mm)	880	1180	1380

Weight

Net weight, complete termination (kg)	90	100	110
Net weight, insulator (kg)	38	47	54

Stress control

Field control method	stress relief cone
Type	premoulded
Material	EPDM rubber

Top bolt

Bolt type	Al or Cu
-----------	----------

Cable type

Type	extruded insulation
Conductor	Al or Cu, stranded or solid
Screen / Sheath	Cu wire / lead, corrugated Al&Cu

Cable range

Prepared insulation diameter (mm)	45.5-107
Conductor, cross sectional area (mm ²)	185-2500
Outer diameter (max diameter as standard) (mm)	170

Optional equipment

Screen connection kit for copper wire and metal-PE laminate	SCK
Screen connection kit for corrugated aluminium sheath	JSA AL
Screen connection kit for lead or corrugated copper sheath	JSA Pb
Rod gap	GAP-APECB
Optical fiber kit for optofiber in screen	OKT 2
Installation tool for stress relief cone APECB 84-170kV	SV 140
Re-assembly kit	RE-APECB

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Technical Data of APECB 84-170 kV P

Outdoor cable termination with composite insulator

Routine test

Composite insulator	according to IEC 61462		
Insulating oil	- dielectric strength acc. to IEC 60156 - water content test acc. to Karl Fisher method		
Leakage test on components	flange, top cover and top cap		
All parts of the termination	visual inspection		
Stress relief cone routine tested according to IEC 60840 (kV)	84	145	170
Partial discharge test <5pC, 1.5U ₀ (kV) **	78	78	78
AC voltage withstand test, 30 minutes, 2.5U ₀ (kV) **	130	130	130

Storage conditions

When stored in original, unopened packaging at temperatures in the range of -30°C to 30°C:

Stress relief cone	10 years		
Tapes and grease	5 years		
Metal hardwares	no limit		
Insulating oil stored in original, unopened packaging at temperatures in the range of 5°C to 45°C and controlled environment.	10 years		

Installation requirements

Aproximate recommended ambient temperature during installation (°C)	+5 to +30		
Maximum installation angle from vertical position (°)	30		
Minimum centre-line distance between conductors (m)	1.3	1.6	1.8



Operation conditions

Maximum horizontal load on the top bolt (Max cantilever load) (N) *	2000		
Maximum vertical load on the top bolt (N) *	2000		
Maximum short circuit peak current level 1s (kA)	80		
Horizontal seismic acceleration peak value (g)	0.5		
Altitude site, without correction (m)	<1000		
Expected servicelife after installation (years)	>30		
Maintenance	free		

* The cable termination has been designed to withstand the following extreme load combinations: wind, ice, seismic and short circuit.

** The test objects are tested by using a rig. The test voltages are selected to obtain electric stresses similar or greater than those of the test object on the cable in the complete accessory when subjected to the test voltages as specified in §9.2 and §9.3 in IEC 60840.

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HDPE Conduit Pricing



Bill To:
 931082
 ISCO PROSPECT
 100 WITHERSPOON ST # 2WEST
 LOUISVILLE, KY 40202-1396

Ship To:
 TBD
 PORTLAND, OR 97035

Quotation

Quote Number	48000958
Quote Date	04/04/23
Expiration Date	04/11/23
Page	1 of 1

Payment Terms PREPAID	Customer Job/Project Name	Written By GRANT WILLIAMS
Freight Terms PREPAID AND ALLOW	Contact KCFAGEN@TPUD.ORG 503-815-862	Sales Rep NORTHWEST
Ship Via Best Way	Additional Info PORTLAND, OR - *BUDGETARY*	

#	Qty	UM	Product	Description	Each	Extended
1	7,000	FT	10161115	16" DR 11 IPS PIPE HDPE AWWA	48.05	336,350.00
2	28,000	FT	10061122	6" DR 11 IPS PIPE HDPE AWWA	8.25	231,000.00

FREIGHT INCLUDED WITH FULL ORDER

ISCO Standard Terms and Conditions apply. Please visit <http://www.isco-pipe.com/terms-and-conditions.aspx>

Merchandise Total	Tax(1)	Freight(2)	Quote Total
567,350.00	0.00	0.00	US \$ 567,350.00
1 Sales tax will be charged based on the ship to address at the time of invoice if there is no tax certificate on file.		Accepted By: _____	
2 Freight amount in this quote is an estimate only. Actual freight terms and charges will be determined at the time the order is placed.		Printed Name: _____	
		Date: _____	

100 WITHERSPOON ST * LOUISVILLE, KY 40202
800-345-4726

Contractor Bid for Overhead 115kV Transmission Line

Tillamook to Oceanside Transmission Line Project

PROPOSAL PRICE SCHEDULE

OCEANSIDE TRANSMISSION LINE PROJECT

Complete the following Proposal Evaluation Schedule. This schedule will be used for proposal evaluation purposes.

PROPOSAL ITEM A: OCEANSIDE TRANSMISSION LINE AND SUBSTATION DESIGN AND STUDIES

<u>Item</u>	<u>Description</u>	<u>Amount</u>
A1	Transmission line design and engineering package as specified in these Contract Documents with enough detail to allow equipment procurement and project construction. Includes Design Memo and studies.	\$ <u>342,200.20</u> / 2
A2	Substation design and engineering package as specified in these Contract Documents with enough detail to allow equipment procurement and project construction. Includes Design Memo and studies.	\$ <u>421,122.60</u>

PROPOSAL ITEM B: EQUIPMENT PROCUREMENT

<u>Item</u>	<u>Description</u>	<u>Amount</u>
B1	Procure all necessary equipment for the transmission line equipment, including but not limited to those as specified in these Construction Documents.	\$ <u>3,664,911.51</u>

<u>Item</u>	<u>Description</u>	<u>Amount</u>
B2	Procure all necessary equipment for the substation equipment, including but not limited to those as specified in these Construction Documents.	\$ <u>777,577.09</u>

PROPOSAL ITEM C: PROJECT CONSTRUCTION

C1	Mobilization for transmission and substation	\$ <u>1,327,719.84</u>
C2	Construct and install all necessary equipment for the transmission line and fiber optic cable, including but not limited to those as specified in these Construction Documents.	\$ <u>7,362,069.49</u>
C3	Construct and install all necessary equipment for the substation, including but not limited to those as specified in these Construction Documents.	\$ <u>1,978,713.96</u>
C4	De-mobilization for transmission and substation	\$ <u>109,239.95</u> / 2

Tillamook to Oceanside Transmission Line Project

PROPOSER

The name of the Proposer submitting this Proposal is High Country Line Construction, Inc.


_____ doing business at

2452 E. 6700 S, Unit A, Uintah UT 84405

Street City State Zip

which is the address to which all communications concerned with this Proposal and with the Contract shall be sent.

IN WITNESS hereto the undersigned has set their (its) hand this 18th day of January, 2022 2021



Signature of Proposer

VP Operations

Title

Appendix E
Compliance with Federal and State
Regulations

Categorical Exclusion Form



**U.S. DEPARTMENT OF AGRICULTURE RURAL DEVELOPMENT
 ENVIRONMENTAL CHECKLIST FOR CATEGORICAL EXCLUSIONS**

1. APPLICANT NAME:

2. NAME OF PROPOSAL (provide brief description):

3. ADDRESS OR GENERAL LOCATION OF PROPOSAL:

4. FEDERAL ACTION:	Loan	Grant	Guarantee	Construction Work Plan or Loan/System Design
--------------------	------	-------	-----------	--

5. APPLICABLE RD PROGRAM:

6. THIS PROPOSAL QUALIFIES AS A CATEGORICAL EXCLUSION IN ACCORDANCE WITH § 1970.53 _____ OR § 1970.54 _____

7. *ENVIRONMENTAL REPORT PREPARED FOR RD: YES NO

* This form can be used to document the consideration and incorporation by reference of environmental information from any source

8. Section 106 Findings:
 No Potential to Affect No Adverse Effect to Historic Properties
 No Historic Properties Affected

9. Endangered Species Act, Section 7 Findings:
 Species/Habitat - Not Present Species/Habitat Present - May Affect, Not Likely to Adversely Affect
 Species/Habitat - No Effect

10. IF PREPARED, ATTACH ENVIRONMENTAL REPORT (SEE EXHIBIT C)
 For the items listed below, indicate either a "Yes" or "No" in the appropriate columns. If the answer is "Yes" in the "Adversely Affected" column for any listed resources, then an extraordinary circumstance exists and the proposed action is not eligible for a Categorical Exclusion.

Resources	Resources Present		Effects to Resources		
	Yes	No	No Effect	Affected	Adversely Affected
a. Historic Properties/Cultural Resources (Historic Properties listed or eligible for listing in the National Register of Historic Places, sites of cultural or religious significance to tribes)					
b. Threatened or Endangered Species, Critical Habitat, State Listed Species					
c. Wetlands					
d. Floodplains (100 or 500 year floodplains)					
e. Formally Classified Lands (State/Federal Parks, Monuments, Natural Landmarks, Wilderness Areas, Wild and Scenic Rivers, National Forest System Lands, other Federal or State Lands, etc.)					
f. Water Resources (Sole Source Aquifers, Well-head protection areas, Watershed Protection Areas, etc.)					
g. Coastal Resources (Coastal Barrier Resources System or Coastal Zone Management Areas)					
h. Coral Reefs or Protected aquatic habitats (Only applies to American Samoa, Florida, Guam, Hawaii, Northern Marianna Islands, Puerto Rico, U.S. Virgin Islands)					
Questions	Yes	No			
i. Is the proposal located on Important Farmland (Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance) and if so, has Form AD-1006 been completed?					
j. Does the project threaten a violation of local, state, or federal statutory, regulatory, or permitting requirements? Have all necessary permits been identified?					
k. Is the proposal located within EPA-designated Non Attainment or Maintenance Areas for Air Quality Criteria Pollutants?					
l. Does the proposal result in the production of unpermitted hazardous materials or waste, or consist of construction of a new RCRA hazardous materials handling facility?					

Table (Con.)

m. Does the proposal have any Environmental Justice concerns or disproportionately high and adverse human health or environmental effects on minority populations or low-income populations?			
n. Is the proposal controversial for environmental reasons? If so, attach a summary of the controversy(ies) and any actions taken and resolutions necessary to respond to the concerns.			
o. Is the proposal controversial for other than environmental reasons? If so, attach a summary of the controversy(ies) and any actions taken and resolutions necessary to respond to the concerns.			

11. FINDING:

I find that the proposal meets the criteria established in 7 CFR §1970.53, "Categorical Exclusions Involving No or Minimal Disturbance," or §1970.54 (c), "Categorical Exclusions Involving Small-scale Development." Upon review of the proposal's description or the Environmental Report I find that the proposal is consistent with 40 CFR §1508.4, "Categorical Exclusion" and does not have any extraordinary circumstances or that the proposal individually or cumulatively does not have a significant effect on the human environment and, therefore, neither an Environmental Assessment nor an Environmental Impact Statement is required.

12. SIGNATURES:

12a. SIGNATURE OF PREPARER

DATE

NAME OF PREPARER

TITLE

12b. SIGNATURE OF STATE ENVIRONMENTAL
COORDINATOR OR NATIONAL ENVIRONMENTAL STAFF

DATE

NAME OF STATE ENVIRONMENTAL COORDINATOR OR
NATIONAL ENVIRONMENTAL STAFF

TITLE

12c. SIGNATURE OF APPROVING OFFICIAL

DATE

NAME OF APPROVING OFFICIAL

TITLE

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
101	Underground Consumers = 450 Miles = 600 System Work Plan Project Cost Estimate = \$300000		1970.53 (c)(8)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
102	Overhead Consumers = 150 Miles = 200 System Work Plan Project Cost Estimate = \$100000		1970.53 (c)(8)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
201B	KV = 25 Phase = 3 Conductor Type = Other From Location: Oceanside Sub To Location: Feeder 51 Miles = 3 System Work Plan Project Cost Estimate = \$2161225		1970.54 (c)(2)		NPA	No Effect	Present, Impacts IAW NWP 12	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
202	KV = Other Phase = 3 Conductor Type = 500 URD From Location: Feeder 35 To Location: Feeder 34 Miles = 1.5 System Work Plan Project Cost Estimate = \$852385	BUILD – This project is building approximately 1.5 miles of 3 phase 500 MCM underground distribution line. (See Figure 2.9).	1970.54 (c)(2)		NPA	No Effect	Present Impacts IAW NWP 12	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
302	Line Design: Powder Creek Reroute Miles = .08 System Work Plan Project Cost Estimate = \$26958	REBUILD – This project relocates approximately .08 miles of 1 phase overhead distribution line. Also installs a new 2 phase AAAC conductor. This project's reroute will be located along the Upper Nestucca Road. This project route is located in Section 3, Township 4S, Range 8W. (See Figure 2.2).	1970.54 (c)(2)	Relocate	NPA	No Effect	Not Present	Zone X	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
303	Line Design: Mohler to Rockaway Rebuild Miles = 6.2 System Work Plan Project Cost Estimate = \$1945387	REBUILD – This project consists of rebuilding approximately 6.2 miles of 1 phase BHD copper overhead distribution line. (See Figure 2.5).	1970.53 (d)(4)		NPA	NLAA OC coho salmon and designated critical habitats	Present , Impacts IAW NWP 12	Rebuild, no impact	None	No SSA Present	Present , No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
304	Line Design: Tidelands Reconnector Miles = 1.25 System Work Plan Project Cost Estimate = \$83186	REBUILD – This project consists of rebuilding approximately 1.25 miles of 2 phase #6 BHD overhead distribution line with new 2 phase #2 AAAC overhead distribution line. (See Figure 2.6).	1970.53 (d)(4)		NPA	NLAA OC coho salmon and designated critical habitats	Present , Impacts IAW NWP 12	Zone A. Rebuild, no impact	None	No SSA Present	Present , No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
305	Line Design: C Street Reconductor Miles = .3 System Work Plan Project Cost Estimate = \$79568	REBUILD – This project consists of rebuilding approximately 0.3 miles of three phase 3/0 T-wire to three phase 465 AAAC. (See Figure 2.12).	1970.53 (d)(4)		NPA	No Effect	Not Present	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
306	Line Design: Miller to TRR Reconductor Miles = 1.1 System Work Plan Project Cost Estimate = \$327818	REBUILD – This project consists of rebuilding approximate 0.7 miles of existing three phase 3/0 AAAC to 652 AAAC. (See Figure 2.14).	1970.53 (d)(4)		NPA	No Effect	Present Impacts IAW NWP 12	Zone A, No impact	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
307	Line Design: Tone Rd Rebuild Miles = 1 System Work Plan Project Cost Estimate = \$273182	REBUILD – This projects consists of rebuilding approximately 1 mile of three phase 3/0 AAAC to three phase 652 AAAC. (See Figure 2.15).	1970.53 (d)(4)		NPA	NLAA OC coho salmon and designated critical habitats	Present Impacts IAW NWP 12	Zone A, No impact	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
309	Line Design: Farmer Creek Bridge Reroute Miles = .13 System Work Plan Project Cost Estimate = \$113300	REBUILD – This project will convert approximately 650 feet of 3 phase 4 phase AAAC overhead distribution line to 500 MCM aluminum underground distribution line. This project route is located in Section 1, T4S, R10W. This route also follows along State Highway 101. The DOT will be adding onto the existing bridge in this area. (See Figure 2.3).	1970.54 (c)(2)	OHD-UGD	NPA	NLAA OC coho salmon and designated critical habitats	Present Impacts IAW NWP 12	Zone A, No Impact	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
310-1	Line Design: Sandlake Direct Buried Replacement Miles = 1.7 System Work Plan Project Cost Estimate = \$624102		1970.53 (d)(4)		NPA	No Effect	Present, Impacts IAW NWP 12	Zone X	USFS	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
310-2	Line Design: Viking Subdivision Direct Buried Replacement Miles = .67 System Work Plan Project Cost Estimate = \$199768	REBUILD – This project is replacing 1 phase aluminum underground distribution line with 1 phase aluminum, in conduit, underground distribution line.(See Figure 2.8)	1970.53 (d)(4)		NPA	No Effect	Not Present	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
310-3	Line Design: Ocean Way Direct Buried Replacement Miles = .15 System Work Plan Project Cost Estimate = \$53981	REBUILD – This project rebuilds approximately 0.15 miles of 1 phase 1/0 AL URD distribution line with #1/0 AL, in conduit, URD distribution line.(See Figure 2.10).	1970.53 (d)(4)		NPA	No Effect	Not Present	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
311	Line Design: Laneda Upgrade Miles = .06 System Work Plan Project Cost Estimate = \$106090	REBUILD – This projects consists of rebuilding 4 phase aluminum underground distribution line. (See Figure 2.7).	1970.53 (d)(4)		NPA	No Effect	Not Present	Zone X	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
312	Line Design: Hebo Voltage Conversion Miles = 61.96 System Work Plan Project Cost Estimate = \$450000		1970.53 (d)(4)	Hebo Conversion Preparation- This project reinsulates and replaces arrestors and transformers on the Hebo Feeders to 14.4/24.9k V. There are approximately 87 distribution transformers that are not dual voltage and must be replaced.	NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
313	Line Design: Nestucca Voltage Conversion Miles = 82.54 System Work Plan Project Cost Estimate = \$300000		1970.53 (d)(4)	Nestucca Conversion Preparation- This project reinsulates and replaces arrestors and transformers on the Nestucca Feeders to 14.4/24.9k V. There are approximately 46 distribution transformers that are not dual voltage and must be replaced.	NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
314	Line Design: Nehalem Voltage Conversion Miles = 54.84 System Work Plan Project Cost Estimate = \$210000		1970.53 (d)(4)	Nehalem Conversion Preparation- This project reinsulates and replaces arrestors and transformers on the Nehalem Feeders to 14.4/24.9k V. There are approximately 36 distribution transformers that are not dual voltage and must be replaced.	NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
315	Line Design: Third Street Reconductor Miles = 1 System Work Plan Project Cost Estimate = \$309000	REBUILD – This project is rebuilding approximately 1.0 mile of three phase #6 BHD copper to three phase #4/0 AAAC, 24.9 kV. (See Figure 2.17).	1970.53 (d)(4)		NPA	No Effect	Not Present	Zone X	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
316B	Line Design: Netarts Highway Rebuild Miles = 4.96 System Work Plan Project Cost Estimate = \$943408		1970.53 (d)(4)		NPA	No Effect	Present, Impacts IAW NWP 12	Zone X & Zone A, No Impacts	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
324B	Line Design: Happy Camp Rebuild Miles = 1.5 System Work Plan Project Cost Estimate = \$382454		1970.53 (d)(4)		NPA	No Effect	Present, Impacts IAW NWP 12	Zone X	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
329B	Line Design: Beaver Voltage Conversion Miles = 87.78 System Work Plan Project Cost Estimate = \$100000			Identified as Carryover, no record of inclusion in a previous loan												
331B	Line Design: Hebo to Nestucca Rebuild Miles = 1.7 System Work Plan Project Cost Estimate = \$380000			Identified as Carryover, no record of inclusion in a previous loan												
337-1	Line Design: Mohler Hwy 53 Rebuild Miles = 1.4 System Work Plan Project Cost Estimate = \$235265	REBUILD - This project is rebuilding approximately 1.4 miles of 6A copper overhead distribution line with #2 AAAC overhead distribution line. (See Figure 2.4).	1970.53 (d)(4)		NPA	NLAA OC coho salmon and designated critical habitats	Present	Rebuild, no impact	None	No SSA Present	Present, No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
402B	Station Designation: Netarts Oceanside Substation MVA = 33 kV to kV = 115 to 24.9 System Work Plan Project Cost Estimate = \$3848039		1970.54 (c)(1)		NPA	No Effect	Soils predominately not Hyrdic, on sloping uplands . No Impact	Zone X	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
501	Station Designation: Beaver Substation Description of Changes: Replace power transformer, control building, and distribution voltage portion of substation System Work Plan Project Cost Estimate = \$1652800		1970.53 (d)(10)		NPA	No Effect	Not Present	No impact	None	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
502	Station Designation: Nestucca Substation Description of Changes: Replace power transformer in Nestucca sub System Work Plan Project Cost Estimate = \$716250		1970.53 (d)(10)		NPA	No Effect	Not Present	No impact	None	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
503	Station Designation: Wilson T1 Description of Changes: Replace Wilson T1 Transformer System Work Plan Project Cost Estimate = \$1007855	REBUILD – This project consist of purchasing a new 24.32/40/44.4 MVA 115/24.9 kV transformer for the aging OH distribution line. (See Figure 2.16).	1970.53 (d)(10)		NPA	Not Present	Not Present	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
504	Station Designation: Nestucca Substation Description of Changes: Replace regulators at Nestucca Sub System Work Plan Project Cost Estimate = \$131127	REBUILD – This projects consists of rebuilding the Nestucca Substation regulators with new 20.8/24.9 kV 833 kVA regulators. (See Figure 2.11).	1970.53 (d)(10)		NPA	Not Present	Not Present	Zone X	None	No SSA Present	Not Present	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
601	Construction: Meters Transformer Type: Smart Meters Smart Grid Cost Estimate = \$3000000		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
601	Construction: Transformers Transformer Type: OH Transformers System Work Plan Project Cost Estimate = \$383266		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
601	Construction: Transformers Transformer Type: URD Transformers System Work Plan Project Cost Estimate = \$894286		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
603	Construction: Sectionalizing Equipment Transformer Type: Other System Work Plan Project Cost Estimate = \$480000		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
604	Construction: Regulators Transformer Type: Other System Work Plan Project Cost Estimate = \$160000		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
605	Construction: Capacitors Transformer Type: Other System Work Plan Project Cost Estimate = \$10800		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
606	Construction: Misc Replacements - Poles Transformer Type: Other System Work Plan Project Cost Estimate = \$1849500		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
607	Construction: Misc Replacements - Safety Violations Transformer Type: Other System Work Plan Project Cost Estimate = \$600000		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
705	Item Description: AMR/AMI Accessory Equip Smart Grid Cost Estimate = \$40000		1970.53 (a)(2)(iii)		NPA	No Effect	No impact	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None
810B	Line Designation: Tillamook to Oceanside Transmission Voltage = 115 Wire Size = Other Miles = 8.6 System Work Plan Project Cost Estimate = \$10500000		1970.54 (c)(2)		NPA	NLAA OC coho salmon and designated critical habitats	Present Impacts IAW NWP 12	No impact	No impact	No SSA Present	No Conversion	IAW State Laws	Tillamook and Clatstop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District
 Environmental CWP 2018-2021

Code Nbr	CWP Description	BER Description	1970 Cite	Comment	Historic/Cultural	T&ES	Wetlands	Floodplains	Formally Classified	Water	FPPA	State Law Compliance	Air Quality	HazMat/Haz Waste	EJ	Controversy
1301	Item Description: Headquarters and Warehouse Project Headquarters/Warehouse Cost Estimate = \$5000000	BUILD/REBUILT – This project consists of building a new warehouse and additional office space, also updated existing Tillamook main office. (See Figure 2.19).	1970.54 (a)(4) & 1970.53 (c)(3)		NPA	Not Present	Not Present	Zone X	None	No SSA Present	None	IAW State Laws	Tillamook and Clatsop Co. not listed as Non-attainment or maintenance	IAW Local, State and Fed Laws/ Regs	No disproportionate effects	None

From: [Howard, Basia - RD, Washington, DC](#)
To: [KC Fagen](#)
Cc: [Polacek, Steve - RD, Washington, DC](#)
Subject: RE: Tillamook People's Utility Electric Projects - SHPO Case No. 18-0547
Date: Monday, December 16, 2019 8:28:51 AM

Yes, we received a favorable response from the SHPO. Steve is working on summarizing everything that needs to be done so you what's required moving forward.

From: KC Fagen <kcfagen@tpud.org>
Sent: Monday, December 16, 2019 11:16 AM
To: Howard, Basia - RD, Washington, DC <basia.howard@usda.gov>
Subject: RE: Tillamook People's Utility Electric Projects - SHPO Case No. 18-0547

Basia;
It's been 30 days. Any response from SHPO!
Thank you.
KC

From: Howard, Basia - RD, Washington, DC <basia.howard@usda.gov>
Sent: Thursday, November 14, 2019 6:20 AM
To: ORSHPO.Clearance@oregon.gov
Cc: FRENCH Jamie * OPRD <Jamie.French@oregon.gov>; SCHWARTZ Tracy * OPRD <Tracy.Schwartz@oregon.gov>; Polacek, Steve - RD, Washington, DC <steve.polacek@usda.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; Anderson, Alexandria - RD, Washington, DC <alexandria.anderson@usda.gov>; KC Fagen <kcfagen@tpud.org>
Subject: RE: Tillamook People's Utility Electric Projects - SHPO Case No. 18-0547
Importance: High

Good Morning,

Please review the attached notification letter and corresponding enclosures that can be found in the link below regarding *the Tillamook People's Utility District Electric System Improvements Projects, SHPO Case No. 18-0547*.

Please note my email changed to Basia.Howard@usda.gov – PLEASE UPDATE YOUR ADDRESS BOOK!

Basia M. Howard M.A.
Deputy Federal Preservation Officer
Archaeologist, Rural Utilities Service
United States Department of Agriculture
Rural Development
United States Department of Agriculture
1400 Independence Ave., SW
Room 2244, Mail Stop 1570
Washington DC 20250

Phone: 202-205-9756 | Fax: 202-690-0694

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From: Howard, Basia - RD, Washington, DC

Sent: Wednesday, November 13, 2019 11:34 AM

To: ORSHPO.Clearance@oregon.gov

Cc: FRENCH Jamie * OPRD <Jamie.French@oregon.gov>; SCHWARTZ Tracy * OPRD <Tracy.Schwartz@oregon.gov>; Polacek, Steve - RD, Washington, DC <steve.polacek@usda.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; Anderson, Alexandria - RD, Washington, DC <alexandria.anderson@usda.gov>; KC Fagen <kcfagen@tpud.org>

Subject: Tillamook People's Utility Electric Projects - SHPO Case No. 18-0547

Importance: High

Good Morning,

Please review the attached notification letter and corresponding enclosures that can be found in the link below regarding *the Tillamook People's Utility District Electric System Improvements Projects, SHPO Case No. 18-0547*.

Please note my email changed to Basia.Howard@usda.gov – PLEASE UPDATE YOUR ADDRESS BOOK!

Basia M. Howard M.A.

Deputy Federal Preservation Officer

Archaeologist, Rural Utilities Service

United States Department of Agriculture

Rural Development

United States Department of Agriculture

1400 Independence Ave., SW

Room 2244, Mail Stop 1570

Washington DC 20250

Phone: 202-205-9756 | Fax: 202-690-0694

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Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

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www.oregonheritage.org



September 16, 2019

Ms. Basia Howard
Rural Development
USDA
1400 Independence Ave., SW
Room 2244, Mail Stop 1570
Washington, DC 20250

RE: SHPO Case No. 18-0547

Tillmook Peoples Utility District Environmental Report (TPUD)
Proposed projects
Multiple Legals

Dear Ms. Howard:

Thank you for providing documentation on the project referenced above. Based on the information provided, we concur with the following findings of effect for above-ground historic resources:

- TPUD Project No. 201B: Proposed undertaking will result in no historic properties affected.
- TPUD Project No. 303: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 305: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 306: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 307: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 310-1: Proposed undertaking will result in no historic properties affected.
- TPUD Project No. 310-2: Proposed undertaking will result in no historic properties affected.
- TPUD Project No. 310-3: Proposed undertaking will result in no historic properties affected.
- TPUD Project No. 311: Proposed undertaking will result in no historic properties affected.
- TPUD Project No. 315: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 316B: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 324B: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 337-1: Since the proposed improvement are being done in-kind, the undertaking will result in no adverse effect to historic properties.
- TPUD Project No. 1301: Proposed undertaking will result in no historic properties affected.

If project actions change, or our understanding of in-kind replacement (same materials, design, location, etc.) is incorrect, please continue consultation with our office.

However, we are not able to concur with the findings of effect for the following projects until additional information is provided to our office:

- TPUD Project No. 202: We are unclear about the proposed actions. Is the existing line overhead or underground? If the proposed project includes moving existing overhead lines to buried lines, the distribution line will need to be evaluated for National Register of Historic Places eligibility.
- TPUD Project No. 302: The relocation of existing overhead lines can diminish the integrity of location, setting, and design, which could result in an adverse effect if the line is eligible for listing. The distribution line will need to be evaluated for National Register of Historic Places eligibility. Also, if the line will be installed overhead in a new location, please consider visual impacts to historic properties.
- TPUD Project No. 607: Since the locations are unknown and project actions will not be in-kind, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary.
- TPUD Project No. 702: Since the locations are unknown, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary.
- TPUD Project No. 705: Since the locations are unknown, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary.

This letter refers to above-ground historic resources only. Comments pursuant to a review for archaeological resources, if applicable, will be sent separately. Local regulations, if any, still apply and review under local ordinances may be required. Please feel free to contact me if you have any questions, comments, or need additional assistance. We look forward to continued consultation on these undertakings.

Sincerely,

A handwritten signature in black ink, appearing to read "Tracy Schwartz", with a stylized flourish at the end.

Tracy Schwartz
Historic Preservation Specialist
(503) 986-0677
tracy.schwartz@oregon.gov



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

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Salem, OR 97301-1266

Phone (503) 986-0690

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September 26, 2017

Mr. Doug McFarland
CH2M
295 Bradley Blvd STE 300
Rachland, WA 99352

RE: SHPO Case No. 11-1115
Tillamook PUD Trans Line Proj
CRS
1S 9W 30 and 1S 10W 25-30, Tillamook County

Dear Mr. McFarland:

Our office recently received a report of archaeological investigations for the project referenced above. The report has been assigned SHPO Report# 29285 and added to the SHPO Library. We have reviewed the report and concur that a good faith effort has been implemented and the project will likely have no effect on any significant archaeological objects or sites. Based on the information provided, additional archaeological research is not anticipated for this project.

In the unlikely event an archaeological object or site (i.e., historic or prehistoric) is encountered during project implementation, all ground disturbance at the location should cease immediately until a professional archaeologist can be contacted to evaluate the discovery. Under state law (ORS 358.905-955 & ORS 97.740) archaeological sites, objects and human remains are protected on both public and private land in Oregon. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If you have any questions regarding any future discovery or this letter, feel free to contact me at your convenience.

Sincerely,

Matt Diederich, MAIS
SHPO Archaeologist
(503) 986-0577
Matthew.Diederich@oregon.gov





Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

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October 31, 2018

Mr. KC Fagen
Tillamook PUD
115 Pacific Avenue
Tillamook, OR

RE: SHPO Case No. 17-1801

Tillamook Peoples Utility District (TPUD) Tillamook Oceanside, Beaver and Nestucca Substation
Service Area Projects, APP0060683

Build, Re-build and Replace

Multiple Legals, Tillamook County

Dear Mr. Fagen:

We have reviewed the materials submitted on the project referenced above. For the determination of the Stillwell Ditch and Levee, we concur with the determination that the property is eligible for listing in the National Register of Historic Places. We also concur with the finding of no adverse effect for the proposed project. For the determination of the Port of Tillamook Bay Railroad, we concur with the determination that the property is eligible for listing in the National Register of Historic Places. We also concur with the finding of no adverse effect for the proposed project. For the determination of the Beaver Substation, we concur with the determination that the property is not eligible for listing in the National Register of Historic Places. We also concur with the finding of no effect for the proposed project. For the determination of the Unnamed Ditch, we concur with the determination that the property is not eligible for listing in the National Register of Historic Places. We also concur with the finding of no effect for the proposed project.

This letter refers to above-ground historic resources only. Comments pursuant to a review for archaeological resources, if applicable, will be sent separately.

Unless there are changes to the project, this concludes the requirement for consultation with our office under Section 106 of the National Historic Preservation Act (per 36 CFR Part 800) for above-ground historic resources. Local regulations, if any, still apply and review under local ordinances may be required. Please feel free to contact me if you have any questions, comments or need additional assistance.

Sincerely,

Robert Olguin
National Register Program Coordinator
(503) 986-0668
Robert.Olguin@oregon.gov



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

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www.oregonheritage.org



September 18, 2019

Ms. Basia Howard
Rural Development
USDA
1400 Independence Ave., SW
Room 2244, Mail Stop 1570
Washington, DC 20250

RE: SHPO Case No. 18-0547
Tillmook Peoples Utility District Environmental Report (TPUD)
Proposed projects
Multiple Legals

Dear Ms. Howard:

Oregon SHPO has completed its review of the undertaking referenced above. After review, our office is not able to concur that the undertaking will have no adverse effect on archaeological resources. Unfortunately, our office requests more information before we can concur with the findings.

- Improvement actions 304 and 309 were included in the initial project submission but they have not been included in the cultural resources report. Have these items been removed from the project or will they be addressed at another time?

- For improvement action 315, our office would request that the area adjacent to the IOOF cemetery be included in the monitoring areas. In older cemeteries we often find that the current fencing does not meet the original boundary of the cemetery. As such we often recommend monitoring for areas adjacent to cemeteries.

- For improvement action 316B. There are two known sites in or adjacent to the proposed project area. Our office would expect subsurface testing in these areas to ensure that known sites are not included in the current actions. Monitoring in known sites does not substitute for resource identification prior to construction.

If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

This letter refers to archaeological resources only. Comments pursuant to a review for above-ground historic resources will be sent separately.

Sincerely,

Jamie French, M.A.
SHPO Archaeologist
(503) 986-0729
Jamie.French@oregon.gov

Tillamook to Oceanside Transmission Line Permit Matrix							
Updated:	24-Aug-22						
Permit Agency	Permit/Approval	Permit/Approval Trigger	Application/Permit #	Approved (Y/N)	Date Acquired	Expiration Date	Notes
FEDERAL							
U.S. Army Corps of Engineers (USACE)	Nationwide Permit 12 (NWP). Utility Line Activities						Acquired through the Joint Permit Application (JPA) submitted to USACE and the Oregon Department of State Lands (DSL).
	Clean Water Act, Section 404 Permit	Regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Construction of foundations for overhead utility line towers, poles, and anchors in waters of the United States.	NWP-2017-449	N			USACE issued the project authorization under the NWP 12 on December 13, 2017. However, the authorization was rescinded once the USACE realized the levee where the project proposes support poles adjacent to, is a USACE regulated levee. A revised Joint Permit Application (JPA) will need to be submitted to USACE to update impacts and mitigation for the no access areas as well as for the newly proposed segment alternatives. The results of the levee review will also be included. The JPA will be used to apply for a Section 404 Permit (NWP 12).
	Rivers and Harbor Act of 1899, Section 10 Permit	Required for any work in, over, or under navigable waters of the United States. Placement of conductor over navigable waterways (Tillamook and Trask rivers).	NWP-2017-449	N			USACE issued the project authorization under the NWP 12 on December 13, 2017. However, the authorization was rescinded once the USACE realized the project proposes support poles adjacent to a USACE regulated levee. A revised Joint Permit Application (JPA) will need to be submitted to USACE to update impacts and mitigation for the no access areas as well as for the newly proposed segment alternatives. The results of the levee review will also be included. The JPA will be used to apply for a Section 10 Permit (NWP 12).
	Section 408	Required for any work in near a levee under the USACE's jurisdiction	0083-FY21				Requires multiple phases - Phase 1 was to secure the permit to perform geotech work, which was approved; and Phase 2 is securing the permit to install the power poles within the levee easement area. All information has been submitted and deemed complete.
U.S. Fish and Wildlife Service (USFWS)							
	Review of the Tillamook PUD Avian Protection Plan (APP)	The USFWS regulates compliance with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.		N/A			Tillamook PUD was going to incorporate USFWS comments into the programmatic APP. This will likely help with the proposed crossing of the Southern Flow Corridor.
	Southern Flow Corridor (SFC) crossing review	The Coastal Wetlands Grant Program at USFWS need to review the SFC crossing because of the federal Coastal Wetlands grant funds invested in the property.					
Federal Aviation Administration (FAA)							
	Determination of No Hazard To Air Navigation		2017-ANM-4573-OE	Y (Expired)	9-Nov-17	9-May-19	Transmission Line OCTL-Airport-1
	Determination of No Hazard To Air Navigation		2017-ANM-4574-OE	Y (Expired)	9-Nov-17	9-May-19	Transmission Line OCTL-Airport-2
	Determination of No Hazard To Air Navigation		2017-ANM-4575-OE	Y (Expired)	9-Nov-17	9-May-19	Transmission Line OCTL-Heliport-1
	Determination of No Hazard To Air Navigation		2017-ANM-4576-OE	Y (Expired)	9-Nov-17	9-May-19	Transmission Line OCTL-Heliport-2

Tillamook to Oceanside Transmission Line Permit Matrix							
Updated:	24-Aug-22						
Permit Agency	Permit/Approval	Permit/Approval Trigger	Application/Permit #	Approved (Y/N)	Date Acquired	Expiration Date	Notes
STATE OF OREGON							
Oregon Dept of State Lands (DSL)							
	Wetland Delineation Concurrence	Agency concurrence on the applicant's identification and boundary delineation of wetlands and waters.	2017-0354	Y	9-Mar-18	9-Mar-23	<p>The entire study area for the delineation was not field checked due to lack of property access. Areas within the study area with no access were investigated and mapped using offsite wetland determination methods. These areas were identified either as wetlands or uplands and therefore, received Preliminary Jurisdictional Determinations (PJDs) from DSL. Since PJDs are not suitable for removal-fill permitting, areas with PJDs will need checked, features delineated, HMT identified where applicable, and a report submitted with a new cover form and fee when access is granted and prior to any construction within these properties.</p> <p>DSL has said there are two options for incorporating: (1) the previous no access areas; and (2) route segment alternatives. Option 1: Resubmitting entire report with no access and alternatives included, which puts the entire project under one wetland delineation 5-year life. Option 2: Submit a new and separate wetland report for only the no access and alternatives and that report gets its own 5-year life, separate from the original wetland delineation concurrence.</p>
	Removal-Fill Permit	The Oregon Removal-Fill Law (ORS 196.795-990) requires projects obtain a permit if they remove or fill material of 50 cubic yards or more in waters of the state. Cut and fill (poles considered fill) of 50 cubic yards or more within wetlands required for construction of the project.	60683-FP	Y	15-Feb-19	28-Dec-22	A revised Joint Permit Application (JPA) will need to be submitted to DSL to update impacts and mitigation for the no access areas as well as for the newly proposed segment alternatives. The JPA will be used to apply for a revised Removal/Fill permit.
	Wilson, Trask, Nestucca Mitigation Bank Credits	Mitigation for wetland fill.	60683-FP	Y	22-Aug-18		
Oregon Watershed Enhancement Board (OWEB)							
	OWEB approval for crossing of the Southern Flow Corridor (SFC)	OWEB has a conservation easement over the SFC.					
Oregon Dept of Environmental Quality (DEQ)							
	Section 401 Water Quality Certification	Discharges requiring a federal license or permit must comply with State water quality standards. Required if federal CWA (Section 404) permit is issued.	NWP-2017-00449	Y	10-Jan-18		Need to discuss with USACE and DEQ to see if an updated/revised 401 is needed with updated/revised 404/10.
	National Pollutant Discharge Elimination System (NPDES), 1200-C Construction Stormwater Permit	Required for construction activities with surface area disturbance 1 acre or more. NPDES permits regulate stormwater and facility discharges into surface waters.		N			Apply within 6 mons from start of construction.

Tillamook to Oceanside Transmission Line Permit Matrix							
Updated:	24-Aug-22						
Permit Agency	Permit/Approval	Permit/Approval Trigger	Application/Permit #	Approved (Y/N)	Date Acquired	Expiration Date	Notes
Oregon State Historic Preservation Office (SHPO)							
	Cultural Survey Concurrence	Under state law (ORS 358.905-955 & ORS 97.740) archaeological sites, objects and human remains are protected on both public and private land in Oregon.	11-1115	Y	26-Sep-17	N/A	Need to survey and submit a supplemental report for project areas where there was no property access.
Oregon Dept of Transportation (ODOT)							
	Permit to Occupy or Perform Operations upon a State Highway	Highway 101 right-of-way crossing.	01M-39154	Y	17-Oct-17		Notification to ODOT dispatch prior to any traffic control occurs.
Oregon Dept of Aviation (ODA)							
	Oregon Dept of Aviation comments regarding the construction of utility poles		2017-ODA-C-138-141-OE	Y	25-Sep-17	22-Mar-19	
TILLAMOOK COUNTY							
Tillamook County							
	Land Use Permits/Approvals						
	TYPE 1 Administrative Review Approval	For crossing of the following zoning districts: Farm-1, Estuary Conservation-1	851-17-000448-PLNG-02	Y	29-Aug-18		Need to modify permit if route segment alternative crosses these zones.
	TYPE 2 Floodplain Development Permit	For crossing of the floodway	851-17-000448	Y	29-Aug-18		Need to modify permit if route segment alternative crosses these zones.
	TYPE 3 Conditional Use Permit	For crossing of the following zoning districts: Forest, Estuary Natural, Rural Commercial, and Rural Residential	851-17-000448-PLNG-01	Y	29-Aug-18		Need to modify permit if route segment alternative crosses these zones.
	Appeal to the Oregon Land Use Board of Appeals (LUBA) (all 3 permits/approvals)		2018-115	Y	14-Mar-19		
	Appeal to Oregon State Court of Appeals			Y	19-Jun-19		
	County Extension of 3 permits/approvals		851-20-000228-PLNG	Y	24-Jun-20		Extension good through August 29, 2022
	County Extension of 3 permits/approvals		851-20-000228-PLNG	Y	24-Jun-20		Extension good through August 29, 2023
County Roads							
	Wilson River Loop		5251	Y	19-Oct-17		
	Goodspeed Road			N			After County Permits
	Bayocean Road			N			After County Permits

Environmental - Main Screen

Construction Number: 2701 | Borrower Name: Tillamook People's Utility District

Environmental

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Underground Consumers = 450 Miles = 600 System Work Plan Project Cost Estimate = \$300000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Overhead Consumers = 150 Miles = 200 System Work Plan Project Cost Estimate = \$100000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Item Description: Headquarters and Warehouse Project Headquarters/Warehouse Cost Estimate = \$5000000	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number 1301

CWP Description	Special Circumstances	Proposed Classification	Approval Date
KV = 25 Phase = 3 Conductor Type = Other From Location: Oceanside Sub To Location: Feeder 51 Miles = 3 System Work Plan Project Cost Estimate = \$2161225	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number 201B

Other Connected Projects Project 402B, the proposed Oceanside Substation and 810B, the Oceanside transmission li

ROW/Site Description Road ROW

Land Jurisdiction Private

Other Required Federal Permits/Authorizations none

CWP Description	Special Circumstances	Proposed Classification	Approval Date
KV = Other Phase = 3 Conductor Type = 500 URD From Location: Feeder 35 To Location: Feeder 34 Miles = 1.5 System Work Plan Project Cost Estimate = \$852385	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number	202
Other Connected Projects	none.
ROW/Site Description	Road ROW
Land Jurisdiction	Private
Other Required Federal Permits/Authorizations	None, The power line will be installed in County Road Right-of-way

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Powder Creek Reroute Miles = .08 System Work Plan Project Cost Estimate = \$26958	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number	302
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CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Mohler to Rockaway Rebuild Miles = 6.2 System Work Plan Project Cost Estimate = \$1945387	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Tidelands Reconductor Miles = 1.25 System Work Plan Project Cost Estimate = \$83186	No		

Environmental - Details

Code Number	304
--------------------	------------

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: C Street Reconductor Miles = .3 System Work Plan Project Cost Estimate = \$79568	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Miller to TRR Recondutor Miles = 1.1 System Work Plan Project Cost Estimate = \$327818	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Tone Rd Rebuild Miles = 1 System Work Plan Project Cost Estimate = \$273182	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Farmer Creek Bridge Route Miles = .13 System Work Plan Project Cost Estimate = \$113300	No		

Environmental - Details

Code Number 309

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Sandlake Direct Buried Replacement Miles = 1.7 System Work Plan Project Cost Estimate = \$624102	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Viking Subdivision Direct Buried Replacement Miles = .67 System Work Plan Project Cost Estimate = \$199768	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Ocean Way Direct Buried Replacement Miles = .15 System Work Plan Project Cost Estimate = \$53981	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Laneda Upgrade Miles = .06 System Work Plan Project Cost Estimate = \$106090	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Hebo Voltage Conversion Miles = 61.96 System Work Plan Project Cost Estimate = \$450000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Nestucca Voltage Conversion Miles = 82.54 System Work Plan Project Cost Estimate = \$300000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Nehalem Voltage Conversion Miles = 54.84 System Work Plan Project Cost Estimate = \$210000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Third Street Reconduct or Miles = 1 System Work Plan Project Cost Estimate = \$309000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Netarts Highway Rebuilt Miles = 4.96 System Work Plan Project Cost Estimate = \$943408	No	Category Exclusion (CatEx)	05/31/2019

Environmental - Details

Code Number 316B

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Happy Camp Rebuild Miles = 1.5 System Work Plan Project Cost Estimate = \$382454	No	Category Exclusion (CatEx)	05/31/2019

Environmental - Details

Code Number 324B

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Beaver Voltage Conversion Miles = 87.78 System Work Plan Project Cost Estimate = \$100000	No	Category Exclusion Environmental Report (CatEx ER)	
Environmental - Details			
Code Number		329B	

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Hebo to Nestucca Rebuild Miles = 1.7 System Work Plan Project Cost Estimate = \$380000	No	Category Exclusion Environmental Report (CatEx ER)	
Environmental - Details			
Code Number		331B	

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Design: Mohler Hwy 53 Rebuild Miles = 1.4 System Work Plan Project Cost Estimate = \$235265	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Station Designation: Netarts Oceanside Substation MVA = 33 kV to kV = 115 to 24.9 System Work Plan Project Cost Estimate = \$3848039	No	Category Exclusion (CatEx)	05/31/2019
Environmental - Details			
Code Number		402B	
Other Connected Projects		810B the Oceanside Transmission line and 402B the substation distribution feeder exit..	
ROW/Site Description		Industrial, Commercial or Educational Complex	
Land Jurisdiction		Private	
Other Required Federal Permits/Authorizations		None	

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Station Designation: Beaver Substation Description of Changes: Replace power transformer, control building, and distribution voltage portion of substation System Work Plan Project Cost Estimate = \$1652800	No	Category Exclusion Environmental Report (CatEx ER)	

Environmental - Details

Code Number 501

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Station Designation: Nestucca Substation Description of Changes: Replace power transformer in Nestucca sub System Work Plan Project Cost Estimate = \$716250	No	Category Exclusion Environmental Report (CatEx ER)	

Environmental - Details

Code Number 502

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Station Designation: Wilson T1 Description of Changes: Replace Wilson T1 Transformer System Work Plan Project Cost Estimate = \$1007855	No		

Environmental - Details

Code Number 503

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Station Designation: Nestucca Substation Description of Changes: Replace regulators at Nestucca Sub System Work Plan Project Cost Estimate = \$131127	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Meters Transformer Type: Smart Meters Smart Grid Cost Estimate = \$3000000	No	Category Exclusion (CatEx)	

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Transformers Transformer Type: OH Transformers System Work Plan Project Cost Estimate = \$383266	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Transformers Transformer Type: URD Transformers System Work Plan Project Cost Estimate = \$894286	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Sectionalizing Equipment Transformer Type: Other System Work Plan Project Cost Estimate = \$480000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Regulators Transformer Type: Other System Work Plan Project Cost Estimate = \$160000	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Capacitors Transformer Type: Other System Work Plan Project Cost Estimate = \$10800	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Misc Replacements - Poles Transformer Type: Other System Work Plan Project Cost Estimate = \$1849500	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Misc Replacements - Safety Violations Transformer Type: Other System Work Plan Project Cost Estimate = \$600000	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number 607

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: URD or OH Conductor Replacements Transformer Type: Other System Work Plan Project Cost Estimate = \$520000	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number 608

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Construction: Oregon DOT Hwy 101 Transformer Type: Other System Work Plan Project Cost Estimate = \$203000	No		

Environmental - Details

Code Number 610

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Item Description: Security Lights System Work Plan Project Cost Estimate = \$21400	No	Category Exclusion (CatEx)	05/31/2019

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Item Description: Other System Work Plan Project Cost Estimate = \$100000	No	Category Exclusion Environmental Report (CatEx ER)	

Environmental - Details

Code Number 703

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Item Description: AMR/AMI Accessory Equip Smart Grid Cost Estimate = \$40000	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number 705

CWP Description	Special Circumstances	Proposed Classification	Approval Date
Line Designation: Tillamook to Oceanside Transmission Voltage = 115 Wire Size = Other Miles = 8.6 System Work Plan Project Cost Estimate = \$10500000	No	Category Exclusion Environmental Report (CatEx ER)	05/31/2019

Environmental - Details

Code Number	810B
Other Connected Projects	402B the Oceanside Substation and 201B the distribution feeder exit
ROW/Site Description	Agricultural land under cultivation
Land Jurisdiction	Private
Other Required Federal Permits/Authorizations	None



Rural Development

Rural Utilities Service

1400 Independence
Ave SW, Room 2244
Stop 1571
Washington, DC
20250

Voice 202.205.9805
Fax 202.690.0649

To: Kenneth Solano
Engineering Branch Chief
Office of Loan Origination and Approval

From: Steve Polacek
Environmental Protection Specialist
Engineering and Environmental Staff

Date: March 12, 2020

Subject: Tillamook Construction Workplan, CWP - 2018 - 2021, National Programmatic Agreement Compliance

Environmental review of the Tillamook PUD 2018-2020 Construction Work Plan was conditioned on compliance with the Nationwide Programmatic Agreement Among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation for Sequencing Section 106 (NPA). Though continued consultation between Rural Utility Service, Tillamook PUD, the Oregon State Historic Preservation Office and other interested parties, Tillamook PUD has met the requirements of the NPA for their projects as follows:

- Projects 201B, 202, 302, 304, 309, 310-2, 310-3, 311, 312, 313, 314, 402B, 501, 502, 503, 504, 601, 601 (pole top), 601 (pad mount), 603, 604, 605, 606, 607, 608, 608-1, 702, 705, 810-B and 1301 have completed the S016 process and require no further action
- Projects 303, 305, 306, 307, 315, 316B, 324B, 337-1 are conditioned on in-kind replacement (same materials, design, location etc.)
- Projects 315 & 316B are conditioned on monitoring and a monitoring report to be submitted to RUS prior to dissemination to interested parties
- Project 310-1 is conditioned on monitoring and a monitoring report if open trenching is used to be submitted to RUS prior to dissemination to interested parties
- Project 324B is conditioned on monitoring and a monitoring report for ground disturbance around site 35TI103 to be submitted to RUS prior to dissemination to interested parties



10/30/2019

Rural Development
Rural Utilities Service
1400 Independence
Ave SW, Room 2230
Stop 1570,
Washington, DC,
20250
Voice 202.695.2540
Fax 202.690.0649

Christine Curran
Deputy state Historic Preservation Officer
Oregon State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

RE: USDA RD RUS Staff Finding of No Historic Properties Affected
Tillamook People's Utility District 2018-2021 Construction Work Plan SHPO 18-0547
Tillamook County, OR

Dear Ms. Curran:

As you know, the Tillamook People's Utility District (TPUD) is seeking financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its Electric Program for their 2018-2021 Construction Work Plan (CWP). RUS has elected to apply the *Nationwide Programmatic Agreement among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on Historic Preservation for Sequencing Section 106* (NPA), to obligate funds before completing Section 106.

This letter is in response to the September 16th, 2019 letter (Letter 1) from Tracy Schwartz regarding above ground historic resources, and the September 18th, 2019 letter (Letter 2) from Jamie French concerning below ground resources. RUS's responses are provided as subparagraphs to the Oregon State Historic Preservation Office's (SHPO) comments below.

From Letter 1, RUS will be addressing the following issues:

SHPO Question: TPUD Project No. 202: We are unclear about the proposed actions. Is the existing line overhead or underground? If the proposed project includes moving existing overhead lines to buried lines, the distribution line will need to be evaluated for National Register of Historic Places eligibility.

RUS Response: This project code involves moving some of the power lines rebuilt in 1980 from overhead to underground and upgrading existing underground lines. RUS understands the SHPO's concerns however, this line has been significantly modified for

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over 50 years, including modification such as clearing of the Right of Way (ROW) and other significant ground disturbing activities, movement of the line, repairs, and maintenance with non-historic materials. Even if the line were eligible for the National Register, it does not meet most, if not all, of the National Register's seven aspects of integrity. Therefore, the qualities and characteristics that may have made it eligible under any of the Criteria no longer exist. Nevertheless, even if the line still had integrity, it would not meet Criteria B, C, or D because it is not associated with an individual who has made a significant contribution to history (B); it is not the work of a master and/or does not possess high artistic value; nor can it be considered a true representative of its type or an important example within its historic context (C); and it has no potential to contribute information important to the history or prehistory of the area (D). Finally, even if the line were eligible under Criterion A, events that have made a significant contribution to history, and still had enough integrity to convey that significance, which it does not, the current proposed project's current associated modifications and maintenance are de minimis compared to that of the past and would not jeopardize the integrity of the line to the extent that it would no longer be eligible under that Criteria. Nevertheless, RUS will have an inadvertent discovery plan in place and will notify the SHPO and other consulting parties should any cultural resources be unearthed.

SHPO Question: TPUD Project No. 302: The relocation of existing overhead lines can diminish the integrity of location, setting, and design, which could result in an adverse effect if the line is eligible for listing. The distribution line will need to be evaluated for National Register of Historic Places eligibility. Also, if the line will be installed overhead in a new location, please consider visual impacts to historic properties.

RUS Response: The line in question has already been relocated during the last 50 years, including replacement of poles in 1997, variations in movement of location, and spanning widths, to the extent that even had the line been eligible, it does not meet most, if not all, of the National Register's seven aspects of integrity. Therefore, the qualities and characteristics that may have made it eligible under any of the Criteria no longer exist. Nevertheless, even if the line still had integrity, it would not meet Criteria B, C, or D because it is not associated with an individual who has made a significant contribution to history (B); it is not the work of a master and/or does not possess high artistic value; nor can it be considered a true representative of its type or an important example within its historic context (C); and it has no potential to contribute information important to the history or prehistory of the area (D). Finally, even if the line were eligible under Criterion A, events that have made a significant contribution to history, and still had enough integrity to convey that significance, which it does not, the current proposed project's movements are de minimis compared to past movement and therefore, would not jeopardize the integrity of the line to the extent that it would no

longer be eligible under that Criteria. Nevertheless, RUS will have an inadvertent discovery plan in place and will notify the SHPO and other consulting parties should any cultural resources be unearthed.

SHPO Question: TPUD Project No. 607: Since the locations are unknown and project actions will not be in-kind, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary.

RUS Response: This project will occur in currently unidentified locations and were not mapped and in-kind above grade facilities, i.e. a 40-foot wood pole would be replaced with a 45-foot wood pole in the same location. These are future maintenance projects and/or replacement projects caused by damages, failures, or safety improvements. This project will consist of correcting safety/clearance violations that have yet to be identified. Maintenance activities such as these are generally not considered undertakings under Section 106, or significant impacts to integrity. Furthermore, the lines do not meet most, if not all, of the National Register's seven aspects of integrity. Therefore, the qualities and characteristics that may have made them eligible under any of the Criteria no longer exist.

SHPO Question: TPUD Project No. 702: Since the locations are unknown, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary. However, RUS has made a reasonable and good faith effort to address these locations and none are likely to be eligible under criteria A-D. Furthermore, these would be routine changes made to continue or improve the essential original function and would not normally constitute a loss of integrity that would make them eligible.

RUS Response: This project will occur in currently unidentified locations and were not mapped or will upgrade existing street lights to newer night sky compliant LED lamps. These are future maintenance projects and/or replacement projects caused by damages, failures, or safety improvements. As noted above, maintenance activities such as these are generally not considered undertakings under Section 106, or significant impacts to integrity. Furthermore, the lines do not meet most, if not all, of the National Register's seven aspects of integrity. Therefore, the qualities and characteristics that may have made them eligible under any of the Criteria no longer exist.

SHPO Question: TPUD Project No. 705: Since the locations are unknown, we are not able to concur with any findings of effect until locations are known and National Register evaluations are completed as necessary.

RUS Response: This project will occur in currently unidentified locations and were not mapped. These are future maintenance projects and/or replacement projects caused by damages, failures, or safety improvements. Project 705 includes the placement or

replacement of electric meters. Maintenance activities such as these are generally not considered undertakings under Section 106, or significant impacts to integrity. Furthermore, the lines do not meet most, if not all, of the National Register's seven aspects of integrity. Therefore, the qualities and characteristics that may have made them eligible under any of the Criteria no longer exist.

From Letter 2, RUS will be discussing the following issues:

SHPO Question: Improvement actions 304 and 309 were included in the initial project submission but they have not been included in the cultural resources report. Have these items been removed from the project or will they be addressed at another time?

RUS Response: Code 304 and 309 are no longer being funded using RUS dollars and thus is no longer a part of the Section 106 review process.

SHPO Question: For improvement action 315, our office would request that the area adjacent to the IOOF cemetery be included in the monitoring areas. In older cemeteries we often find that the current fencing does not meet the original boundary of the cemetery. As such we often recommend monitoring for areas adjacent to cemeteries.

RUS Response: We agree that this area should be included in the monitoring plan.

SHPO Question: For improvement action 316B. There are two known sites in or adjacent to the proposed project area. Our office would expect subsurface testing in these areas to ensure that known sites are not included in the current actions. Monitoring in known sites does not substitute for resource identification prior to construction.

RUS Response: This area was previously surveyed for a fiber optic project (SHPO report #25787), and no cultural resources were observed. No archaeological resources were identified during Jacob's reconnaissance or intensive pedestrian surveys of the APE. Some poles will remain in the same location, in the same hole. Other poles will be replaced immediately beside the existing pole. Further, the level of disturbance in the ROW where poles will be replaced is disturbed to the extent that any resource that was once there would no longer be eligible for the NRHP. RUS believes that proceeding under the inadvertent discovery plan is reasonable.

Overall, RUS has made a reasonable and good faith effort to identify and address areas of concern. Our efforts are in line with the Advisory Council on Historic Preservation's *Reasonable and Good Faith Identification Standard in Section 106 Review*. As you may know this guidance does not require RUS to:

- Obtain the "approval" of a SHPO/THPO or other consulting party;

- Identify every historic property within the APE.;
- Investigations outside of, or below, a properly documented APE; or
- Ground verify the entire APE.

Accordingly, the RUS is submitting a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by the SHPO. Please provide your concurrence or objection, **electronically** within **30** days of your receipt of this recommended finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Basia Howard, RUS Deputy FPO, at 202-205-9756 or via email at Basia.Howard@usda.gov.

Sincerely,

Barbara Britton
Director, Engineering and Environmental Staff
Water and Environmental Programs
Rural Utilities Service

Enclosure(s)

September 16th, 2019 SHPO Response Letter

September 18th, 2019 SHPO Response Letter

CC

Tracy Schwartz

Jamie French

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0572-0032. The time required to complete this information collection is estimated to average 10 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This data will be used by RUS to review your financial situation. Your response is required (7 USC 901 et seq.) and is not confidential

USDA-RUS		Form Approved OMB No. 0572-0032	
COST ESTIMATES AND LOAN BUDGET		BORROWER AND LOAN DESIGNATION	
FOR ELECTRIC BORROWERS To: U.S. Dept. of Agriculture, RUS, Washington, D. C. 20250		Tillamook P.U.D.	Y8
INSTRUCTIONS See tabs Pg1 Instr through Pg4 Instr		CUT OFF DATE: (Month, Year)	
SECTION A. COST ESTIMATES		LOAN PERIOD CWP PERIOD (W/ AMENDMENTS)	YEARS (EXAMPLE : 2010-2011)
1. DISTRIBUTION			
100. a. New Line(Excluding Tie-Lines)			
<u>Construction</u>	<u>Consumers</u>	<u>Miles</u>	
101 <u>Underground</u>	450	600.0	\$300,000
102 <u>Overhead</u>	150	200.0	\$100,000
Total Consumers :	600	Total Miles :	800.0
	Subtotal Code 100		\$400,000
200. b. New Tie-Lines			
<u>Line Designation</u>		<u>Miles</u>	
201B <u>KV = 25 Phase = 3 Conductor Type = Other From Location: Oceanside Sub To Location: Feeder 51 Miles = 3 System Work Plan Project</u>		3.0	\$2,161,225
202 <u>KV = Other Phase = 3 Conductor Type = 500 URD From Location: Feeder 35 To Location: Feeder 34 Miles = 1.5 System Work Plan Project</u>		1.5	\$852,385
-	Subtotal Code 200 from page 1A	0.0	\$0
-	Subtotal Code 200 from page 1B	0.0	\$0
-	Subtotal Code 200 (Includes subtotals from page 2A and 2B)	4.5	\$3,013,610
300 c. Conversion and Line Changes			
<u>Line Designation</u>		<u>Miles</u>	
302 <u>Line Design: Powder Creek Reroute Description: System Work Plan Project</u>		0.08	\$26,958
303 <u>Line Design: Mohler to Rockaway Rebuild Description: System Work Plan Project</u>		6.2	\$1,945,387
305 <u>Line Design: C Street Reconnector Description: System Work Plan Project</u>		0.3	\$79,569
306 <u>Line Design: Miller to TRR Reconnector Description: System Work Plan Project</u>		1.1	\$327,813
307 <u>Line Design: Tone Rd Rebuild Description: System Work Plan Project</u>		1.0	\$273,182
310-1 <u>Line Design: Sandlake Direct Buried Replacement Description: System Work Plan Project</u>		1.7	\$624,102
-	Subtotal Code 300 from page 1A	62.84	\$809,839
-	Subtotal Code 300 from page 1B	146.24	\$2,380,127
-	Subtotal Code 300 (Includes subtotals from page 1A and 1B)	219.46	\$6,466,981
400 New Substations, Switching Stations, Metering Points			
<u>Station Designation</u>	<u>MVA</u>	<u>kV to kV</u>	
402B <u>Netarts Oceanside Substation</u>	33	115 to 24.9	\$3,848,039
-	Subtotal Code 400 (Includes subtotals from page 1A and 1B)	-	\$3,848,039

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)			BORROWER'S COST ESTIMATE	RUS USE ONLY
200.	b. New Tie-Lines			
	<u>Line Designation</u>	<u>Miles</u>		
	Subtotal Code 200 (transfers to page 1)		\$0	
300	c. Conversion and Line Changes (Contd)			
	<u>Line Designation</u>	<u>Miles</u>		
310-2	<u>Line Design: Viking Subdivision Direct Buried Replacement Description: System Work Plan Project</u>	<u>0.67</u>	<u>\$199,768</u>	-
310-3	<u>Line Design: Ocean Way Direct Buried Replacement Description: System Work Plan Project</u>	<u>0.15</u>	<u>\$53,981</u>	-
311	<u>Line Design: Laneda Upgrade Description: System Work Plan Project</u>	<u>0.06</u>	<u>\$106,090</u>	-
312	<u>Line Design: Hebo Voltage Conversion Description: System Work Plan Project</u>	<u>61.96</u>	<u>\$450,000</u>	-
	Subtotal Code 300		<u>\$809,839</u>	
	Code 400 - New Substations, Switching Stations, Metering Points (Contd)			
	<u>Station Designation</u>	<u>MVA</u>	<u>kV to kV</u>	
	Subtotal Code 400		\$0	

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)			BORROWER'S COST ESTIMATE	RUS USE ONLY
200.	b. New Tie-Lines			
	<u>Line Designation</u>	<u>Miles</u>		
	Subtotal Code 200	0.0	\$0	
300	c. Conversion and Line Changes (Contd)			
	<u>Line Designation</u>	<u>Miles</u>		
313	<u>Line Design: Nestucca Voltage Conversion Description: System Work Plan Project</u>	82.54	\$300,000	-
314	<u>Line Design: Nehalem Voltage Conversion Description: System Work Plan Project</u>	54.84	\$210,000	-
315	<u>Line Design: Third Street Reconductor Description: System Work Plan Project</u>	1.0	\$309,000	-
316B	<u>Line Design: Netarts Highway Rebuild Description: System Work Plan Project</u>	4.96	\$943,408	-
324B	<u>Line Design: Happy Camp Rebuild Description: System Work Plan Project</u>	1.5	\$382,454	-
337-1	<u>Line Design: Mohler Hwy 53 Rebuild Description: System Work Plan Project</u>	1.4	\$235,265	-
	Subtotal Code 300	-		-
	Code 400 - New Substations, Switching Stations, Metering Points (Contd)	146.24	\$2,380,127	
	<u>Station Designation</u>	<u>MVA</u>		
	Subtotal Code 400	kV to kV	\$0	

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

500						
	<u>Station Designation</u>	<u>Description of changes</u>				
504	Nestucca Substation	Replace regulators at Nestucca Sub System Work Plan Project			\$131,127	-
-	-	-				-
-	-	-				-
	Subtotal Code 500 from page 2A				\$0	
	Subtotal Code 500 (Includes subtotals from page 2A)				\$131,127	
600	Miscellaneous distribution equipment					
601	Transformers URD Transformers System Work Plan Project				\$894,286	-
604	Regulators Other System Work Plan Project				\$160,000	-
603	Sectionalizing Equipment Other System Work Plan Project				\$480,000	-
601	Transformers OH Transformers System Work Plan Project				\$383,266	-
606	Misc Replacements - Poles Other System Work Plan Project				\$1,849,500	-
607	Misc Replacements - Safety Violations Other System Work Plan Project				\$600,000	-
	Subtotal Code 600 from page 2A				\$530,800	
	Subtotal Code 600 (Includes subtotals from page 2A)				\$4,897,852	
	Code 700 - New Substations, Switching Stations, Metering Points					
700						
702	Security Lights System Work Plan Project				\$21,400	-
705	AMR/AMI Accessory Equip Smart Grid				\$40,000	-
-	-	-				-
-	-	-				-
-	-	-				-
	Subtotal Code 700 from page 2A				\$0	
	Subtotal Code 700 (Includes subtotals from page 2A)				\$61,400	
	Total Distribution				\$18,819,009	
2	Transmission					
800	a. New Line					
	<u>Line Designation</u>	<u>Voltage</u>	<u>Wire Size</u>	<u>Miles</u>		
	Oceanside Transmission	115	Other	8.6	\$10,500,000	-
	Subtotal Code from 2B				\$0	
	Subtotal Code 800(Includes subtotal from 2B)				\$10,500,000	

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

500	Station Designation	Description of changes		
		Subtotal Code 500	\$0	
600	Code 600 - Miscellaneous Distribution Equipment (Contd)			
608	URD or OH Conductor Replacements	Other System Work Plan Project	\$520,000	-
605	Capacitors	Other System Work Plan Project	\$10,800	-
		-		-
		Subtotal Code 600	\$530,800	
700	Code 700 - New Substations, Switching Stations, Metering Points(Contd)			
		Subtotal Code 700	\$0	

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

SECTION N.A.					BORROWER'S COST ESTIMATE	RUS USE ONLY
800	Line(Contd)					
	<u>Line Designation</u>	<u>Voltage</u>	<u>Wire Size</u>	<u>Miles</u>		
	Subtotal Code 800				\$0	

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)			BORROWER'S COST ESTIMATE	RUS USE ONLY
900	Station			
	<u>Station Designation</u>	<u>MVA</u>	<u>kV TO kV</u>	
	Subtotal Code 900 from page 3A		\$0	
	Subtotal Code 900 (Includes subtotals from page 3A)		\$0	
1000	c.- Line and Station Changes			
	<u>Line/Station Designation</u>	<u>Description of Changes</u>		
	Subtotal Code 1000 from page 3A		\$0	
	Subtotal Code 1000		\$0	
1100	d. Other Transmission Items			
	Subtotal Code 1100		\$0	
	TOTAL TRANSMISSION		\$10,500,000	
3.	GENERATION (including Step-up Station and Plant)			
1200				
	GENERA TION		\$0	
4.	HEADQUARTERS FACILITIES			
1300				
	<u>1301</u> <u>Headquarters and Warehouse Project Headquarters/Warehouse</u>		\$5,000,000	
	TOTAL HEADQUARTERS FACILITIES		\$5,000,000	

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)			BORROWER'S COST ESTIMATE	RUS USE ONLY		
900	Station	<u>Station Designation</u>	<u>MVA</u>	<u>kV TO kV</u>		

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COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)		BORROWER'S COST ESTIMATE	RUS USE ONLY
1000	c.- Line and Station Changes		
	<u>Line/Station Designation</u>		
	<u>Description of Changes</u>		
	Subtotal Code 1000	\$0	

PAGES

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)		BORROWER'S COST ESTIMATE	RUS USE ONLY
5. ACQUISITIONS 1400			
	TOTAL ACQUISITION	\$0	
6. OTHER 1500			
	Subtotal 1500 from 4A	\$0	
	Subtotal 1500	\$0	
	TOTAL ALL OTHER	\$0	

SECTION B. SUMMARY OF AMOUNTS AND SOURCES OF FINANCING

1. GRAND TOTAL - ALL COSTS		\$34,319,009	
FUNDS AND MATERIALS AVAILABLE FOR FACILITIES			
a. Loan Funds ... From Budget	\$0		
b. Materials and Special Equipment	\$0		
c. General Funds Purpose 1	\$0		
Purpose 2	\$0		
Purpose 3	\$0		
Purpose 4	\$0		
Purpose 5	\$0		
Purpose 6	\$0		
Total General Funds and Reductions	\$0		
Total Available Funds and Materials and Reductions to Cost Estimates		\$0	
NEW FINANCING REQUESTED FOR FACILITIES		\$34,319,009	
4. RUS LOAN REQUESTED FOR FACILITIES	100.0%	\$34,319,000	
NA			
Name of Supplemental Lender			
5. SUPPLEMENTAL LOAN REQUESTED FOR FACILITIES			
6. 100% SUPPLEMENTAL (LIEN ACCOMODATION)	\$0		

SECTION C . CERTIFICATION

We, the undersigned certify that:

- Upon completion of the electrical facilities contained herein and any others uncompleted at this time but for which financing is available, the system will be capable of adequately and dependably serving the projected load for the loan period as contained in our current RUS approved Load Forecast Study and Construction Work Plan
- Negotiations have been and will be initiated with our power supplier, where necessary, to obtain new delivery points and/or additional capacity at existing ones to adequately supply the projected load upon which this loan application is based.
- The data contained herein and all supporting documents have, to the best of my knowledge, been prepared correctly and in accordance with all appropriate sections of 7 CFR 1710

Date

Signature of the Borrower's Manager

Date

Signature of the Borrower's President

Tillamook P.U.D.
Corporate Name of the Borrower

GFR Initials _____

COST ESTIMATE AND LOAN BUDGET FOR ELECTRIC
BORROWERS

BORROWER AND LOAN DESIGNATION

Tillamook P.U.D.

SECTION A. COST ESTIMATES (Page 1 Continuation Sheet)	BORROWER'S COST ESTIMATE	RUS USE ONLY
6. OTHER 1500		
Subtotal 1500	<u>\$0</u>	