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# CITY OF WARRENTON

## Warrenton Planning Commission

### AGENDA

February 14, 2019 | 6 PM | City Hall - Commission Chambers

#### **HAPPY VALENTINE'S DAY**

1. Attendance
2. Flag Salute
3. Public Comment Period on *Non-Agenda* Items
4. Approval of minutes of January 10, 2019
  - *Action Item*
5. Type 3 Public Hearing: Conditional Use Permit | Verizon Wireless Cell Tower (CUP 19-1)
  - Applicant: Blackrock Consulting, LLC
  - Proposal: New cell tower @ Warrenton HS adjacent to football field
  - *Action Item: Recommendation to approve with conditions*
6. Housing Needs Assessment | Buildable Land Inventory Draft 1
  - DLCD Grant funded review of residential buildable lands
  - Request comments from Commission
7. Staff Announcements & Project Updates
8. Next Meeting: March 14, 2019 | Panel Presentation & Housing Needs Assessment

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## CITY OF WARRENTON

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### Minutes

### Warrenton Planning Commission Regular Meeting January 10, 2019

#### Site Design Review SDR-18-5 (Dewilde Storage Units)

**Commissioners Present:** Chair Paul Mitchell; Commissioners Ryan Lampi, Mike Moha, Chris Hayward, Ken Yuill, Christine Bridgens. Vince Williams had an excused absence.

**Staff Present:** Community Planning Director Kevin Cronin; Building Clerk Janice Weese.

**Public comments on Nom-Agenda Items:** None

**Appointment of Chair and Vice-Chair:** Mr. Yuill motioned to reappoint Chair Paul Mitchell and Vice-Chair Chris Hayward for another year. Mrs. Bridgens seconded. All in favor.

**Approval of Minutes:** Mrs. Bridgens motioned to approve the December 13 minutes as amended. Mr. Hayward seconded. All in favor.

#### Public Hearing Open

**Disclosure by the Commissioners:** Commissioners answered not to all questions or conflicts.

**Staff Report:** Mr. Cronin stated that he and the applicant have been in contact for the last few weeks and feels confident that the conditions meet all the criteria and recommends approval. This is phase two of the storage units.

#### Applicant Testimony

Wayne Dewilde  
1430 Willamette Street  
Eugene, OR 97401

Is the single owner of Shamrock Yachats, LLC for 16 years. Purchased the property in Warrenton 11 years ago. The first phase of his storage units opened in April 2017. The business is web based with booking on line to reduce cost and only takes one form of payment. Also does an online background check for each applicant. The shipping containers are very strong and hard to break into and fire safe as well. The facility is open

only from 7am to 7pm.; is posted as trespassing outside of those hours. There is bob wired fencing around the property and a padlock on the gate. There is staff during weekdays from 9 to 5. There is also night patrol around the property to check on things. Fifty percent of the tenants are residence of Warrenton and Hammond. One quarter of the tenants are commercial. Phase two of this project is adding 60 units across the back of the property. Thirty- six will be smaller units, 8 X 20 feet because they are easier to obtain than the larger ones. They turn away a lot of people because they complain that the larger 40 X 8 feet are too big. The Fire Chief is requesting a 20-foot drive isle, his will be 30 feet. The supra box is at the front of the property on the corner of Ben's computer building that unlocks all of the gates. The water supply is good with 2 fire hydrants within 200 feet of the driveway. There is no water, sewer or utilities coming in or out of the facility. The street improvements will consist of 5-foot sidewalks across the front. Would like to pave the back where 15 parking slots and 2 ADA parking would be to allow for RV storage since most people park in front of their units while loading and unloading. Is asking for a variance to allow for this. Having a full restroom on site would be a challenge in trying to keep the homeless out and vandalism. Is asking if a porta potty would satisfy that request. There is a restroom for staff that is in Ben's Computer building.

### **Questions for Applicant**

Question was asked if there will be any security lighting. There is lighting in the back and the light from Ben's Computer covers the front of the property very well. There is various lighting from surrounding businesses that light up his property. Also, he has a post with a big light and will be adding another light to the parking area. There will also be camera's installed.

The question was asked if there was any filtration going through the 6 - inch pipe that is being drained into the Skipanon. There are filtration boxes that come off the street. It is being kept clean by his service that does his lawn work.

### **Public Testimony Opened**

No one spoke for or against

### **Questions for Staff**

Three items were brought up by Mr. Cronin. He spoke up on the issue with the restroom and stated that it was a building code issue that is required and was noticed by the Building Official. A porta potty would be fine.

A parking variance could be done at a later date for the parking slots and then do an amendment to his plans after the City Commission approves the new parking standards. It's up to the Planning Commission to decide if the RV storage is an allowable use and needs to be clear on the site plan.

Commissioner Bridgens motioned to approve site design application SDR 18-5 based on the findings and conclusions of the January 3, 2019 staff report, the evidence in the

applicant's submittal, subsequent testimony, and the conditions of approval.  
Commissioner Yuill seconded. All in favor.

### **Staff Announcements and Project Updates**

Wendy's is going up quick.

Commissioner Bridgens had a meeting today with the RDI, (Rural Development Initiative). There has been quite a bit of progress. The Builders Supply in Warrenton has been sold and is being remodeled. Some of the other buildings that are eye sores are up for sale.

Invited the Planning Commission to join them at their meetings. The next one is February 7<sup>th</sup> in the Commissioner Chambers at 11:30am. It is a community driven process.

Mr. Cronin stated that the City Commission last Tuesday night approved some changes that he presented to them. One of the changes through the façade program is an outright grant can be issued for \$5,000. Between \$5,000 and \$10,000 to a one and one match for a total of \$15,000 you can do something nice to your property. He is also working with the Post Office on a potential project.

### **Meeting Adjourned**

Attest and submitted by

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Janice Weese, Building Clerk

Approved

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Paul Mitchell, Planning Commission Chair

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## CITY OF WARRENTON

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### **Warrenton Planning Commission Special Meeting January 21, 2019 Clatsop County Public Works Street Vacation SV-18-1**

**Commissioners Present:** Chair Paul Mitchell, Vice-Chair Chris Hayward; Commissioners Christine Bridgens, Ken Yuill, Ryan Lampi, Mike Moha. Excused absence, Vince Williams

**Staff Present:** Community Planning Development Director Kevin Cronin; Building Clerk Janice Weese

#### **Public Comments on Non-Agenda Items**

None

#### **Public Hearing Open**

**Disclosure by the Commissioners:** Commissioners answered no to all questions or conflicts.

**Staff Report:** Meets all criteria and is a straight forward application. The street vacation was already heard by the City Commission. The Planning Commission just needs to look at the lot and block pattern. There is no development on the site and no streets or utilities that will be impacted. It will be maintained as open space. Have not received any testimony or written comments from the public.

#### **Applicant Testimony**

Vance Swenson  
1100 Olney Avenue  
Astoria, OR 97103

The street vacation has already been approved by the City Commission, they are just looking at the plat vacation. Since the county owns all the property, they do not want to have a bunch of little lots that could be sold. By vacating the entire plat, they can clean up the whole land and title by just creating one lot. The property is currently wetlands and open space with no existing or planned development. The area is approximately 40 acres that they are planning on creating a wetland preservation.

**Public Hearing Closed**

**Discussion Among Commissioners:** Comments were made that this makes sense.

**Motion by Commissioners:** Commissioner Hayward made a motion to approve the proposal for the Vacation Request; SV-18-1, with the condition that the applicant shall record a plat vacation with the Surveyor and provide a copy of the final plat to the City of Warrenton. Commissioner Bridgens seconded. The motion passed unanimously.

**Staff Announcements & Project Updates:** Community Development Director Kevin Cronin expressed his thanks to the commisioners for taking the time to come tonight for the special meeting.

Next meeting is for Valentines Day with an application that had expired. Should go smoothly because it is very clean and professional. March is starting to pick up with applications and a 15-lot subdivision for Gil Gramson which is a continuation of Kalmia called Clear Lake; as well as the housing needs assessment that will be coming in February and March.

**Meeting Ajorned**

Attest and submitted by

\_\_\_\_\_  
Janice Weese, Building Clerk

Approved

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Paul Mitchell, Planning Commission Chair

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## CITY OF WARRENTON

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December 10, 2018

To: Konrad Hyle, Black Rock Consulting, LLC  
From: Kevin A. Cronin, AICP | Community Development Director *ka*  
Re: Verizon Cell Tower @ Warrenton High School | Pre-Application Notes

A pre-application conference was held on November 28, 2018 at Warrenton City Hall. The purpose of this memo is to document requirements and concerns raised at the conference. The proposal includes a new cell tower at the Warrenton High School on a leased portion of 880 SF of property near an existing softball field. The subject property is located off 1700 S Main Ave.

This project is considered new construction and will require a conditional use permit pursuant to WMC Chapter 16.220, but not require site design review. The application will be reviewed via a Type 3 process with a public hearing before the Planning Commission and notice described in WMC 16.208.050. The Community & Economic Development Department performance review time for a Type 3 application from "completeness" to "notice of decision" is 4-6 weeks. Application requirements are listed in WMC 16.220. Notice will be sent to affected agencies. Please coordinate the proposal with Gary Kobes, Airport Manager with the Port of Astoria. A signature from the property owners is also required. A signature from Mark Jeffries, Superintendent is sufficient.

A site plan shall have calculations for building area, landscaped area, and parking to streamline the review process.

The subject property is zoned OSI Open Space Institutional. There are no density provisions, lot coverage is 50%, and a 15 ft setback requirement. Maximum height is 30 feet for a building. The cell tower is allowed to exceed to building height standard subject to meeting CUP standards.

**Applicable site design standards include:**

- *WMC 16.148 Wireless Communication Facilities* – For cell tower proposal, this section details all standards that must be met for new towers.
- *WMC 16.124 Landscaping, Street Trees, Fences and Walls* – For commercial projects, 15% of the site shall be landscaped. Hardscape features open to the public can count towards up to 50% of the required landscaping. Native landscaping is required and all invasive species shall be removed. Flowering species of shrubs and other plant materials is strongly encouraged.
- Fire Department comments, if any, will be submitted separately.

**Permit Fees & SDCs**

The estimated permit fees for conditional use review is \$1,000. Grading permits and engineering design are reviewed by a third-party consultant and requires a deposit and direct charge for services.

The City will not collect systems development charges when building permits are issued.

**Please use this letter as a checklist for your land use submittal.**

**Written responses to each concern are required.**

If you have any questions about the requirements or any City related issues, please let me know.



# Verizon Wireless – FORT STEVENS - Wireless Communication Facility

## I. GENERAL INFORMATION

Applicant: Verizon Wireless (VAW) LLC d/b/a Verizon Wireless  
5430 NE 122nd Ave. Portland OR 97230  
Attn: Malissa Johnson - Verizon Wireless-Network Real Estate Specialist

Agent/Contact: Konrad Hyle of Blackrock LLC (Agent - Contact person)  
22135 SW Cole Ct., Tualatin OR 97062  
Tel: 503-522-0634. Email: Konrad@blk-rock.com

Property Owners: Warrenton School District #30

Site Location: 1700 S Main Ave, Warrenton, OR 97146  
Township 8 range 10, section 30. Tax Lot (s) 2900.

Legal Description: Per DEED – see title report.

Zoning Designation: OSI

Comprehensive Plan: Open Space/Institutional

Adjacent Zoning: North & West: C1 – Gen Commercial. East: LW – A5 - Lake & Freshwater Wetland. South: OSI

Size of Site: 34.9 acres

Existing Vegetation: Wooded at property boundary and low areas.

Existing Structures: High School and associated buildings

Topography: Flat

Access Roads: S. Main Avenue

Project Description: Verizon Wireless proposes to construct a 104 foot tall monopole style tower in the OSI zoning district, with new panel antennas, mw dishes, and tower & ground mounted associated equipment. Ground equipment will be installed inside a fenced area on a concrete pad. All improvements will be installed within existing leased premises.

## II. INTRODUCTION

Verizon's customers currently experience a significant gap in coverage in the City of Warrenton. The target search area to fulfill this gap is South west portion of Warrenton and surrounding environs.

To expand its coverage to this unserved area, Verizon proposes a new transmission tower in the OSI zone. The new tower is a permitted use subject Conditional use review. The facility is a Macrocell Wireless Communication Facility site.

The proposed 104 foot cell tower is proposed on a site is immediately surrounded by open space and commercial uses. There are no residences within 400' of the proposed tower.

The proposed project meets or exceeds all of the relevant criteria in Warrenton Development code, and it should be approved as designed.

### **III. PROPOSAL, FEDERAL LAW**

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#### **Project Overview**

Verizon Wireless (VAW) LLC d/b/a Verizon Wireless, is requesting approval to install a Wireless Communications Facility (WCF) on privately owned land.

The applicant is proposing to establish a WCF consisting of a 104' tall monopole style tower with antennas and an equipment pad within the existing leased area. Great care and expense has been taken by the Applicant, Verizon Wireless, to design the facility to meet or exceed all applicable Code Criteria, and minimize the perceived visibility of this site.

Impact to public facilities and services will be minimal as the location at near center of property inside a fenced compound will utilize only fiber and power, both of which are available nearby by underground easement. During construction or operation of the site, minimal traffic would be generated as a result of the facility. Once construction is completed, an equipment technician would visit the site approximately one time per month for routine maintenance purposes only.

Telephone service (fiber) and electrical power are the only public facilities required by the proposed site. Verizon Wireless's proposed site is an unmanned facility, and would not require any water, waste treatment or management of hazardous materials.

The proposed communication facility will not interfere with surrounding properties or their uses, and will not cause interference with any electronic equipment, such as telephones, televisions, or radios. Non-interference is ensured by the Federal Communications Commission (FCC) regulation of radio transmissions.

#### **System Information**

Verizon Wireless is upgrading and expanding its physical system network throughout Oregon and the Pacific Northwest. Upon completion of this update, Verizon Wireless will operate a state of the art digital network of wireless communication sites throughout Oregon, and in connection with other nationwide Verizon Wireless market areas. Blackrock LLC is responsible for the development and redevelopment of many of the Verizon Wireless sites and provides a broad range of professional services; to include program management, land use planning, site acquisition, construction management, and technical services. Blackrock LLC, on behalf of Verizon Wireless, has submitted this application.

The need for specific service is determined by market demand, capacity requirements for a specific geographic area, and the need to provide continuous coverage from one site to another in a particular geographic region. Once the need for additional capacity or enhanced coverage in a particular area has been established, Verizon Wireless's Radio Frequency (RF) engineers identify a target area ("search ring") to locate a new facility.

The required site location and antenna height is determined by an engineering study. This study evaluates radio signal propagation over the desired coverage area based on topography, geographic features and possible signal attenuation due to seasonal changes in vegetation. It is desirable to have direct line of sight from the base station antennas to the required coverage objectives.

This proposed development would allow Verizon Wireless to continue to provide the needed service to Warrenton Oregon, nearby roads, surrounding neighborhoods and business areas, and this portion of Clatsop County. It is crucial for Verizon Wireless to have adequate coverage in this area in order to serve customers in compliance with its FCC license regulations.

### **Facility Design Characteristics and Details**

**EQUIPMENT:** The proposed design for the wireless communication facility includes: A 104' tall steel monopole style design pole with a galvanized steel gray finish; a 8 panel antenna array consisting of 8- 8' panel antennas per sector as shown on plans – 4 sectors total and 2 - 6' diameter microwave dish antenna; 2 each Radio (AC inclusive to unit), Power, and Battery cabinets (6 total); 1 – backup emergency diesel fueled generator as shown on plans; 1 Utility frame (for Verizon power meter and connection for power); and 8' tall chain-link security fence as shown on plans. All equipment to be located on an 11'-6" x 18' concrete pad all within a 20' x 44' lease area.

**HEIGHT:** The height is as described above and all visible components depicted on the elevation page of the Site Plans. Per the RF justification letter and propagation maps, the antenna tip height of 104' is the minimum required to achieve the design objective and as required to achieve the minimum height to fulfill the gap in coverage. Due to the necessity for this facility to "see" over nearby obstructions including trees, buildings, and topographic constrains caused by variations in ground contour over the large coverage area the facility is required to be at the height specified.

**CONSTRUCTION:** Construction is anticipated once all permits and approvals are received estimated for summer 2019. Construction will entail clearing and grubbing, foundation construction and installation of the required equipment in an orderly manner. A temporary staging area is available on the owner's property and will not impact local traffic or block access. Various types of construction equipment will be required during various stages of construction including: backhoes, dump truck, concrete truces, crane (for setting the tower), excavators, trenching equipment. And standard construction equipment for projects of this nature.

### **Alternative Sites Analysis**

There are three (3) factors Verizon considers when determining the location for a new wireless facility: expanded coverage to new area; increase system capacity; and improve quality of service. As illustrated on the accompanying propagation maps (EXHIBIT M), which are predictive computer simulations of wireless signal coverage in a given area, Verizon's existing wireless coverage in the identified service area is substantially lacking resulting in a significant gap in coverage. For every new site Verizon considers, the site acquisition specialist performs an in-depth alternative sites analysis to determine the most cost effective alternative to developing the wireless telecommunication facility, while at the same time satisfying the RF coverage objective.

In considering the development of a new wireless telecommunication facility, the most obvious option is to co-locate the facility on an existing tower, utility pole, or tall structure. Not only is this the most cost effective approach for a carrier to consider, but it also is a much faster approach from a permitting perspective. There are no existing towers within ½ mile of the proposed facility. This was determined by field analysis and review of "Antenna Search" a tool that maps the location of existing WCF's. This material has been compiled and is documented in EXHIBIT F. The 2 closest existing WCF towers are well outside of the ½ mile radius to the northeast. As noted in EXHIBIT F. The nearest facility to northeast is a SBA owned tower approximately 1.48 miles located at 113 NE Iredale Avenue in Warrenton. The next nearest facility also toward the northeast is an AT&T CCI tower located at 825 NE 1<sup>st</sup> Court, Warrenton. This tower is approximately 1.51 miles distant from the proposed Verizon Fort Stevens facility. Both of these are outside of the ½ mile search area and impossible to locate the proposed facilities on an EXISTING facility as would cause interference and would not achieve coverage objective. Collocation on an existing tower in not viable.

The final co-location option the Applicant could consider for the location of the proposed wireless telecommunication facility is an existing tall structure. When driving the search ring to identify a location for the proposed site, the Applicant quickly discovered that co-locating the required facility on an existing or approved tower, building or other suitable structure within the identified search ring was simply not practical. The majority of the buildings in the search area are 2 stories maximum height or 25-30 height. There are no tall structures available to meet the coverage objective.

Because good site geometry is required to achieve maximum efficiency for Verizon's network, the accurate location of sites through triangulation with existing and proposed sites is critical. Due to the lack of available co-location opportunities in the search ring area as detailed above, the Applicant was not able to locate the proposed wireless telecommunication facility on an existing tower, building or other suitable structure, and still achieve the coverage objective necessary to solve the existing gap in coverage. Therefore, in order to maintain sufficient signal strength in the coverage area, the Applicant must construct the proposed facility to maximize coverage and fulfill responsibilities under their FCC license to their customers.

#### **Additional Applicable Law Provisions**

Federal, State and local laws will apply to this application.

In the City of Warrenton, a new telecommunications tower at this OSI location and height is permitted via a conditional use and subject to the criteria per a Type III Conditional Use Permit application.

Federal law, primarily found in the Telecommunications Act, acknowledges a local jurisdiction's zoning authority over proposed wireless facilities but limits the exercise of that authority in several important ways. First, a local government must approve an application for a wireless communications site if three conditions are met: (1) there is a significant gap in service (coverage and or capacity); (2) the carrier has shown that the manner in which it proposes to provide service in the significant gap is the least intrusive on the values that the community seeks to protect as allowed by applicable law; and (3) there are no potentially available and technologically feasible alternatives that are less intrusive on the goals that the community seeks to protect as allowed by applicable law. **47 U.S.C Section 332(c) (7) (A) and (B) (i) (II); and T-Mobile USA, Inc. v. City of Anacortes, 572 P.3d 987 (9th Cir. 2009).**

In addition, under the Telecommunications Act, a local jurisdiction is prohibited from considering the environmental effects (including health effects) of the proposed site if the site will operate in compliance with federal regulations. **47 U.S.C. Section 332(c) (7) (B) (iv).** Verizon has included with this application a statement from its radio frequency engineers demonstrating that the proposed facility will operate in accordance with the Federal Communications Commission's RF emissions regulations - a NIER report. Therefore, this issue is preempted under federal law and any testimony or documents introduced relating to the environmental or health effects of the proposed site should be disregarded in this proceeding.

Furthermore, the Telecommunications Act requires jurisdictions not to discriminate amongst carriers (applicants) in the placement of Wireless facilities. The Telecommunications Act provides wireless carriers with important procedural due process protections, including the requirement that "the regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government shall not prohibit or have the effect of prohibiting the provision of personal wireless services."**47 U.S.C. § 332(c)(7)(B)(i)(II).** That is if a significant gap in service is demonstrated (capacity and or coverage), a local jurisdiction cannot deny the new service facility.

Verizon, in this application via extensive evidence has demonstrated that there is a significant gap in coverage and capacity for customers in Warrenton Oregon, and that the proposed facility is designed to fulfill this service gap in this area. The City is required to defer to Verizon's coverage objectives. There are several similar style and height of wireless towers that have been approved and installed in the City of Warrenton and nearby Clatsop County in similar character of neighborhoods. To deny or substantially

condition this application would be a clear discrimination between carriers per the Telecom Act and Federal Law and deny Verizon's ability to provide similar service compared to other carriers.

The proposed facility will comply fully with all Federal Communications Commission (FCC) safety standards. The FCC developed those standards in consultation with numerous other agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects over decades of wireless usage.

The FCC explains that its standards "incorporate prudent margins of safety." It explains further that "radio frequency emissions from antennas used for cellular and PCS transmissions result in exposure levels on the ground that are typically thousands of times below safety limits." The FCC provides information about the safety of RF emissions from cellular base stations on its website at: <http://www.fcc.gov/oet/rfsafety/rf-faqs.html>. Included in the is application is Evaluation of Compliance with FCC Guidelines for Human Exposure to Radiofrequency Radiation report prepared by Andrew H. Thatcher, MSHP, CHP, a board certified as a health physicist qualified to prepare the exposure report in compliance with FCC guidelines. This report demonstrates that Verizon's proposed facility will be no risk to human health for RF exposure and is in compliance with FCC requirements (EXHIBIT H).

Once Verizon develops a new facility, we follow a comprehensive program to ensure that they remain in compliance with the FCC limits while in service, which will include actual tests to confirm these limits following the sites going into service.

Wireless Communication facilities have been designated by Homeland security as critical infrastructure of the United States – see EXHIBIT N. During events such as natural disasters or acts of terrorism, cell reception has been critical for first responders and emergency personnel to have effective communications.

#### **Benefits to the Community**

Wireless technology will provide many benefits to the residents, businesses, and motorists that travel or live near the proposed project site. These benefits include:

- Quick access to 911 Emergency, even in remote regions, allowing motorists to summon emergency aid and report dangerous situations. Cell Towers have been classified as Critical Infrastructure Facilities of the United States by the Department of Homeland Security.
- Support for emergency services by providing wireless communications access to paramedics, firefighters, and law enforcement agencies that use this technology.
- A backup system to the landline telephone services in the event of power outages, natural or man-made disasters.
- The ability to transmit data over the airwaves allowing for immediate access to vital information to emergency services.
- Provide quality wireless communications including voice, paging, and digital data capabilities for email, facsimile and Internet access.
- Enhance the communications systems of residents and business around the project coverage area.

## **IV. APPLICABLE CODE CRITERIA**

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### **Chapter 16.220.030 review Criteria**

**A. Before a conditional use is approved findings will be made that the use will comply with the following standards:**

1. The proposed use is in conformance with the Comprehensive Plan.

*RESPONSE: The proposed use is in conformance with the Comprehensive Plan as the facility will be located in the Open Space and Institutional Zone (OSI) and per the Comprehensive Plan one of the purposes of the OSI Zone is to "provide for development on ... school grounds...and other large tracts of public land."*

2. The location, size, design and operating characteristics of the proposed use are such that the development will be compatible with, and have a minimal impact on, surrounding properties.

*RESPONSE: The location, size, design and operating characteristics of the site are suitable for the proposed use considering size. The property is 34.9 acres and the proposed leased/fenced area is 44'x20' all of the proposed improvements will adequately fit inside the fenced lease area. The proposed facility location on the subject parcel is near center of the property and is setback over 414 feet from west property line (closest) and over 505 feet from South east property line so as to have a minimal impact on surrounding properties. The project will include a 104' tall monopole style tower with antennas at 104' which is the minimum height to achieve required signal objective. The overall height will be 104'. The tower will be a slim style monopole structure to minimize mass. No excessive vibrations, noise, exhaust or other emissions, light, glare, erosion, odors, or dust are anticipated for the project. The project will be enclosed with a security fence with a locked gate for safety. The proposed monopole is at the minimum height and sites at a location near center of property to be away from off-site properties as much as practicable and designed at a minimum height to minimize any off site visual impacts.*

3. The use will not generate excessive traffic, when compared to traffic generated by uses permitted outright, and adjacent streets have the capacity to accommodate the traffic generated.

*RESPONSE: The proposed wireless communication facility will generate a maximum of 2 vehicle trips per month. The facility will not generate excessive traffic when compared to permitted uses such as the existing high school use on same property. Technician may visit the twice a month at most – no traffic impacts. The proposal will utilize the existing school parking lot – an area of approximately 37,000 square feet and will not require any additional separate parking space.*

4. Public facilities and services are adequate to accommodate the proposed use.

*RESPONSE: The Verizon Wireless's Communication Facility will have little to no impact on public facilities. The proposed facility is unmanned, and would not require or impact any Public facilities including, the transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system or have any adverse noise impacts. The facility will be located within a portion of the existing graveled school parking lot and will not create any additional impervious area so will not impact drainage. Any sound emitted by the facility will be well below State Oregon DEQ standards as the proposed HVAC and emergency backup generator will be located inside of the prefabricated equipment cabinet which includes sound dampening such that any sounds emitted are reduced to a level acceptable in residential environments beyond 70 feet from the facility. The closest off site property is over 400 feet distant, so no neighboring properties will be impacted.*

*The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use. Telephone service and electrical power are the only facilities required by the proposed site.*

5. The site's physical characteristics, in terms of topography, soils and other pertinent considerations, are appropriate for the use.

*RESPONSE: Topography: The site is generally flat and is well suited for construction of the proposed improvements. The soils per soils report are adequate to support tower foundation. The site's physical characteristics, in terms of topography, soils and other pertinent considerations, are appropriate for the use.*

6. The site has an adequate area to accommodate the proposed use. The site layout has been designed to provide for appropriate access points, on-site drives, public areas, loading areas, storage facilities, setbacks and buffers, utilities or other facilities which are required by City ordinances or desired by the applicant.

*RESPONSE: The property is a large parcel as described above and there is adequate area to accommodate the proposed use. Access: The leased area will have access via a 20' access easement to facility from SE Main Avenue. The facility is located within the existing parking lot and there are no required additional on-site driveways, public areas, loading areas, storage facilities, setbacks, or buffers required for the facility.*

## **Chapter 16.208.050 TYPE III PROCEDURES**

### **B. Application Requirements.**

2. d. Include one set of pre-stamped and pre-addressed envelopes for all property owners as specified.

*RESPONSE: The application includes one set of per stamped and pre addresses envelopes for all property owners as specified. The applicant certifies that this is the current list as provided in accordance with Clatsop County Assessor assessment records.*

e. Include an Impact Study for all Type III applications. The study shall address the effect of the development on public facilities and services. These services shall address at a minimum, transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system and the noise impacts of the development.

*RESPONSE: The Verizon Wireless's Communication Facility will have little to no impact on public facilities. The proposed facility is unmanned, and would not require or impact any Public facilities including, the transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system or have any adverse noise impacts. The facility will be located within a portion of the existing school parking lot and will not create any additional impervious area so will not impact drainage. Any sound emitted by the facility will be well below State Oregon DEQ standards as the proposed HVAC and emergency backup generator will be located inside of the prefabricated equipment cabinet which includes sound dampening such that any sounds emitted are reduced to a level acceptable in residential environments beyond 30 feet from the facility. The closest off site property is over 400 feet distant, so no neighboring properties will be impacted. See also EXHIBIT D.*

*The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use. Telephone service and electrical power are the only facilities required by the proposed site.*

## **Chapter 16.148 WIRELESS COMMUNICATION FACILITIES**

### **16.148.050 Application Requirements.**

In addition to all standard required conditional use permit application materials, an applicant for a new WCF or modifications to an existing WCF shall submit the following information:

- A. A visual study containing, at a minimum, a vicinity map depicting where, within a one-half mile radius, any portion of the proposed tower could be visible, and a graphic simulation showing the appearance of the proposed tower and accessory structures from two separate points within the impacted vicinity, accompanied by an assessment of potential mitigation measures. Such points are to be mutually agreed upon by the Community Development Director and the applicant.

*RESPONSE: The visual study – photo-simulations with map is included as EXHIBIT E. The locations were agreed in advance with Community development Director. The elevation drawing in attached site plans (EXHIBIT O) shows the tower silhouette/profile as well as the proposed screen fence to obscure the ground mounted equipment. The attached photosimulations with map provide the view shed analysis showing proposed color and finish and the monopole design.*

- B. Documentation of the steps that will be taken to minimize the visual impact of the proposed facility.

*RESPONSE: The facility is designed at the minimum height necessary of 104 feet, to achieve the coverage objective and is designed as a slim style monopole to minimize visual impacts. In addition the facility is setback from any nearby properties to further minimize visual impacts.*

- C. A landscape plan drawn to scale that is consistent with the need for screening at the site. Existing vegetation that is to be removed must be clearly indicated and provisions for mitigation included where appropriate.

*RESPONSE: The facility is proposed without landscaping as there is **no need** for screening at the site. The site is an existing gravel area and no vegetation will be removed to build the project. The base of the facility including the equipment area is an extreme distance from any public views or adjacent incompatible land uses. The closest offsite structure is a commercial/warehouse use located to the east of the proposed facility on tax lot 3700. This warehouse structure is located over 480 feet away from the proposed WCF and there is a dense tall existing mature vegetative screen consisting of native trees and shrubs which totally screens any views to the subject facility. Any other adjacent public street or occupies offsite is a significantly greater distance and with substantial existing screening of vegetation so the proposed WCF will not be visible from any offsite views. The outdoor equipment is designed to be totally within a sight obscuring fenced equipment area and the equipment area is not visible to any offsite properties due to distance and presence of mature native vegetation and or existing buildings (the high school).*

*Staff's pre-application notes of December 10, 2018 reference an applicable site design standard per WMC 16.124 Landscaping, Street Trees, Fences, and Walls: Commercial districts: 15% of the site shall be landscaped according to the requirements of this section. Applicant notes that the proposed WCF is not in a commercial district but in the Open Space/Institutional district. Furthermore applicants understanding of the code requirements for WMC 16.124 is that the percentages apply to an overall development from when a vacant parcel is developed. In this case the proposed WCF only occupies a small leasehold area of the overall 34.9 acre site. The proposed lease area is only 880 square feet or less than 0.0006% of the total site area. Applicant believes the only applicable portion of code section to be addressed is:*

*16.124.070 New Landscaping. E. 3. c. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Automobile-Oriented Uses. All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and residential districts. Screening shall be provided by one or more the following: decorative wall (i.e., masonry or similar quality material), evergreen hedge, non-see-through fence, or a similar feature that provides a non-see-through barrier. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 16.120, Access and Circulation. (See Section 16.124.050 for standards related to fences and walls.)*

*As stated above the outdoor mechanical equipment area is not visible from any public street or residential districts. Furthermore, as shown on attached site plans and elevations (EXHIBIT O) the outdoor equipment area is totally enclosed and screened with a black vinyl clad fence with black privacy slats – a non-see through fence, although not required to comply with code this fence is more to screen from the other use on the subject property of the school parking lot and to provide security of the facility.*

*Furthermore, the applicant examined 2 existing monopole tower WCFs within City limits. One located at 113 NE Iredale Avenue in Warrenton; and the other located at 825 NE 1st Court, Warrenton. Neither of these facilities seems to have any landscaping installed for screening and the applicant believes it is an*



*unfair burden to require landscaping for this project when it is not needed and other similar facilities in the City did not provide landscaping.*

*In addition, the property owner – Warrenton School District, also prefers no landscaping so as to maximize space for parking and sports field areas, and so as not to create an undue maintenance burden. See attached letter from School District – EXHIBIT P.*

D. A feasibility study for the collocation of telecommunication facilities as an alternative to new structures, in conformance with Section 16.148.060. The feasibility study shall include:

1. An inventory, including the location, ownership, height, and design of existing WCFs within one-half mile of the proposed location of a new WCF. The Community Development Director may share such information with other applicants seeking permits for WCFs, but shall not, by sharing such information, in any represent or warrant that such sites are available or suitable.

*RESPONSE: Not Applicable. There are no existing WCFS within 1/2 mile of the proposed facility. This was determined by field analysis and review of "Antenna Search" a tool that maps the location of existing WCF's. This material has been compiled and is documented in EXHIBIT F.*

2. If collocation is not feasible, documentation of the efforts that have been made to collocate on existing or previously approved towers. Each applicant shall make a good faith effort to contact the owner(s) of all existing or approved towers and shall provide a list of all owners contacted in the area, including the date, form and content of such contact.

*RESPONSE: The 2 closest existing WCF towers outside of the 1/2 mile radius are shown in EXHIBIT F. The 2 closest existing WCF towers are well outside of the 1/2 mile radius to the northeast. As noted in EXHIBIT F. The nearest facility to northeast is a SBA owned tower approximately 1.48 miles located at 113 NE Iredale Avenue in Warrenton. The next nearest facility also toward the northeast is an AT&T CCI tower located at 825 NE 1st Court, Warrenton. This tower is approximately 1.51 miles distant from the proposed Verizon Fort Stevens facility. Both of these are outside of the 1/2 mile search area and impossible to locate the proposed facilities on an EXISTING facility as would cause interference and would not achieve coverage objective. NOTE: There are 2 other towers shown on the Maps for EXHIBIT F: 1) – the existing Verizon tower at Camp Rilea – 1.9 miles to south and the existing Falcon Cable tower 2.14 miles to the east. Verizon is already on the Camp Rilea tower and this is well outside search area and the Falcon tower is well outside the search area and is a very short tower – under 50' near airport. Neither of these locations will fulfill the service gap.*

*Collocation on an existing tower in not viable.*

3. Documentation as to why collocation on existing or proposed towers or location on an existing tall structure within one-half mile of the proposed site is not practical or feasible. Collocation shall not be precluded simply because a reasonable fee for shared use is charged or because of reasonable costs necessary to adapt the existing and proposed uses to a shared tower. The Community Development Director and/or Planning Commission may consider expert testimony to determine whether the fee and costs are reasonable. Collocation costs exceeding new tower development are presumed to be unreasonable.

*RESPONSE: There are no existing other tall structures within the area available for collocation at a height required to achieve the coverage objective.*

E. A report containing the following information:

1. A report from a licensed professional engineer documenting the following:

- a. A description of the proposed tower height and design, including technical, engineering, and other pertinent factors governing selection of the proposed design. A cross-section of the proposed tower structure shall be included. If proposed tower is intended to accommodate future collocation, the engineer shall document that the design is sufficient for that purpose. If the proposed tower is not intended to allow for future collocation, the engineer shall provide an explanation why it is not so intended.
- b. The total anticipated capacity of the tower in terms of the number and types of antennae which can be accommodated. The engineer shall also describe any limitations on the ability of the tower to accommodate collocation. The engineer shall describe the technical options available to overcome those limitations and reasons why the technical options considered were not used.
- c. Documentation that the proposed tower will have sufficient structural integrity for the proposed uses at the proposed location, in conformance with the minimum safety requirements of the State Structural Specialty Code, latest adopted edition at the time of the application.

*RESPONSE: Attached EXHIBIT G – Tower Structural Report. The Oregon PE stamped report documents that the tower can accommodate a minimum of 2 additional antenna arrays by other users. The required documentation is included in the report, as the tower loading and the tower elevation show 2 future antenna arrays below the Verizon array.*

2. A description of mitigation methods, which will be employed to avoid ice hazards, including increased setbacks, and/or de-icing equipment.

*RESPONSE: The proposed tower is setback over 400 feet from any off site uses to avoid ice hazards. The area under the antennas will be wholly within the Verizon fenced, leased, secured area and will protect from any ice hazard.*

3. Documentation demonstrating compliance with non-ionizing electromagnetic emissions standards as set forth by the Federal Communications Commission.

*RESPONSE: Included in attached NIER – EXHIBIT H.*

4. Evidence that the proposed tower will comply with all applicable requirements of the Federal Aviation Administration, the Aeronautics Section of the Oregon Department of Transportation, and the Federal Communications Commission.

*RESPONSE: Included in attached EXHIBITS I, J, & L. EXHIBIT I is the FAA Determination of No Hazard to Air Navigation” for the proposed facility; EXHIBIT J is the Oregon Department of Aviation’s compliance determination letter; and EXHIBIT L is a copy Of Verizon Wireleses Federal Communications Commission (FCC) License for this market allowing Verizon Wireless to operate at the proposed frequencies on this facility.*

- F. A description of anticipated maintenance needs, including frequency of service, personnel needs, equipment needs and potential safety impacts of such maintenance.

*RESPONSE: Maintenance program: Verizon personnel visit the site on a regular basis (approximately twice a month) to review the site for issues and check on antennas and equipment status. No specialized equipment is required, there would be minimal safety impacts associated with any maintenance. The functionality of the antennas and equipment can be monitored remotely if something goes “off-line” on an as needed basis and would be remedied in short order. No landscaping is proposed, therefore no maintenance of landscaping is required.*

- G. If a new tower is approved, the owner shall be required, as a condition of approval, to:
  1. Record the conditions of approval specified by the City with the Deeds Records Office in the Office of the County Recorder of the county in which the tower site is located;
  2. Respond in a timely, comprehensive manner to a request for information from a potential shared use applicant;

3. Negotiate in good faith for shared use by third parties; And
4. Such conditions shall run with the land and be binding on subsequent purchasers of the tower site.

H. The planning official may request any other information deemed necessary to fully evaluate and review the application and the potential impact of a proposed tower and/or antenna.

I. A WCF conditional use permit application fee as established by resolution of the Warrenton City Commission.

*RESPONSE: Understood.*

### **16.148.070 Development Standards.**

All new WCFs shall comply with the following standards:

- A. Tower Height. Freestanding WCFs shall be exempted from height limitations. This exemption notwithstanding, the height and mass of the transmission tower shall be the minimum, which is necessary for its intended use, as demonstrated in a report prepared by a licensed professional engineer.

*RESPONSE: Included in attached EXHIBIT M – RF Coverage Plots and Justification (Included in attached EXHIBIT M – RF Coverage Plots and Justification. The minimum tower and antenna height for this proposed Verizon facility is 104' AGL. The minimum height required is referenced on pages 4 and 9 of this report). The height and mass of the transmission tower is the minimum, which is necessary for its intended use, as demonstrated in a report prepared by a licensed professional engineer – EXHIBIT G (Structural Design Report). Page 2 of the report graphically demonstrates the tower profile showing the height and mass of the tower. The tower is designed in accordance with Verizon standards so as to provide a facility at the minimum height and mass to achieve the design objective, which is stipulated in EXHIBIT M, yet must also meet or exceed State of Oregon building codes. The professional engineers stamp is on cover sheet of the report. Code Section 16.148.050 E. stipulates collocation for new towers, and as such the proposed tower is designed for collocation of 2 additional future users as shown in EXHIBIT G (2 future antenna arrays below the Verizon array). Therefore, the proposed tower has been designed at a minimum height and mass to accommodate the required Verizon design and to provide for future collocation.*

- B. A WCF that is attached to an alternative tower structure may not exceed the height of the alternative tower structure, unless findings are made by the Planning Commission that such an increase will have a minimal impact on the appearance of the structure.

*RESPONSE: N/A*

- C. All applications for development of new WCFs, or proposals to modify existing WCFs shall contain written consents from the following agencies: the FAA, FCC, ODOT Aeronautics Division, and Port of Astoria. This list is not meant to be an exhaustive list; The applicant is responsible for assuring that all new development complies with all applicable local, state, and federal laws.

*RESPONSE: Included in attached EXHIBITS I, J, and K.*

## **Summary of Pre-Application Comments of November 28<sup>th</sup> Conference Meeting**

### **Notes from Community Planning Director with Response.**

Coordinate with Port of Astoria.

*RESPONSE: See attached EXHIBIT K, letter from Port of Astoria.*

Provide signature from property owner.

*RESPONSE: See attached EXHIBIT A, CUP application with signed land owner Authorization letter by Mark Jefferies Superintendent of the School District.*

On Site Plan provide calculations for the building area, landscape area and parking for the proposal.

*RESPONSE: Provided on EXHIBIT O – Sheet A-1.*

	<i>Size - % of site</i>	<i>Building Area</i>	<i>Landscape Area</i>	<i>Parking Area</i>
<i>Overall Site:</i>	<i>34.9 acres</i>			
<i>Project Area:</i>	<i>880 sq. ft. (0.00058%)</i>	<i>240 sq. ft.</i>	<i>0 sq. ft.</i>	<i>0 sq. ft.</i>

*Note: See Response under 16.148.050 C. above regarding landscape and parking areas. Also, the proposal will utilize the existing school parking lot – an area of approximately 37,000 square feet and will not require any additional separate parking spaces.*

Setbacks

*RESPONSE: Shown on EXHIBIT O – Sheet A-1.*

## **V. CONCLUSION**

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Based on the information provided in and with this document the request of Verizon Wireless should be approved. The site proposed herein has been designed as a slim style Monopole design and will have minimal impact on the surrounding area and abutting parcels and complies with the applicable criteria. Further, the proposal shall enhance basic community functions and provide an essential community service. All applicable approval criteria have been met. In addition, the Applicant also pursued all potential co-location opportunities for the facility, but was unable to find an existing tower tall enough and appropriately located for the antenna(s) to effectively provide the desired service for the proposed site. As such, the Applicant's proposal to locate the proposed facility is consistent with both the City of Warrenton Code and all applicable State & Federal Law and, therefore, should be approved.

**EXHIBITS:**

- A. CUP Application and Land Use Authorization – signed by Applicant and owner**
- B. Title report – with Deed of Property and Legal Description.**
- C. List of the Stamped and addressed envelopes for all property owners of record per Clatsop County Assessor.**
- D. Impact Study for Type III application – (also described in NARRATIVE)**
- E. Visual Study – Photosimulations**
- F. Collocation Feasibility Study with Maps**
- G. Tower Structural Report**
- H. NIER Report**
- I. FAA – AIRSPACE Determination of No Notice Required and Does Not Exceed Height.**
- J. ODA Letter**
- K. Written Consent from Port of Astoria**
- L. Verizon FCC Licenses**
- M. Verizon Tower Justification: RF Justification Letter & Coverage Maps**
- N. Critical Infrastructure Proclamation**
- O. Site Plans Includes Architectural Plans & elevations, Survey, Vicinity Plan**
- P. Letter from Property owner – Warrenton-Hammond School District**

**Owner Consent and Land Use Authorization for Verizon Wireless Land Use & Permit Applications for Wireless Communication Facility**

**Project: Verizon Wireless Telecommunication Tower Facility – site OR1 FORT STEVENS.**

**Property Owners: Warrenton School District #30**

**Applicant: Verizon Wireless c/o Blackrock LLC, Konrad Hyle as agent.**

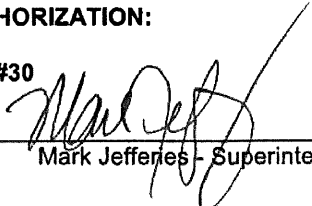
**Property Location: 1700 S Main Ave, Warrenton, OR 97146. Township 8 range 10, section 30. Tax Lot 2900. Tax ID No.: 30108102802900.**

**Authorization to proceed with City of Warrenton zoning and building applications and permits and any other required associated permits or governmental approvals for Verizon Wireless’s proposal to install a new wireless communication facility, and locate equipment and other improvements inside the leased area and or easement areas, on the above referenced property.**

**We are the owners of the parcel listed above and we are authorized to provide required permission to submit for local government approvals. Please accept this document as the letter of authorization for Verizon Wireless’s representative(s), including Konrad Hyle of Blackrock LLC, to proceed with required zoning and building permit applications to gain government approval for the above referenced project, and to act as our agent only as related to filling land use application and associated permits for the Verizon Wireless Communication Facility. We also agree to record with in Clatsop County land records any declaration of covenants, conditions or restrictions required by any conditions of approval relating to said land use.**

**PROPERTY OWNERS AUTHORIZATION:**

**Warrenton School District #30**

Property Owner Signature:  \_\_\_\_\_  
Mark Jefferies - Superintendent

Date: 12/12/18 \_\_\_\_\_

**COVER SHEET**

**Conditional Use Permit application for: OR1 FORT STEVENS –  
Verizon Wireless Communication Facility @ Warrenton High School**

**DATE:** December 26 2018

**TO:** City of Warrenton  
Community & Economic Development Department  
225 S Main Ave/PO Box 250  
Warrenton OR 97146  
503-861-0920

**FROM:**

Konrad Hyle  
22135 SW Cole Court  
Tualatin, OR 97062  
Email: [konrad@blk-rock.com](mailto:konrad@blk-rock.com)  
Phone: (503) 522-0634

Representative of Verizon Wireless

Attached please find the CUP Application, Narrative and all related submittal materials and exhibits including the pre addressed and pre stamped envelopes for 200' notice area.

Upon receipt of this application please contact me by phone at 503-522-0634 so I can pay for the application fee by credit card.

Regards, Konrad Hyle

City of Warrenton  
Planning and Building Department  
PO Box 250  
Warrenton, Oregon 97146  
503-861-0920

OFFICE USE ONLY	
FILE # _____	FEE \$ _____
ZONING DISTRICT _____	
RECEIPT # _____	
DATE RECEIVED _____	

## Conditional Use Application

**Application Fee:** \$1000

**City File No.:** CUP

### I. Property

Address: 1700 S Main Ave, Warrenton, OR 97146. Cross Street US HWY 101.


Assessor's Parcel No.: Twp 8N, Rng10W, Section 30 Tax Lot 2900

### II. Applicant

Applicant: Konrad Hyle of Blackrock LLC agent of Verizon Wireless. Phone number 503-522-0634

Applicant Mailing Address: 5430 NE 122nd Ave. Portland OR 97230. ATTN: Malissa Johnson

Agent Mailing Address: 22135 SW Cole Court Tualatin OR 97062. ATTN: Konrad Hyle

Applicant's Signature:  Date 12/18/18

### III. Owner

Owner: Warrenton School District #30 Contact: Mike Moha Telephone: 503-861-2281

Mailing Address: 820 SW Cedar, Warrenton, OR 97146

Owner's Signature: See attached signed Land Use Authorization

### IV. Describe the Proposed Use

Verizon will install twelve (12) eight (8) foot antennas on a 104' monopole to hold the high school's field lights (replace and extend existing light pole), VZW antennas and antenna related equipment and 1 additional carrier within a 44' x 20' leased area. A fenced compound area with outdoor cabinets and a generator placed on concrete equipment pad and shed roof will be installed inside the lease area adjacent to parking lot.



## Six Conditional Use Criteria-Provide Written Responses to Each One-Section 4.4.3

1. The proposed use is in conformance with the Comprehensive Plan.

The proposed use is in conformance with the comprehensive plan as the proposal will enhance the ability to provide communication services, including emergency service, to City residents, agencies, businesses, and visitors. The facility has been designed to protect the City's natural resources, historic resources, and visual environments from potential adverse effects through careful design and siting standards

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2. The location, size and design, and operating characteristics of the proposed use are such that the development will be compatible with, and have a minimal impact on surrounding properties.

The characteristics of the site are suitable for the proposed use considering size: The property is 34.9 acres the proposed tower compound size will only be 44'x20' size (880 sq. ft.) and will fit within a fenced, graveled lease area at the existing gravel parking lot area. The location of the facility is sited to have minimal impact on property and in relation to surrounding properties - located over 410 feet from Main Street to west and over 500 feet from property line to south and east. The design utilizes an extension of an existing 50' ball field light pole to 104' height to have minimal impact. The operating characteristics of the facility only require underground power and fiber utility connections, average of 2 vehicle trips per month by a technician, and emit minimal sound levels with the operation of the emergency backup generator located within a secure sound dampening enclosure within tolerances established by DEQ. The tower does not require any marking or lighting per FAA and the dull galvanized steel finish will be non-reflective to minimize glare. The proposed facility will have no adverse effects on surrounding properties.

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3. The use will not generate excessive traffic, when compared to traffic generated by uses permitted outright, and adjacent streets have the capacity to accommodate the traffic generated. The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, therefore not generating excessive traffic when compared to the existing use or other uses permitted outright in this zone. The adjacent streets have the capacity to accommodate the maximum additional 2 vehicle trips per month.

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4. Public facilities and services are adequate to accommodate the proposed use. The site and proposed use will have adequate public facilities and services to accommodate the proposed use. The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use.

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5. The site's physical characteristics, in term of topography, soils and other pertinent considerations are, are appropriate for the use.

The site's physical characteristics, in term of topography, soils and other pertinent considerations are, are appropriate for the use. The site is generally flat and will not require excessive grading or additional disturbance. The underlying soils are stable to provide an adequate foundation for the facility and are outside of any wetland areas as to provide adequate constructability for the facility. The location of the subject parcel and proposed tower location is within the Verizon search area to fulfill the Coverage & Capacity Gaps in Verizon's service.

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6. The site has an adequate area to accommodate the proposed use. The site layout has been designed to provide for the building, parking, landscaping, driveway, on-site circulation, public areas, loading areas, storage facilities, setbacks, buffers, and utilities which are required by City ordinances.

The site has an adequate area to accommodate the proposed use: The property is 34.9 acres and the proposed leased/fenced area is only 44'x20' (880 sq. ft.) all of the proposed improvements will adequately fit inside the fenced lease area. The site layout has been designed to provide for the building, parking, driveway, on-site circulation, public areas, loading areas, storage facilities, setbacks, buffers, and utilities which are required by City ordinances. The leased area will have access via a 20' access easement to facility from S Main Avenue. The proposed Verizon tower, foundation and outdoor equipment pad will adequately fit within the proposed space as designed. Due to the significant distance to any adjacent properties and lack of visual impacts to any adjacent properties, and the adequate screening provided by existing buildings and vegetation no landscaping is proposed or required. Within the existing gravel parking lot there is adequate existing area for parking and room for any required on site vehicle circulation that may be required by a site technician's standard size vehicle. No public areas are proposed or required for this facility. No loading or storage areas are proposed or required for this facility. The proposal meets all required setbacks as per submitted plans. No buffers or public utilities are required or proposed for this facility. The only required utilities are power and fiber which will be provided via underground trench, in easements if required, to the local serves providers for those utilities.

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**This application will not be officially accepted until department staff has determined that the application is completely filled out and the site plan requirements have been completed and a copy of the deed.**

## Six Conditional Use Criteria-Provide Written Responses to Each One-Section 4.4.3

1. The proposed use is in conformance with the Comprehensive Plan.

The proposed use is in conformance with the comprehensive plan as the proposal will enhance the ability to provide communication services, including emergency service, to City residents, agencies, businesses, and visitors. The facility has been designed to protect the City's natural resources, historic resources, and visual environments from potential adverse effects through careful design and siting standards

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2. The location, size and design, and operating characteristics of the proposed use are such that the development will be compatible with, and have a minimal impact on surrounding properties.

The characteristics of the site are suitable for the proposed use considering size: The property is 34.9 acres the proposed tower compound size will only be 44'x20' size (880 sq. ft.) and will fit within a fenced, graveled lease area at the existing gravel parking lot area. The location of the facility is sited to have minimal impact on property and in relation to surrounding properties - located over 410 feet from Main Street to west and over 500 feet from property line to south and east. The design utilizes an extension of an existing 50' ball field light pole to 104' height to have minimal impact. The operating characteristics of the facility only require underground power and fiber utility connections, average of 2 vehicle trips per month by a technician, and emit minimal sound levels with the operation of the emergency backup generator located within a secure sound dampening enclosure within tolerances established by DEQ. The tower does not require any marking or lighting per FAA and the dull galvanized steel finish will be non-reflective to minimize glare. The proposed facility will have no adverse effects on surrounding properties.

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3. The use will not generate excessive traffic, when compared to traffic generated by uses permitted outright, and adjacent streets have the capacity to accommodate the traffic generated. The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, therefore not generating excessive traffic when compared to the existing use or other uses permitted outright in this zone. The adjacent streets have the capacity to accommodate the maximum additional 2 vehicle trips per month.

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4. Public facilities and services are adequate to accommodate the proposed use. The site and proposed use will have adequate public facilities and services to accommodate the proposed use. The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use.

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5. The site's physical characteristics, in term of topography, soils and other pertinent considerations are, are appropriate for the use.

The site's physical characteristics, in term of topography, soils and other pertinent considerations are, are appropriate for the use. The site is generally flat and will not require excessive grading or additional disturbance. The underlying soils are stable to provide an adequate foundation for the facility and are outside of any wetland areas as to provide adequate constructability for the facility. The location of the subject parcel and proposed tower location is within the Verizon search area to fulfill the Coverage & Capacity Gaps in Verizon's service.

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6. The site has an adequate area to accommodate the proposed use. The site layout has been designed to provide for the building, parking, landscaping, driveway, on-site circulation, public areas, loading areas, storage facilities, setbacks, buffers, and utilities which are required by City ordinances.

The site has an adequate area to accommodate the proposed use: The property is 34.9 acres and the proposed leased/fenced area is only 44'x20' (880 sq. ft.) all of the proposed improvements will adequately fit inside the fenced lease area. The site layout has been designed to provide for the building, parking, driveway, on-site circulation, public areas, loading areas, storage facilities, setbacks, buffers, and utilities which are required by City ordinances. The leased area will have access via a 20' access easement to facility from S Main Avenue. The proposed Verizon tower, foundation and outdoor equipment pad will adequately fit within the proposed space as designed. Due to the significant distance to any adjacent properties and lack of visual impacts to any adjacent properties, and the adequate screening provided by existing buildings and vegetation no landscaping is proposed or required. Within the existing gravel parking lot there is adequate existing area for parking and room for any required on site vehicle circulation that may be required by a site technician's standard size vehicle. No public areas are proposed or required for this facility. No loading or storage areas are proposed or required for this facility. The proposal meets all required setbacks as per submitted plans. No buffers or public utilities are required or proposed for this facility. The only required utilities are power and fiber which will be provided via underground trench, in easements if required, to the local serves providers for those utilities.

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**This application will not be officially accepted until department staff has determined that the application is completely filled out and the site plan requirements have been completed and a copy of the deed.**

*"Making a difference through excellence of service"*



## CITY OF WARRENTON

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December 10, 2018

To: Konrad Hyle, Black Rock Consulting, LLC  
From: Kevin A. Cronin, AICP | Community Development Director *KA*  
Re: Verizon Cell Tower @ Warrenton High School | Pre-Application Notes

A pre-application conference was held on November 28, 2018 at Warrenton City Hall. The purpose of this memo is to document requirements and concerns raised at the conference. The proposal includes a new cell tower at the Warrenton High School on a leased portion of 880 SF of property near an existing softball field. The subject property is located off 1700 S Main Ave.

This project is considered new construction and will require a conditional use permit pursuant to WMC Chapter 16.220, but not require site design review. The application will be reviewed via a Type 3 process with a public hearing before the Planning Commission and notice described in WMC 16.208.050. The Community & Economic Development Department performance review time for a Type 3 application from "completeness" to "notice of decision" is 4-6 weeks. Application requirements are listed in WMC 16.220. Notice will be sent to affected agencies. Please coordinate the proposal with Gary Kobes, Airport Manager with the Port of Astoria. A signature from the property owners is also required. A signature from Mark Jeffries, Superintendent is sufficient.

A site plan shall have calculations for building area, landscaped area, and parking to streamline the review process.

The subject property is zoned OSI Open Space Institutional. There are no density provisions, lot coverage is 50%, and a 15 ft setback requirement. Maximum height is 30 feet for a building. The cell tower is allowed to exceed to building height standard subject to meeting CUP standards.

**Applicable site design standards include:**

- *WMC 16.148 Wireless Communication Facilities* – For cell tower proposal, this section details all standards that must be met for new towers.
- *WMC 16.124 Landscaping, Street Trees, Fences and Walls* – For commercial projects, 15% of the site shall be landscaped. Hardscape features open to the public can count towards up to 50% of the required landscaping. Native landscaping is required and all invasive species shall be removed. Flowering species of shrubs and other plant materials is strongly encouraged.
- Fire Department comments, if any, will be submitted separately.

**Permit Fees & SDCs**

The estimated permit fees for conditional use review is \$1,000. Grading permits and engineering design are reviewed by a third-party consultant and requires a deposit and direct charge for services.

The City will not collect systems development charges when building permits are issued.

**Please use this letter as a checklist for your land use submittal.**

**Written responses to each concern are required.**

If you have any questions about the requirements or any City related issues, please let me know.



630 Bond Street, Astoria, OR 97103  
 (503)325-2144 FAX (855)394-1485

## PRELIMINARY REPORT

**TITLE OFFICER:** Jodi Carlson

**ORDER NO.:** 360416022676

**CUSTOMER NO.:** OR1 Fort Stevens

**TO:** Black Rock  
 1100 Melody Lane, Suite 139  
 Roseville, CA 95678

**OWNER/SELLER:** Warrenton School District #30

**BUYER/BORROWER:** TBD

**PROPERTY ADDRESS:** 1700 S Main Avenue, Warrenton, OR 97146

**EFFECTIVE DATE:** October 7, 2016, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	<u>AMOUNT</u>	<u>PREMIUM</u>
ALTA Owner's Policy 2006	\$ TBD	\$ TBD
Government Lien Search		\$ 15.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

Warrenton School District #30, which acquired title as School District No. 2 of Clatsop County, Oregon

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF WARRENTON, COUNTY OF CLATSOP, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

**EXHIBIT "A"**  
Legal Description

The South half of the Jeremiah G. Tuller Donation Land Claim No. 43, Township 8 North, Range 10 West, Willamette Meridian, City of Warrenton, Clatsop County, Oregon.

SAVE AND EXCEPT those portions lying North of the Southerly right of way line of Highway 104 Spur (also known as Fort Stevens Highway Spur and Alternative Coast Highway) and West of the Easterly right of way line of S. Main Avenue.

ALSO SAVE AND EXCEPT any portion lying West of the East line of the abandoned right of way of the Spokane, Portland and Seattle Railway Company.

ALSO SAVE AND EXCEPT that portion described in deed from Clatsop County, Oregon, to School District #30, Warrenton, Oregon, by deed recorded September 9, 1964, Book 275, Page 567, Clatsop County Deed Records.

FURTHER SAVE AND EXCEPT that portion conveyed by Warrenton School District #30 to Warrenton Fiber Company by deed recorded March 11, 2014, Instrument No. 201401360, Clatsop County Records.



**AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:**

**GENERAL EXCEPTIONS:**

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.
5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

**SPECIFIC ITEMS AND EXCEPTIONS:**

6. Unpaid Property Taxes are as follows:

Fiscal Year: 2016-2017  
Amount: \$30.00, plus interest, if any  
Levy Code: 3010  
Account No.: 32117  
Map No.: 810280002900

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

7. The subject property is under public, charitable, fraternal, or religious organization ownership and is partially exempt from ad valorem taxation. Any change in ownership prior to delivery of the assessment roll may result in tax liability.

Tax Account No.: 32117

8. City Liens, if any, in favor of the City of Warrenton.
9. Rights of the public to any portion of the Land lying within streets, roads and highways.

10. Any adverse claim based upon the assertion that:
  - a) Said Land or any part thereof is now or at any time has been below the highest of the high watermarks of Skipanon River, in the event the boundary of said Skipanon River has been artificially raised or is now or at any time has been below the high watermark, if said Skipanon River is in its natural state.
  - b) Some portion of said Land has been created by artificial means or has accreted to such portion so created.
  - c) Some portion of said Land has been brought within the boundaries thereof by an avulsive movement of Skipanon River, or has been formed by accretion to any such portion.
11. Rights and easements for navigation and fishery which may exist over that portion of said Land lying beneath the waters of Skipanon River.
12. Right of reverter in favor of the heirs at law of D.E. Pease as set forth in the Will of D.E. Pease, filed June 12, 1896, in Probate No. 206, Circuit Court for Clatsop County, Oregon.
13. Any right, title, claim or interest obtained by the City of Warrenton in and to a portion of the herein described property for the construction of dikes, as evidenced by Decrees of the Circuit Court for the County of Clatsop, being Judgment Roll Nos. 16070, 16099 and 16109.
14. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: United States of America  
Purpose: Levees  
Recording Date: April 27, 1938  
Recording No: Book 142, Page 652  
Affects: See document for specifics
15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: United States of America  
Purpose: Levees and flood control  
Recording Date: April 27, 1938  
Recording No: Book 142, Page 657  
Affects: See document for specifics
16. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: PacifiCorp  
Purpose: Electric power transmission, distribution and communication lines  
Recording Date: June 14, 2004  
Recording No: 200407025  
Affects: See document for specifics
17. Please be advised that our search did not disclose any open Deeds of Trust of record.
18. If requested to issue an extended coverage ALTA loan policy, the following matters must be addressed:
  - a) The rights of tenants holding under unrecorded leases or tenancies
  - b) Matters disclosed by a statement as to parties in possession and as to any construction, alterations or repairs to the Land within the last 75 days. The Company must be notified in the event that any funds are to be used for construction, alterations or repairs.
  - c) Any facts which would be disclosed by an accurate survey of the Land

**ADDITIONAL REQUIREMENTS/NOTES:**

- A. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.
- B. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.
- C. NOTE: The following are required when a principal to the proposed transaction is an instrumentality of the state, such as a municipality, a county or other governmental body:
  - Certification, with supporting documentation, that the board or other governing authority of the governmental body has approved the transaction in accordance with applicable practices, procedures, rules, ordinances and statutes.
  - Certification that a named person or persons, identified by name and position, are authorized to act on behalf of the governmental body in the proposed transaction.
  - Verification of the current legal name and good standing of the governmental body when it is a local governmental body other than a city or county.

D. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Clatsop	\$47.00	\$5.00
Tillamook	\$47.00	\$5.00

Note: When possible the company will record electronically. An additional charge of \$5.00 applies to each document that is recorded electronically.

RECORDING CHARGES ARE SUBJECT TO CHANGE WITHOUT NOTICE. ANY ADDITIONAL FEES CHARGED BY THE CLATSOP COUNTY RECORDING CLERK FOR NON-CONFORMING DOCUMENTS WILL BE BILLED SEPARATE FROM THE ABOVE DESCRIBED RECORDING FEES.

DOCUMENTS IN WHICH REAL PROPERTY IS TRANSFERRED OR CONVEYED MUST HAVE NOTED ON SAID DOCUMENTS THE CLATSOP COUNTY ASSESSOR'S ACCOUNT NUMBER, i.D. NUMBER AND SITUS ADDRESS OF THE SUBJECT PROPERTY. FAILURE TO COMPLY WILL INCUR AN ADDITIONAL \$20.00 RECORDING FEE.

All recording packets for Clatsop County property should be sent to:  
Ticor Title Company  
Attn: Recorder  
630 Bond Street  
Astoria, OR 97103

All recording packets for Tillamook County property should be sent to:  
Ticor Title Company  
Attn: Recorder  
2211 3rd Street  
Tillamook, OR 97141

- E. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.

- F. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.
- G. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

VESTING DEED

206

206

W I L L

Dated June 5, 1893  
Filed June 12, 1896

-of-

D. E. PEASE

Know all men by these presents, that I, D. E. Pease, of Skippanon Clatsop County, Oregon, being of sound mind and memory, do make and declare this my last will and testament.

I devise to School District No. 2 of Clatsop County, Oregon, all that tract of land now owned by me and situate in the Donation Claim of J. G. Fuller, and near the South East part thereof all situate in Clatsop County Oregon. Said tract containing ~~two~~ <sup>more or less</sup> acres. This devise is upon the following terms and conditions, that the Directors of said School District shall take charge of said land and lease the same upon the best terms possible, the rents to be paid, not less than one half in cash and the remainder in improvements on the premises. Said money to be put into the school fund for said District and used in maintaining school therein, and if the funds should be sufficient, a high school may be maintained in connection with the Common School. The District may build or place a school house on said land and maintain school thereon, after it shall become possessed of the land but the Director nor the said School District shall have the power to sell or alien any part thereof, and any attempt to sell the same or any part thereof shall work a forfeiture and cause the same to revert to and vest in my heirs at law absolutely.

And in case of any division of the said District neither the property herein described or the benefits thereof shall be divided between the divisions of the District; but the whole thereof shall belong to School District No 2 as above intended alone and exclusively.

I, bequeath to my daughter Clara M. Parker \$1000.00. The residue of my property real and personal that shall remain after paying my debts, funeral and administration expenses I bequeath and devise to J. C. A. Bowly and Clara M. Parker and their successors and survivors in trust for the benefit of my grand daughter Eva Bell Parker until she shall arrive at the age of 21 years, at which time all said property and the accumulated income therefrom shall vest absolutely in her. From time to time said trustees may expend of the income of a property in their hands, such sums as they may deem necessary for the support and education of my said grand-daughter;

All the above bequests and devises are made with this limitation, that should my beloved wife Hannah survive me, she shall have the full control and possession of all my property real and personal and the use and profits and income thereof during her natural life, but in such case, it shall pass and vest at her death as before designated herein the same as if she should not survive me. I request that J. Q. A. Bowlby and Clara W. Parker be appointed executors of this my last will and testament, hereby revoking all wills heretofore made.

Clatsop County Oregon June 5, 1893.

D. E. Pease

Signed, sealed, declared and published by D. E. Pease to be his last will and testament in the presence of us, who at his request, in his presence, and in the presence of each other have hereunto set our names as witnesses this 5 June 1893.

J. Q. A. Bowlby  
J. C. Adams

# EXHIBIT C - Mailing list 200' buffer

Owner	Mailing Address	City	State	Zip
Benz Shirley M	147 Hwy 101 Alt	Warrenton	OR	97146
Burlington Northern Inc. Property Tax Department	PO BOX 961089	Fort Worth	TX	76161-0089
Davis Dave Gene & Stephanie	1601 S Main Ave	Warrenton	OR	97146
Ewing Larry E & Patricia A	961 SW Ridge Rd	Warrenton	OR	97146-9438
Gates Daniel J & Darcie Y	7420 SW 35th St	Portland	OR	97219
Green Michael Alan & Green Crystal Gayle	PO BOX 484	Warrenton	OR	97146
Gronmark Jim Construction Inc	1377 SE 11th Pl	Warrenton	OR	97146
Hankerson George A	N1575 Schnacky Rd	Birchwood	WI	54817
Hansen Kyle B	860 5th Ave	Seaside	OR	97138-6912
Hart Martin W	1649 S Main Ave	Warrenton	OR	97146-9521
Hayes Thomas M & Stowe Edward C	1607 S Main St	Warrenton	OR	97146
Herren Rebecca	PO BOX 2073	Gearhart	OR	97138
Icard Dorothy M & Marin Doris M	371 SW Juniper	Warrenton	OR	97146
Jenkins James P Jr/Mary E	1605 S Main Ave	Warrenton	OR	97146-9521
Keys Theodore Ray & Boid Jim Thomas	708 N 5th St	Renton	WA	98057
Lee Joanne K	1663 SE Dolphin Ave	Warrenton	OR	97146-9551
LU NE Properties LLC	34755 Hwy 101 Business	Astoria	OR	97103-6664
Moses James D & Donene M	PO BOX 442	Warrenton	OR	97146-0442
Moskovita George/June Tr. c/o Rubino Vince/Velita Ann (c)	1335 Sunrise Ridge Rd	Gearhart	OR	97138-7395
North Coast Land Conservancy	PO BOX 67	Seaside	OR	97138
Rice Rose C Revocable Trust c/o William Rice	6711 Larson Ln	Aberdeen	WA	98520-7915
Russell Cody A	16418 NE 72nd Ave	Vancouver	WA	98686
Seaver Carl H & Karry A	847 S 300 W	Orem	UT	84058
Secretary of Veterans Affairs c/o Flagstar Bank FSB	5151 Corporate Dr	Troy	MI	48098
Skipanon Riverbend LLC	33252 Wood Duck Ln	Warrenton	OR	97146-7215
Steen Kristin Michelle Needs Trust & Dooney Michael J Tr	159 Hwy 101 Alt	Warrenton	OR	97146
Waisanen Jon R	91235 Pathfinder Rd	Astoria	OR	97103
Warrenton School Dist #30	820 SW Cedar Ave	Warrenton	OR	97146-9745
Weiszhaar Nancy M	171 Highway 101 Alt #1	Warrenton	OR	97146-9314

## **EXHIBIT D – IMPACT STUDY**

This address the impact study requirements for all Type III applications. The study shall address the effect of the development on public facilities and services. These services shall address at a minimum, transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system and the noise impacts of the development.

RESPONSE: The Verizon Wireless's Communication Facility will have little to no impact on public facilities. The proposed facility is unmanned, and would not require or impact any Public facilities including, the transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system or have any adverse noise impacts. The facility will be located within a portion of the existing school parking lot and will not create any additional impervious area so will not impact drainage. Any sound emitted by the facility will be well below State Oregon DEQ standards as the proposed HVAC and emergency backup generator will be located inside of the prefabricated cabinet which includes sound dampening such that any sounds emitted are reduced to a level acceptable in residential environments beyond 30 feet from the facility. The closest off site property is over 400 feet distant, so no neighboring properties will be impacted.

The facility will be an unmanned utility use with maximum of 2 vehicle trips per month and will utilize existing parking at school lot adjacent, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use. Telephone service (fiber) and electrical power are the only facilities required by the proposed site.





**OR1 FORT STEVENS**  
1700 S Main Ave, Warrenton, OR



CURRENT

VIEW #1 LOOKING NORTHEAST  
FROM WHISKEY RD. AND S. MAIN AVE.



PROPOSED



CURRENT

VIEW #2 LOOKING NORTHEAST  
FROM SW 18TH ST. AND S. MAIN AVE.



PROPOSED



CURRENT

VIEW #3 LOOKING SOUTHEAST  
FROM 1609 S. MAIN AVE.



PROPOSED



TIM BRADLEY IMAGING

VIEW #4 LOOKING SOUTH  
TOWER NOT SEEN

**ma**  
MORRISON HERSHFELD  
10800 NE 8TH STREET, SUITE 810  
BELLEVUE, WA 98004, TN:  
425.451.1301 Fax: 425.451.1369  
www.morrisonhershfeld.com

**verizon**

**OR1 FORT STEVENS**  
1700 S Main Ave, Warrenton, OR



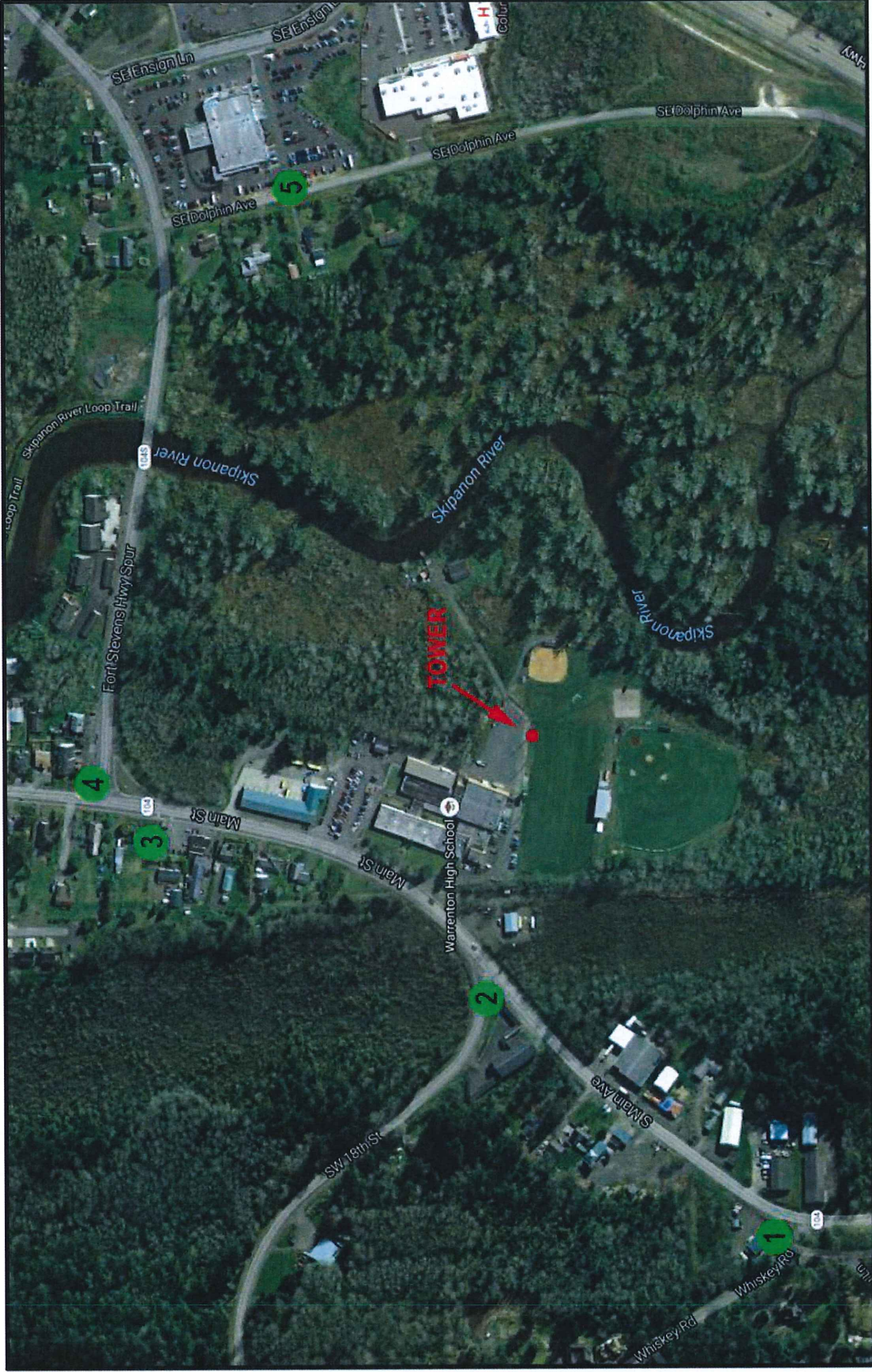
TIM BRADLEY IMAGING

VIEW #5 LOOKING WEST  
TOWER NOT SEEN

**ma**  
MORRISON HERSHFELD  
10900 NE 8TH STREET, SUITE 910  
BELLEVUE, WA 98004 T: 425.451.1389  
F: 425.451.1389  
www.morrisonhershfeld.com



**OR1 FORT STEVENS**  
1700 S Main Ave, Warrenton, OR



TIM BRADLEY IMAGING

PHOTO SIM LOCATION MAP

**MORRISON HERSHFELD**  
 1034 NE 9TH STREET, SUITE #110  
 BURLINGAME, WA 98008, USA  
 425.451.1311 Fax: 425.451.1369  
[www.morrisonherfeld.com](http://www.morrisonherfeld.com)



**OR1 FORT STEVENS**  
 1700 S Main Ave, Warrenton, OR

## **EXHIBIT F – COLLOCATION FEASIBILITY STUDY**

This report address requirement for a feasibility study for the collocation of telecommunication facilities as an alternative to new structures, in conformance with Section 16.148.060. This feasibility study includes:

### **Verizon Alternative Sites Analysis**

There are three (3) factors Verizon considers when determining the location for a new wireless facility: expanded coverage to new area; increase system capacity; and improve quality of service. As illustrated on the accompanying propagation maps, which are predictive computer simulations of wireless signal coverage in a given area, Verizon's existing wireless coverage in the identified service area is substantially lacking resulting in a significant gap in coverage. For every new site VERIZON considers, the site acquisition specialist performs an in-depth alternative sites analysis to determine the most cost effective alternative to developing the wireless telecommunication facility, while at the same time satisfying the RF coverage objective.

In considering the development of a new wireless telecommunication facility, the most obvious option is to co-locate the facility on an existing tower, utility pole, or tall structure. Not only is this the most cost effective approach for a carrier to consider, but it also is a much faster approach from a permitting perspective. There are no existing towers within ½ mile of the proposed facility. This was determined by field analysis and review of "Antenna Search" a tool that maps the location of existing WCF's. This material has been compiled and is documented in the Maps included at end of this study. The 2 closest existing WCF towers are well outside of the ½ mile radius to the northeast. The nearest facility to northeast is a SBA owned tower approximately 1.48 miles located at 113 NE Iredale Avenue in Warrenton. Verizon is already collocated on this tower and would be impossible to locate again with causing interference in Verizon's network. The next nearest facility also toward the northeast is an AT&T CCI tower located at 825 NE 1st Court, Warrenton. This tower is approximately 1.51 miles distant from the proposed Verizon Fort Stevens facility. This tower is very close to the SBA tower is already collocated on and to locate here would also cause inference in Verizon's network. Both of these are outside of the ½ mile search area and impossible to locate the proposed facilities on or near an EXISTING facility as would cause interference and would not achieve coverage objective. Both of these existing towers are also well outside Verizon's coverage objective and would not fill the significant gap in coverage. Collocation on an existing tower in not viable.

The final co-location option the Applicant could consider for the location of the proposed wireless telecommunication facility is an existing tall structure. When driving the search ring to identify a location for the proposed site, the Applicant quickly discovered that co-locating the required facility on an existing or approved tower, building or other suitable structure within the identified search ring was simply not practical. The majority of the buildings in the search area are 2 stories maximum height or 25-30 height. There are no tall structures available to meet the coverage objective.

Because good site geometry is required to achieve maximum efficiency for Verizon's network, the accurate location of sites through triangulation with existing and proposed sites is critical. Due to the lack of available co-location opportunities in the search ring area as detailed above, the Applicant was not able to locate the proposed wireless telecommunication facility on an existing tower, building or other suitable structure, and still achieve the coverage objective necessary to solve the existing gap in

coverage. Therefore, in order to maintain sufficient signal strength in the coverage area, the Applicant must construct the proposed facility to maximize coverage and fulfill responsibilities under their FCC license to their customers.

### **Warrenton Wireless Facility Code Issues and Response**

City Code Section 16.148.050 D. States:

1. An inventory, including the location, ownership, height, and design of existing WCFs within one-half mile of the proposed location of a new WCF. The Community Development Director may share such information with other applicants seeking permits for WCFs, but shall not, by sharing such information, in any represent or warrant that such sites are available or suitable.

*RESPONSE: Not Applicable. There are no existing WCFs within ½ mile of the proposed facility. This was determined by field analysis and review of "Antenna Search" a tool that maps the location of existing WCF's. This material has been compiled and is documented in the maps at the end of this study.*

2. If collocation is not feasible, documentation of the efforts that have been made to collocate on existing or previously approved towers. Each applicant shall make a good faith effort to contact the owner(s) of all existing or approved towers and shall provide a list of all owners contacted in the area, including the date, form and content of such contact.

*RESPONSE: The 2 closest existing WCF towers are well outside of the ½ mile radius to the northeast. As noted in the maps. The nearest facility to northeast is a SBA owned tower approximately 1.48 miles located at 113 NE Iredale Avenue in Warrenton. Verizon is already collocated on this tower and would be impossible to locate again logistically and without causing interference in Verizon's network. The next nearest facility also toward the northeast is an AT&T CCI tower located at 825 NE 1st Court, Warrenton. This tower is approximately 1.51 miles distant from the proposed Verizon Fort Stevens facility. This tower is very close to the SBA tower that Verizon is already collocated on and to locate here would also cause inference in Verizon's network. Both of these are outside of the ½ mile search area and impossible to locate the proposed facilities on or near an EXISTING facility as would cause interference and would not achieve coverage objective.*

*Both of these existing towers are well outside of the ½ mile search area and impossible to locate the proposed facilities on or near an EXISTING facility as would cause interference and would not achieve coverage objective. Both of these existing towers are also well outside Verizon's coverage objective and would not fill the significant gap in coverage.*

3. Documentation as to why collocation on existing or proposed towers or location on an existing tall structure within one-half mile of the proposed site is not practical or feasible. Collocation shall not be precluded simply because a reasonable fee for shared use is charged or because of reasonable costs necessary to adapt the existing and proposed uses to a shared tower. The Community Development Director and/or Planning Commission may consider expert testimony to determine whether the fee and costs are reasonable. Collocation costs exceeding new tower development are presumed to be unreasonable.

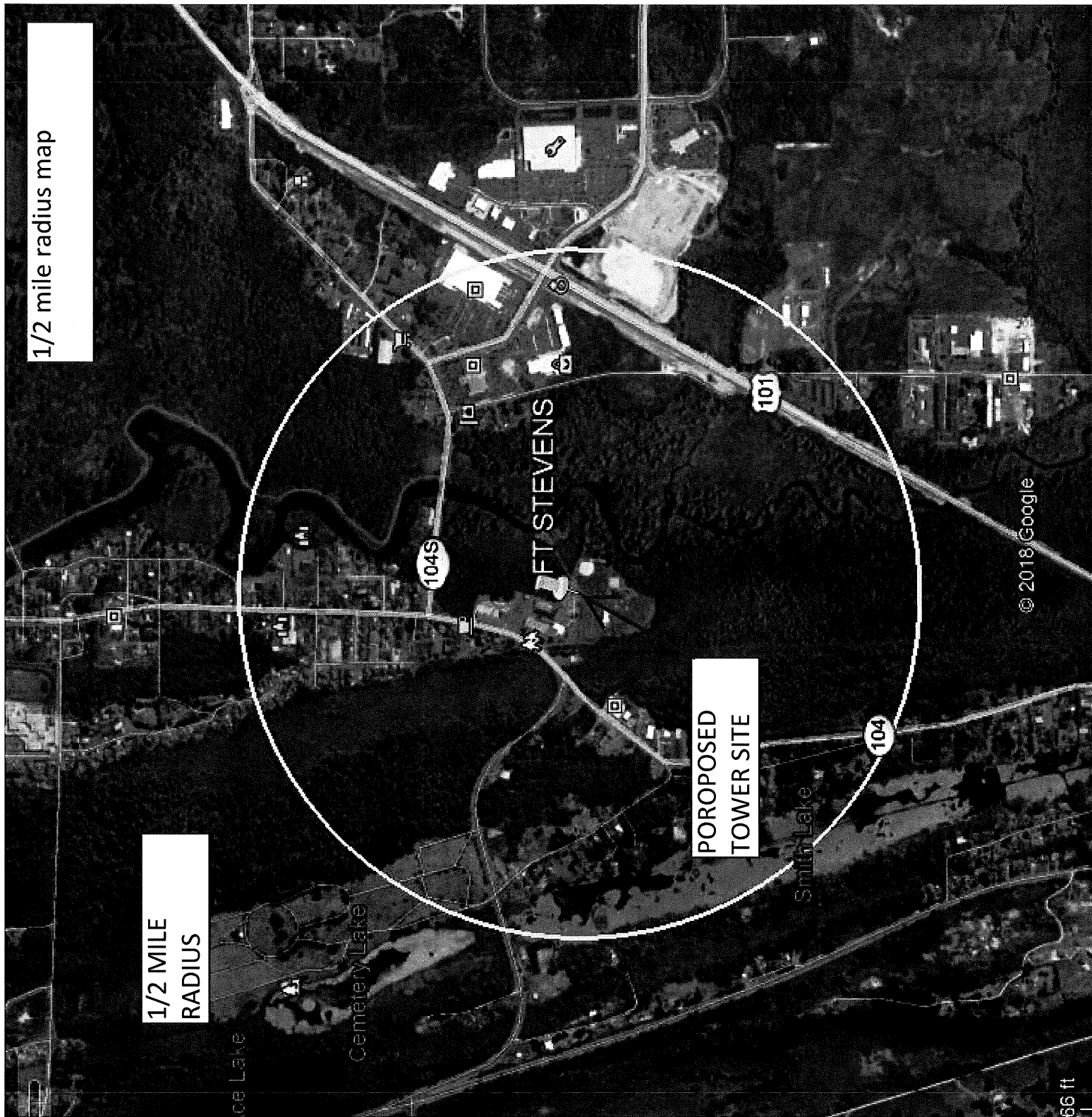
*RESPONSE: There are no existing other tall structures within the area available for collocation at a height required to achieve the coverage objective.*



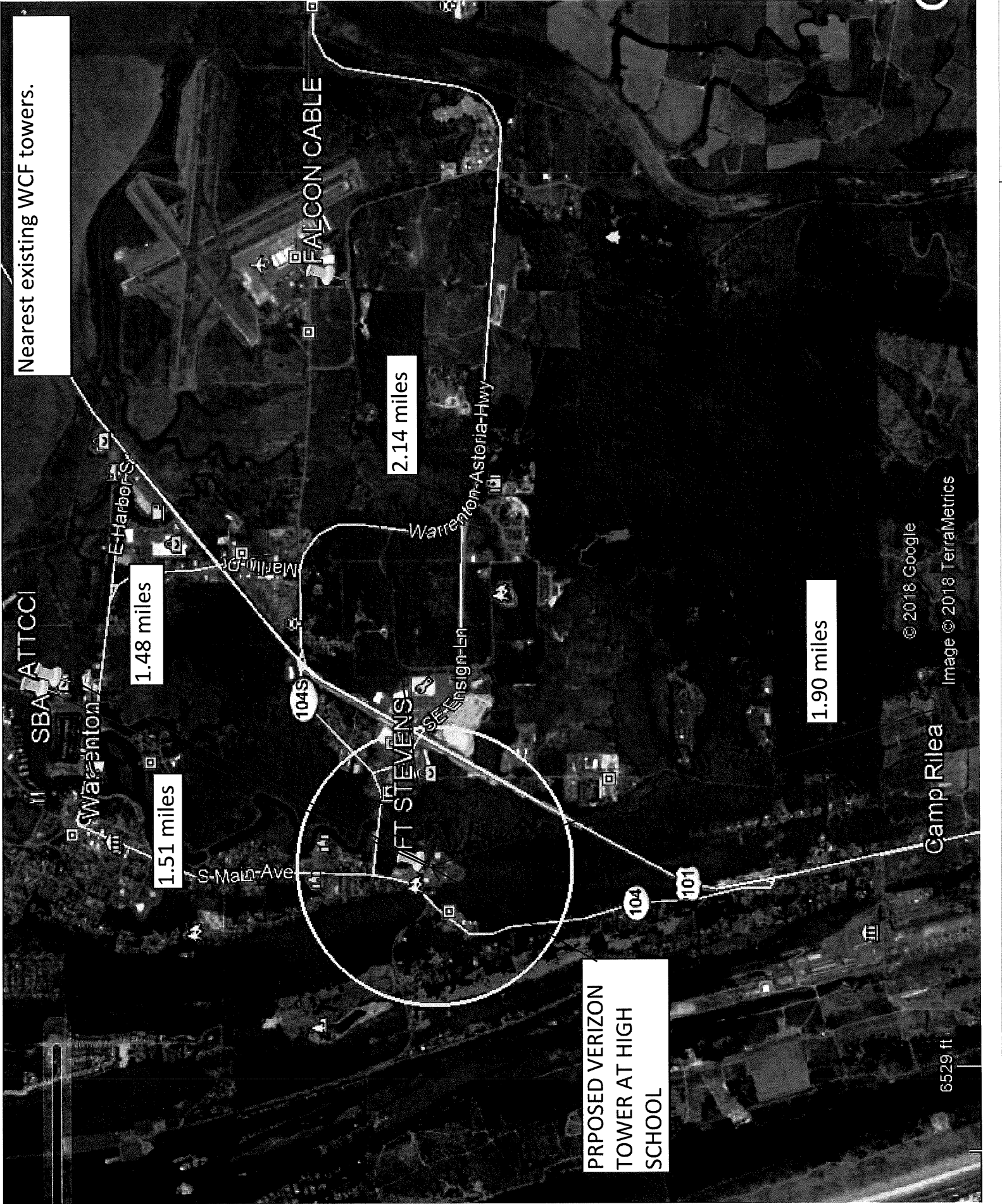
1/2 mile radius map

1/2 MILE  
RADIUS

PROPOSED  
TOWER SITE



Nearest existing WCF towers.



1.51 miles

1.48 miles

2.14 miles

1.90 miles

PROPOSED VERIZON  
TOWER AT HIGH  
SCHOOL

© 2018 Google

Image © 2018 TerraMetrics

6529 ft

**EXISTING TOWERS – COLLOCATION STUDY EXHIBIT**

AT&T CCI TOWER – 825 NE 1<sup>ST</sup> COURT 1.51 MILES TO NE



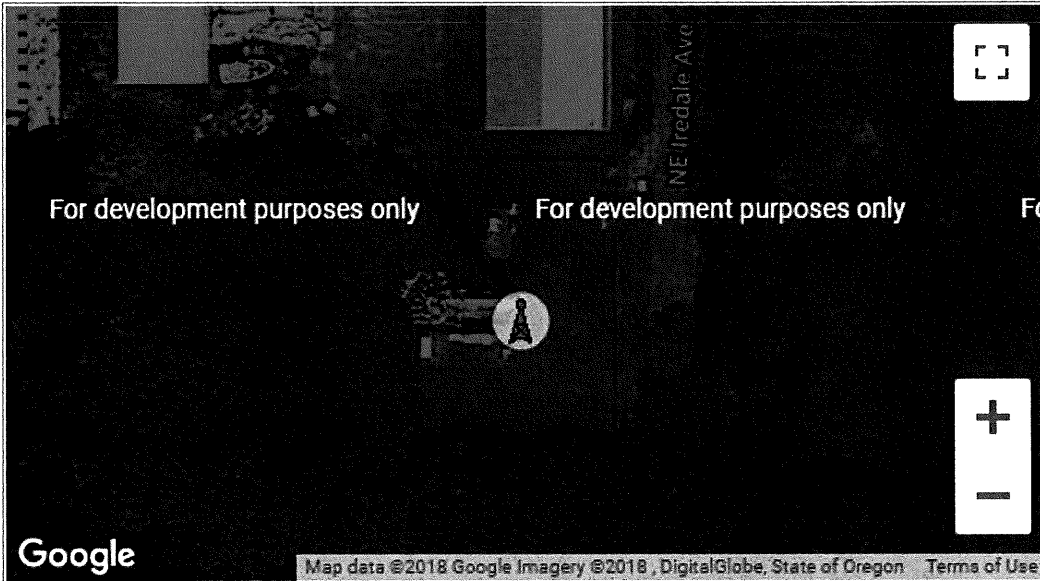
• **Ownership Info**

Rep	Company: Crown Castle Contact: Don Snyder Phone: (724)416-2470 Email: <a href="mailto:Don.Snyder@crowncastle.com">Don.Snyder@crowncastle.com</a>	Address:	2000 Corporate Drive Canonsburg, PA, 15317
Owner	Company: CCATT LLC Contact: Not Recorded Phone: (724)416-2000 Email: <a href="mailto:Regulatory.Department@Crowncastle.com">Regulatory.Department@Crowncastle.com</a>	Address:	2000 Corporate Drive Canonsburg, PA, 15317

• **Tower Characteristics**

Registration #:	1056060	Ground Elev:	8.9 feet
Latitude:	46.1664	Height Of Structure:	99.1 feet
Longitude:	-123.9142	Overall Height:	114.8 feet
Structure Type:	NA	Structure Address:	825 NE 1st Court WARRENTON, OR
Status:	Constructed		
Date Constructed	03/31/1995		

SBA TOWER 113 NE IREDALE AVE. 1.48 MILES TO NE



• **Ownership Info**

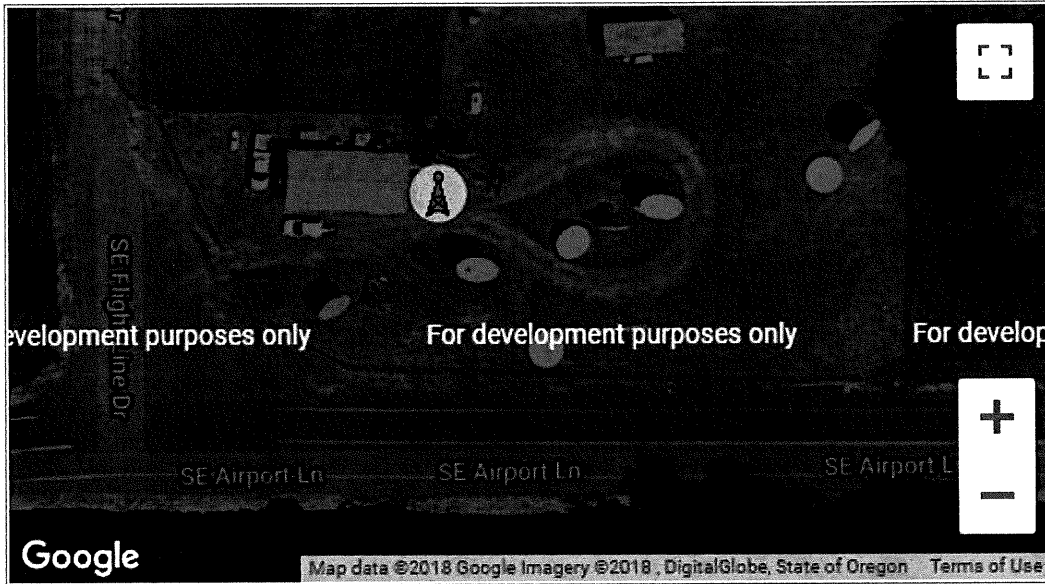
Rep	Company:	SBA Structures, LLC	Attn:	Edward G. Roach
	Contact:	Edward G Roach	Address:	8051 Congress Avenue
	Phone:	(561)995-7670		Boca Raton, FL, 33487
	Email:	<a href="mailto:ERoach@sbase.com">ERoach@sbase.com</a>		
Owner	Company:	SBA Structures, LLC	Attn:	Edward G. Roach
	Contact:	Not Recorded	Address:	8051 Congress Avenue
	Phone:	(561)995-7670		Boca Raton, FL, 33487
	Email:	<a href="mailto:ERoach@sbase.com">ERoach@sbase.com</a>		

• **Tower Characteristics**

Registration #:	1232726	Ground Elev:	6.9 feet
Latitude:	46.1657	Height Of Structure:	145.0 feet
Longitude:	-123.9134	Overall Height:	156.8 feet
Structure Type:	Tower	Structure Address:	113 NE Iredale Avenue
Status:	Constructed		(OR20936-A)
Date Constructed:	03/28/2002		Warrenton, OR

FALCON CABLE TOWER - 1390 SE FLIGHT LINE DR.

2.14 MILES TO EAST



• **Ownership Info**

Rep	Company:	Falcon Cable Systems Company II, L.P.	Attn:	Alexis Anderten
	Contact:	Not Recorded	Address	12405 Powerscourt Drive St. Louis, MO, 63131
	Phone:	(303)323-1423		
	Email:	<a href="mailto:CharterFCC@chartercom.com">CharterFCC@chartercom.com</a>		
Owner	Company:	Falcon Cable Systems Company II, L.P.	Attn:	Alexis Anderten
	Contact:	Not Recorded	Address	12405 Powerscourt Drive St. Louis, MO, 63131
	Phone:	(303)323-1423		
	Email:	<a href="mailto:CharterFCC@chartercom.com">CharterFCC@chartercom.com</a>		

• **Tower Characteristics**

Registration #:	1064979	Ground Elev:	11.2 feet
Latitude:	46.1512	Height Of Structure:	42.0 feet
Longitude:	-123.8831	Overall Height:	53.2 feet
Structure Type:	NA	Structure Address:	1390 SE Flight Line Drive Warrenton, OR
Status:	Constructed		
Date Constructed:	07/01/1993		

VERIZON TOWER CAMP RILEA - 91355 HWY 101.

1.90 MILES TO SOUTH



• **Ownership Info**

Rep	Company: Verizon Wireless (VAW) LLC Contact: Regulatory Manager Phone: (770)797-1070 Email: <a href="mailto:Network.Regulatory@VerizonWireless.com">Network.Regulatory@VerizonWireless.com</a>	Attn: Network Regulatory Address: 1120 Sanctuary Pkwy Alpharetta, GA. 30009
Owner	Company: Verizon Wireless (VAW) LLC Contact: Not Recorded Phone: (770)797-1070 Email: <a href="mailto:Network.Regulatory@VerizonWireless.com">Network.Regulatory@VerizonWireless.com</a>	Attn: Network Regulatory Address: 1120 Sanctuary Pkwy Alpharetta, GA. 30009

• **Tower Characteristics**

Registration #:	1295413	Ground Elev:	170.0 feet
Latitude	46.1211	Height Of Structure:	99.7 feet
Longitude:	-123.9146	Overall Height:	273.6 feet
Structure Type:	NA	Structure Address:	91355 Highway 101 Warrenton, OR
Status:	Constructed		
Date Constructed:	10/28/2015		



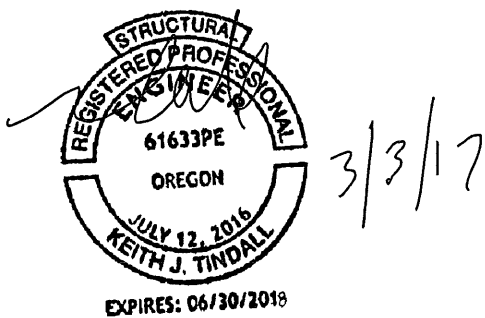
**Structural Design Report**  
100' Monopole  
Site: OR1 Fort Stevens, OR

Prepared for: VERIZON WIRELESS  
by: Sabre Towers & Poles™

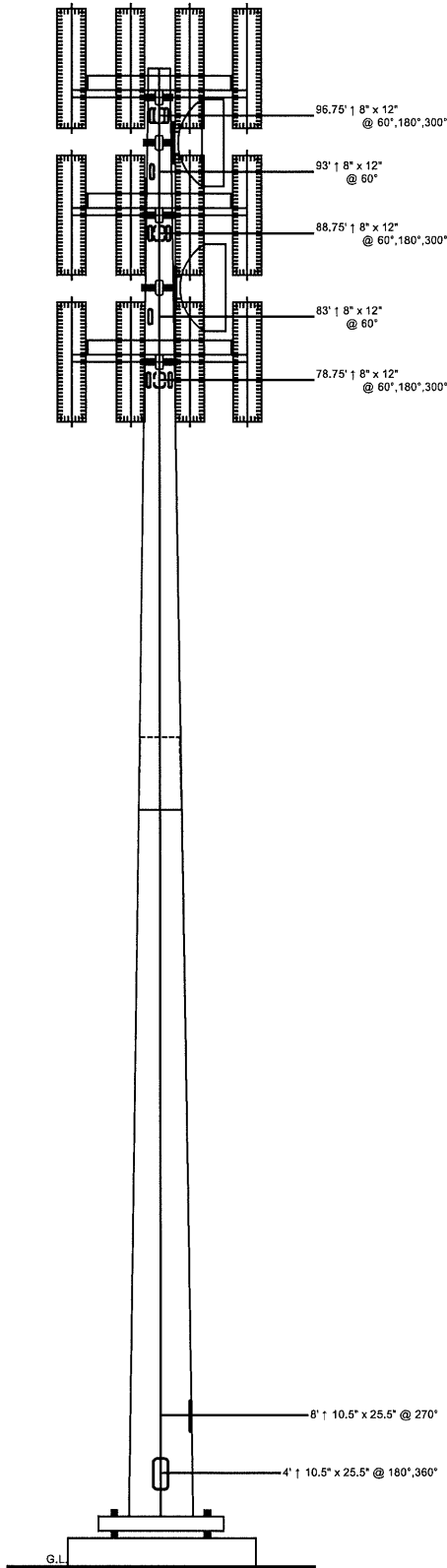
Job Number: 158290

March 3, 2017

Monopole Profile.....	1
Foundation Design Summary.....	2
Pole Calculations.....	3-9
Foundation Calculations.....	10-15



Length (ft)	53' - 3"
Number Of Sides	18
Thickness (in)	7/16"
Lap Splice (ft)	5' - 0"
Top Diameter (in)	33.11"
Bottom Diameter (in)	52.16"
Taper (in/ft)	0.3577
Grade	A572-65
Weight (lbs)	12821
Overall Steel Height (ft)	99
	6059
	35.65"
	17.5"
	5' - 0"
	3/8"
	50' - 9"



### Designed Appurtenance Loading

Elev	Description	Tx-Line
100	(12) 8' x 2' x 3in Panel	(12) 1 5/8"
100	(18) RRU ( 12.8" x 15" x 3.4")	(1) DC/Fiber Trunks
100	(9) TMA	
98	Sq. L.P. Platform (Monopole Only) - 12' w/ Handrail	
95	(1) Dish Mount (Monopole Only) - Pipe Mount (up to 6' Dish)	
95	(1) 6' H.P. Dish	(1) EW63
90	Sq. L.P. Platform (Monopole Only) - 12' w/ Handrail	
90	(12) 8' x 2' x 3in Panel	(12) 1 5/8"
90	(24) RRH	(3) DC/Fiber Trunks
90	(4) DC6-48-60-18-8F	
85	(1) Dish Mount (Monopole Only) - Pipe Mount (up to 6' Dish)	
85	(1) 6' H.P. Dish	(1) EW63
80	Sq. L.P. Platform (Monopole Only) - 12' w/ Handrail	
80	(12) 8' x 2' x 3in Panel	(12) 1 5/8"
80	(24) RRH	(3) DC/Fiber Trunks
80	(4) DC6-48-60-18-8F	

### Load Case Reactions

Description	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
3s Gusted Wind	39.45	63.24	5230.47	6.61	7.37
3s Gusted Wind 0.9 Dead	29.59	63.33	5200.74	6.55	7.31
3s Gusted Wind&Ice	55.91	57.06	4615.75	5.79	6.42
Service Loads	32.9	8.85	731.86	0.94	1.03

### Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	64.75"	2.25"	59"	18	2.25"

### Anchor Bolt Dimensions

Length	Diameter	Hole Diameter	Weight	Type	Finish
84"	2.25"	2.625"	2179.8	A615-75	Galv-18"

### Notes

- 1) Antenna Feed Lines Run Inside Pole
- 2) All dimensions are above ground level, unless otherwise specified.
- 3) Weights shown are estimates. Final weights may vary.
- 4) The Monopole was designed for a basic wind speed of 120 mph with 0" of radial ice, and 120 mph with 1/2" of radial ice, in accordance with ANSI/TIA-222-G, Structure Class II, Exposure Category C, Topographic Category 1.
- 5) Full Height Step Bolts
- 6) Tower Rating: 100%
- 7) The tower design meets the requirements for an Ultimate Wind Speed of 155 mph (Risk Category II), in accordance with the 2014 Oregon Structural Specialty Code.



**Sabre Communications Corporation**  
 7101 Southbridge Drive  
 P.O. Box 658  
 Sioux City, IA 51102-0658  
 Phone: (712) 258-6650  
 Fax: (712) 279-0814

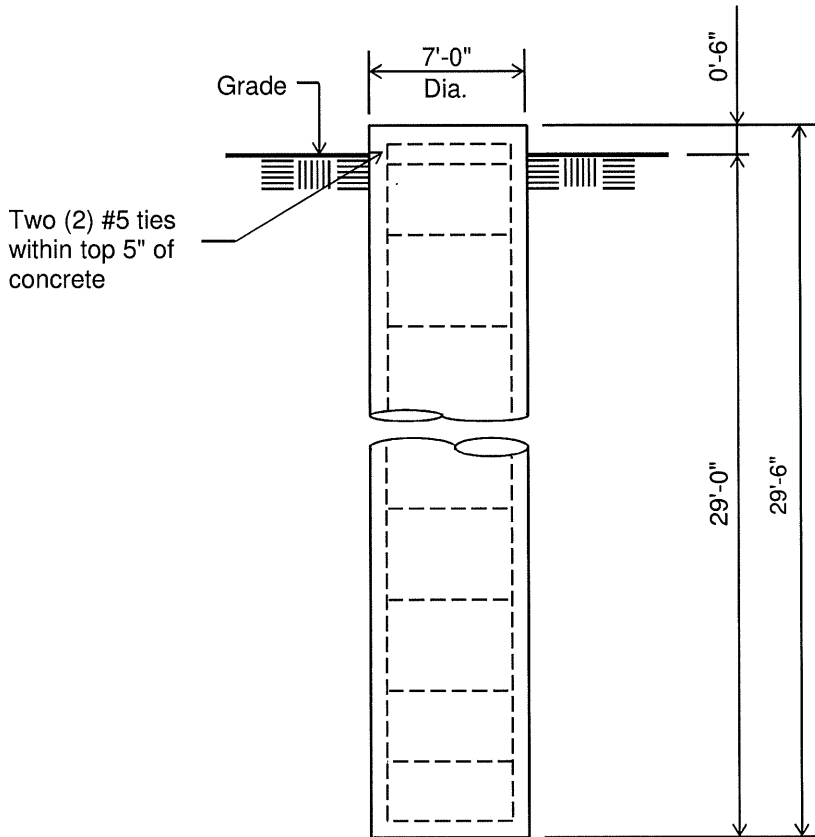
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Job: 158290  
 Customer: VERIZON WIRELESS  
 Site Name: OR1 Fort Stevens, OR  
 Description: 100' Monopole  
 Date: 3/3/2017 By: KJT



**Customer: VERIZON WIRELESS**  
**Site: OR1 Fort Stevens, OR**

100' Monopole at  
120 mph Wind with no ice and 120 mph Wind with 0.5 in. Ice per ANSI/TIA-222-G.  
Antenna Loading per Page 1



**ELEVATION VIEW**  
(42.05 Cu. Yds. each)  
(1 REQUIRED; NOT TO SCALE)

**Notes:**

- 1). Concrete shall have a minimum 28-day compressive strength of 4500 PSI, in accordance with ACI 318-11.
- 2). Rebars to conform to ASTM specification A615 Grade 60.
- 3). All rebar to have a minimum of 3" concrete cover.
- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by Black Mountain Consulting, Project No. 170002-GEO, dated February 3, 2017
- 6). See the geotechnical report for drilled pier installation requirements, if specified.
- 7). The foundation is based on the following factored loads:  
Moment (kip-ft) = 5249.38  
Axial (kips) = 39.45  
Shear (kips) = 63.47

Rebar Schedule per Pier	
Pier	(34) #10 vertical rebar w/#5 ties, two within top 5" of pier then 8" C/C

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Sabre Towers and Poles on: 23 feb 2017 at: 14:29:31  
 =====

100' Monopole / OR1 Fort Stevens, OR

\* All pole diameters shown on the following pages are across corners.  
 See profile drawing for widths across flats.

=====

ELEV	SECTION	No.	OUTSIDE	THICK	RESISTANCES	SPLICE	...OVERLAP...	w/t
ft	NAME	SIDE	DIAM	-NESS	♦*Pn ♦*Mn	TYPE	LENGTH RATIO	
			in	in	kip ft-kip		ft	
99.0	A	18	17.77	0.375	1514.4 526.3			6.5
			34.38	0.375	2960.5 2032.0			
53.2	A/B	18	34.38	0.375	2960.5 2032.0	SLIP	5.00 1.72	
			35.45	0.438	3556.9 2510.7			
48.2	B	18	35.45	0.438	3556.9 2510.7			12.3
			52.97	0.438	5090.5 5412.7			
0.0								

=====

SECTION	BASE	BOLTS	AT	BASE	OF	SECTION	CALC
NAME	ELEV	NUMBER	TYPE	DIAM	STRENGTH	THREADS IN	BASE
	ft			in	ksi	SHEAR PLANE	ELEV
							ft
A	48.250	0	A325	0.00	92.0	0	48.250
B	0.000	0	A325	0.00	92.0	0	0.000

=====

SECTION	No. of	LENGTH	OUTSIDE	DIAMETER	THICK-	MAT-	FLANGE	FLANGE	WELD
NAME	SIDES	ft	BOT	TOP	NESS	ERIAL	BOT	TOP	GROUP
			* in	* in	in	ID	ID	ID	ID
A	18	50.75	36.20	17.77	0.375	1	0	0	0
B	18	53.25	52.97	33.63	0.438	2	0	0	0

\* - Diameter of circumscribed circle

=====

TYPE OF	TYPE	NO OF	ORIENT	HEIGHT	WIDTH	.THICKNESS.	IRREGULARITY
SHAPE	NO	ELEM.	& deg	in	in	WEB FLANGE	.PROJECTION.
						in in	% OF ORIENT
							AREA
							deg
PL	1	1	0.0	36.20	0.38	0.375 0.375	0.00 0.0
PL	2	1	0.0	52.97	0.44	0.438 0.438	0.00 0.0

& - with respect to vertical

=====

MATERIAL	ELASTIC	UNIT	..	..	THERMAL
TYPE NO.	MODULUS	WEIGHT	STRENGTH	STRENGTH	COEFFICIENT
	ksi	pcf	Fu	Fy	/deg
			ksi	ksi	
1	29000.0	490.0	80.0	65.0	0.00001170
2	29000.0	490.0	80.0	65.0	0.00001170

\* Only 3 condition(s) shown in full  
 \* RRUS/TMAS were assumed to be behind antennas  
 \* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

=====

LOADING CONDITION A  
 120 mph wind with no ice. Wind Azimuth: 0°

=====

LOAD	ELEV	APPLY..LOAD..AT	LOAD	.....FORCES.....	.....MOMENTS.....
TYPE	ft	RADIUS AZI	AZI	HORIZ DOWN	VERTICAL TORSNAL
		ft		kip kip	ft-kip ft-kip

C	99.000	0.00	0.0	0.0	12.5457	1.8927	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0000	1.4643	0.0000	0.0000
C	97.000	0.00	0.0	0.0	4.5208	2.6316	0.0000	0.0000
C	94.000	0.00	0.0	0.0	0.0000	0.0575	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	1.3649	0.0000	0.0000
C	89.000	0.00	0.0	0.0	14.5476	5.4569	0.0000	0.0000
C	84.000	0.00	0.0	0.0	0.0000	0.0514	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	1.2115	0.0000	0.0000
C	79.000	0.00	0.0	0.0	14.1913	5.4641	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0854	0.0969	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.0854	0.0969	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.1043	0.1231	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.1043	0.1231	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.1208	0.1492	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.1208	0.1492	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.1298	0.3575	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.1298	0.3575	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.1333	0.2080	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.1333	0.2080	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.1389	0.2322	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.1389	0.2322	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.1383	0.2564	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.1383	0.2564	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.1441	0.2807	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.1441	0.2807	0.0000	0.0000

ANTENNA LOADING

.....ANTENNA.....	ATTACHMENT		.....ANTENNA FORCES.....					
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
HP	84.0	0.0	1.6	0.0	2.69	0.00	0.34	0.00
HP	94.0	0.0	1.5	0.0	2.75	0.00	0.34	0.00

LOADING CONDITION M

120 mph wind with no ice. Wind Azimuth: 0°

LOADS ON POLE

LOAD TYPE	ELEV	APPLY..	LOAD..	AT	LOAD	.....FORCES.....		.....MOMENTS.....	
						HORIZ	DOWN	VERTICAL	TORSNAL
	ft	RADIUS	ft	AZI	AZI	kip	kip	ft-kip	ft-kip
C	99.000	0.00	0.0	0.0	0.0	12.5457	1.4196	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0	0.0000	1.0982	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0	4.5208	1.9737	0.0000	0.0000
C	94.000	0.00	0.0	0.0	0.0	0.0000	0.0431	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0	0.0000	1.0237	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0	14.5476	4.0927	0.0000	0.0000
C	84.000	0.00	0.0	0.0	0.0	0.0000	0.0386	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0	0.0000	0.9087	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0	14.1913	4.0981	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0	0.0854	0.0727	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.0	0.0854	0.0727	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.0	0.1043	0.0923	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.0	0.1043	0.0923	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.0	0.1208	0.1119	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0	0.1208	0.1119	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0	0.1298	0.2681	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.0	0.1298	0.2681	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.0	0.1333	0.1560	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.0	0.1333	0.1560	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.0	0.1389	0.1742	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.0	0.1389	0.1742	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.0	0.1383	0.1923	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.0	0.1383	0.1923	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.0	0.1441	0.2105	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0	0.1441	0.2105	0.0000	0.0000

ANTENNA LOADING

.....ANTENNA.....	ATTACHMENT		.....ANTENNA FORCES.....					
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
HP	84.0	0.0	1.6	0.0	2.69	0.00	0.25	0.00
HP	94.0	0.0	1.5	0.0	2.75	0.00	0.25	0.00

LOADING CONDITION Y

120 mph wind with 0.5 ice. Wind Azimuth: 0°

LOADS ON POLE

LOAD TYPE	ELEV	APPLY..	LOAD..	AT	LOAD	.....FORCES.....		.....MOMENTS.....	
						HORIZ	DOWN	VERTICAL	TORSNAL
	ft	RADIUS	ft	AZI	AZI	kip	kip	ft-kip	ft-kip
C	99.000	0.00	0.0	0.0	0.0	9.8760	2.8948	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0	0.0000	1.4643	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0	4.4227	5.3923	0.0000	0.0000
C	94.000	0.00	0.0	0.0	0.0	0.0000	0.0575	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0	0.0000	1.3649	0.0000	0.0000

C	89.000	0.00	0.0	0.0	12.3725	9.1408	0.0000	0.0000
C	84.000	0.00	0.0	0.0	0.0000	0.0514	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	1.2115	0.0000	0.0000
C	79.000	0.00	0.0	0.0	12.0322	9.1049	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.1091	0.1263	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.1091	0.1263	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.1304	0.1592	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.1304	0.1592	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.1487	0.1917	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.1487	0.1917	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.1587	0.4039	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.1587	0.4039	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.1622	0.2565	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.1622	0.2565	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.1678	0.2845	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.1678	0.2845	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.1661	0.3112	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.1661	0.3112	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.1719	0.3347	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.1719	0.3347	0.0000	0.0000

ANTENNA LOADING

.....ANTENNA.....	ATTACHMENT		.....ANTENNA FORCES.....					
TYPE	ELEV	AZI	RAD	AZI	AXIAL	SHEAR	GRAVITY	TORSION
	ft		ft		kip	kip	kip	ft-kip
HP	84.0	0.0	1.6	0.0	1.78	0.00	0.82	0.00
HP	94.0	0.0	1.5	0.0	1.83	0.00	0.83	0.00

(USA 222-G) - Monopole Spatial Analysis (c)2015 Guymast Inc.

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Sabre Towers and Poles on: 23 feb 2017 at: 14:29:31

100' Monopole / OR1 Fort Stevens, OR

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

MAST ELEV ft	.....DEFLECTIONS (ft).....			.....ROTATIONS (deg).....		
	HORIZONTAL ALONG	ACROSS	DOWN	TILT ALONG	ACROSS	TWIST
99.0	6.61A	0.32C	0.61A	7.37A	0.35C	-0.04J
83.7	4.72A	0.23C	0.37A	6.89A	0.34C	-0.03J
68.5	3.06A	0.15C	0.19A	5.64A	0.28C	-0.02J
53.2	1.77A	0.09C	0.08A	4.09A	0.20C	-0.01J
48.2	1.44A	0.07C	0.06A	3.66A	0.18C	-0.01J
36.2	0.78A	0.04C	0.02A	2.61A	0.13C	-0.01J
24.1	0.33A	0.02C	0.01A	1.65A	0.08C	0.00J
12.1	0.08A	0.00C	0.00A	0.78A	0.04C	0.00J
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

MAXIMUM ANTENNA AND REFLECTOR ROTATIONS

ELEV ft	ANT AZI deg	ANT TYPE	..... BEAM DEFLECTIONS (deg) .....			
			ROLL	YAW	PITCH	TOTAL
94.0	0.0	HP	-6.878 J	0.400 K	7.215 A	7.215 A
84.0	0.0	HP	-6.572 J	0.366 K	6.900 A	6.900 A

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t.WIND.DIR			MOMENT.w.r.t.WIND.DIR		TORSION ft-kip
		ALONG kip	ACROSS kip	DIR kip	ALONG ft-kip	ACROSS ft-kip	
99.0	2.90 AH	12.55 X	0.00 I	0.00 AF	0.00 Q	0.00 L	
83.7	23.93 AH	38.35 A	-2.74 K	-376.18 A	14.25 W	6.86 D	
68.5	23.93 AI	38.35 M	-2.74 W	-376.18 A	14.25 W	6.86 D	
53.2	36.66 AI	54.12 M	-2.74 W	-1147.23 A	-57.22 C	6.78 D	
	36.67 AI	54.12 A	2.74 C	-1147.24 A	-57.22 C	6.78 D	
	39.58 AI	55.96 A	2.74 C	-2012.40 A	-100.31 C	6.78 D	

	39.58	AH	55.99	M	-2.76	K	-2012.44	A	-100.33	C	6.78	D
48.2	41.59	AH	56.64	M	-2.76	K	-2301.47	A	-114.39	C	6.79	D
	41.60	AH	56.64	M	2.77	O	-2301.49	A	114.39	K	6.79	D
36.2	44.69	AH	58.24	M	2.77	O	-3010.26	A	-148.44	C	-6.80	J
	44.69	AH	58.24	M	2.78	O	-3010.26	A	-148.44	C	-6.80	J
24.1	48.12	AH	59.92	M	2.78	O	-3734.93	A	-182.30	C	-6.82	J
	48.12	AH	59.93	M	2.78	O	-3734.92	A	-182.30	C	-6.82	J
12.1	51.87	AH	61.59	M	2.78	O	-4475.16	A	-215.76	C	-6.83	J
	51.87	AH	61.59	M	2.78	O	-4475.17	A	-215.76	C	-6.83	J
	55.91	AH	63.33	M	2.78	O	-5230.47	A	-248.95	C	-6.83	J
base	55.91	AH	-63.33	M	-2.78	O	5230.47	A	248.95	C	6.83	J
reaction												

COMPLIANCE WITH 4.8.2 & 4.5.4

ELEV	AXIAL	BENDING	SHEAR +	TOTAL	SATISFIED	D/t(w/t)	MAX
ft			TORSIONAL				ALLOWED
99.00	0.00AH	0.00AF	0.02X	0.00AH	YES	6.47A	45.2
83.75	0.01AH	0.41A	0.04A	0.42A	YES	9.03A	45.2
	0.01AI	0.41A	0.04M	0.42A	YES	9.03A	45.2
68.50	0.01AI	0.81A	0.04M	0.82A	YES	11.60A	45.2
	0.01AI	0.81A	0.04A	0.82A	YES	11.60A	45.2
53.25	0.01AI	0.99A	0.04A	1.00A	YES	14.16A	45.2
	0.01AH	0.85A	0.03M	0.86A	YES	11.89A	45.2
48.25	0.01AH	0.88A	0.03M	0.89A	YES	12.61A	45.2
	0.01AH	0.92A	0.03M	0.93A	YES	12.30A	45.2
36.19	0.01AH	0.95A	0.03M	0.95A	YES	14.04A	45.2
	0.01AH	0.95A	0.03M	0.95A	YES	14.04A	45.2
24.12	0.01AH	0.95A	0.03M	0.96A	YES	15.78A	45.2
	0.01AH	0.95A	0.03M	0.96A	YES	15.78A	45.2
12.06	0.01AH	0.96A	0.03M	0.97A	YES	17.52A	45.2
	0.01AH	0.96A	0.03M	0.97A	YES	17.52A	45.2
0.00	0.01AH	0.97A	0.02M	0.97A	YES	19.26A	45.2

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

DOWN	SHEAR.w.r.t.WIND.DIR	MOMENT.w.r.t.WIND.DIR	TORSION
kip	ALONG ACROSS	ALONG ACROSS	ft-kip
	kip	ft-kip	
55.91	63.33	2.78	-5230.47
AH	M	O	A
			-248.95
			C
			-6.83
			J

(USA 222-G) - Monopole Spatial Analysis (c)2015 Guymast Inc.

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Sabre Towers and Poles on: 23 feb 2017 at: 14:29:39

100' Monopole / OR1 Fort Stevens, OR

\*\*\*\*\* Service Load Condition \*\*\*\*\*

\* Only 1 condition(s) shown in full  
 \* RRUs/TMAS were assumed to be behind antennas  
 \* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A

60 mph wind with no ice. Wind Azimuth: 0°

LOADS ON POLE

LOAD TYPE	ELEV ft	APPLY. RADIUS ft	LOAD. AZI	LOAD AZI	FORCES		MOMENTS	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	99.000	0.00	0.0	0.0	1.7539	1.5773	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.0000	1.2203	0.0000	0.0000
C	97.000	0.00	0.0	0.0	0.6320	2.1930	0.0000	0.0000
C	94.000	0.00	0.0	0.0	0.0000	0.0479	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	1.1374	0.0000	0.0000
C	89.000	0.00	0.0	0.0	2.0367	4.5474	0.0000	0.0000
C	84.000	0.00	0.0	0.0	0.0000	0.0428	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	1.0096	0.0000	0.0000
C	79.000	0.00	0.0	0.0	1.9871	4.5534	0.0000	0.0000
D	99.000	0.00	180.0	0.0	0.0119	0.0808	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.0119	0.0808	0.0000	0.0000
D	83.750	0.00	180.0	0.0	0.0146	0.1026	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.0146	0.1026	0.0000	0.0000
D	68.500	0.00	180.0	0.0	0.0169	0.1244	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0169	0.1244	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0181	0.2979	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.0181	0.2979	0.0000	0.0000
D	48.250	0.00	180.0	0.0	0.0186	0.1733	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.0186	0.1733	0.0000	0.0000
D	36.187	0.00	180.0	0.0	0.0194	0.1935	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.0194	0.1935	0.0000	0.0000
D	24.125	0.00	180.0	0.0	0.0193	0.2137	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.0193	0.2137	0.0000	0.0000
D	12.062	0.00	180.0	0.0	0.0201	0.2339	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0201	0.2339	0.0000	0.0000

ANTENNA LOADING

ANTENNA TYPE	ELEV ft	AZI	ATTACHMENT		ANTENNA FORCES			
			RAD ft	AZI	AXIAL kip	SHEAR kip	GRAVITY kip	TORSION ft-kip
HP	84.0	0.0	1.6	0.0	0.38	0.00	0.28	0.00
HP	94.0	0.0	1.5	0.0	0.38	0.00	0.28	0.00

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

MAST ELEV ft	DEFLECTIONS (ft)			ROTATIONS (deg)		
	HORIZONTAL ALONG	ACROSS	DOWN	TILT ALONG	ACROSS	TWIST
99.0	0.94A	-0.04K	0.01A	1.03A	-0.05K	-0.01J
83.7	0.67A	-0.03K	0.01A	0.97A	-0.04K	0.00J
68.5	0.43A	-0.02K	0.00A	0.79A	-0.04K	0.00J
53.2	0.25A	-0.01K	0.00A	0.57A	-0.03K	0.00J
48.2	0.20A	-0.01K	0.00A	0.51A	-0.02K	0.00J
36.2	0.11A	-0.01K	0.00A	0.36A	-0.02K	0.00J
24.1	0.05A	0.00K	0.00A	0.23A	-0.01K	0.00J
12.1	0.01A	0.00K	0.00A	0.11A	-0.01K	0.00J
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

MAXIMUM ANTENNA AND REFLECTOR ROTATIONS

ELEV ft	ANT AZI deg	ANT TYPE	BEAM DEFLECTIONS (deg)			TOTAL
			ROLL	YAW	PITCH	
94.0	0.0	HP	-0.967 J	0.010 C	1.012 A	1.012 A
84.0	0.0	HP	-0.924 J	0.009 C	0.968 A	0.968 A

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

MAST ELEV ft	TOTAL			SHEAR.w.r.t.WIND.DIR			MOMENT.w.r.t.WIND.DIR			TORSION ft-kip
	AXIAL kip	ALONG kip	ACROSS kip	ALONG ft-kip	ACROSS ft-kip	DIR	ALONG ft-kip	ACROSS ft-kip	DIR	
99.0	1.58 A	1.75 J	0.00 E	0.00 J	0.00 K		0.00 J	0.00 K		0.00 I
83.7	12.56 A	5.37 A	-0.38 K	-53.28 G	-2.11 I		-53.28 G	-2.11 I		-0.95 J
68.5	19.69 K	7.57 A	0.38 C	-160.71 A	-7.39 C		-160.71 A	-7.39 C		-0.96 J
53.2	21.58 K	7.83 A	0.38 C	-281.92 A	-13.41 C		-281.92 A	-13.41 C		-0.96 J
	21.58 K	7.83 A	0.38 C	-281.93 A	-13.42 C		-281.93 A	-13.42 C		-0.96 J

48.2	23.07 K	7.92 A	0.38 C	-322.35 A	-15.38 C	-0.96 J
	23.07 J	7.92 A	-0.38 K	-322.35 A	-15.38 C	-0.96 J
36.2	25.16 J	8.14 A	-0.38 K	-421.45 A	-20.06 C	-0.96 J
	25.16 D	8.14 A	-0.38 K	-421.45 A	-20.06 C	-0.96 J
24.1	27.50 D	8.38 A	-0.38 K	-522.73 A	24.73 K	0.96 D
	27.50 D	8.38 A	-0.38 K	-522.73 A	24.73 K	0.96 D
12.1	30.08 D	8.61 A	-0.38 K	-626.19 A	29.39 K	-0.96 J
	30.08 D	8.61 A	-0.38 K	-626.19 A	29.39 K	-0.96 J
	32.90 D	8.85 A	-0.38 K	-731.86 A	34.01 K	-0.96 J
-----						
base						
reaction	32.90 D	-8.85 A	0.38 K	731.86 A	-34.01 K	0.96 J
-----						

COMPLIANCE WITH 4.8.2 & 4.5.4

ELEV ft	AXIAL	BENDING	SHEAR + TORSIONAL	TOTAL	SATISFIED	D/t(w/t)	MAX ALLOWED
99.00	0.00A	0.00J	0.00J	0.00J	YES	6.47A	45.2
83.75	0.01A	0.06G	0.01A	0.06G	YES	9.03A	45.2
	0.01K	0.06G	0.01A	0.06G	YES	9.03A	45.2
68.50	0.01K	0.11A	0.01A	0.12A	YES	11.60A	45.2
	0.01K	0.11A	0.01A	0.12A	YES	11.60A	45.2
53.25	0.01K	0.14A	0.01A	0.15A	YES	14.16A	45.2
	0.01K	0.12A	0.00A	0.13A	YES	11.89A	45.2
48.25	0.01K	0.12A	0.00A	0.13A	YES	12.61A	45.2
	0.01J	0.13A	0.00A	0.13A	YES	12.30A	45.2
36.19	0.01J	0.13A	0.00A	0.14A	YES	14.04A	45.2
	0.01D	0.13A	0.00A	0.14A	YES	14.04A	45.2
24.12	0.01D	0.13A	0.00A	0.14A	YES	15.78A	45.2
	0.01D	0.13A	0.00A	0.14A	YES	15.78A	45.2
12.06	0.01D	0.13A	0.00A	0.14A	YES	17.52A	45.2
	0.01D	0.13A	0.00A	0.14A	YES	17.52A	45.2
0.00	0.01D	0.14A	0.00A	0.14A	YES	19.26A	45.2

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

DOWN kip	SHEAR.w.r.t.WIND.DIR ALONG kip	ACROSS kip	MOMENT.w.r.t.WIND.DIR ALONG ft-kip	ACROSS ft-kip	TORSION ft-kip
32.90 D	8.85 A	-0.38 K	-731.86 A	34.01 K	-0.96 J

## Round Base Plate and Anchor Rods, per ANSI/TIA 222-G

### Pole Data

Diameter: 52.160 in (flat to flat)  
 Thickness: 0.4375 in  
 Yield (Fy): 65 ksi  
 # of Sides: 18 "0" IF Round  
 Strength (Fu): 80 ksi

### Reactions

Moment, Mu: 5230.47 ft-kips  
 Axial, Pu: 39.45 kips  
 Shear, Vu: 63.24 kips

### Anchor Rod Data

Quantity: 18  
 Diameter: 2.25 in  
 Rod Material: A615  
 Strength (Fu): 100 ksi  
 Yield (Fy): 75 ksi  
 BC Diam. (in): 59 BC Override:

### Anchor Rod Results

Maximum Rod (Pu+ Vu/η): 245.6 Kips  
 Allowable  $\Phi$ \*Rnt: 260.0 Kips (per 4.9.9)  
 Anchor Rod Interaction Ratio: **94.5% Pass**

### Plate Data

Diameter (in): 64.75 Dia. Override:  
 Thickness: 2.25 in  
 Yield (Fy): 50 ksi  
 Eff Width/Rod: 9.20 in  
 Drain Hole: 2.625 in. diameter  
 Drain Location: 23.75 in. center of pole to center of drain hole  
 Center Hole: 39.5 in. diameter

### Base Plate Results

Base Plate (Mu/Z): 44.5 ksi  
 Allowable  $\Phi$ \*Fy: 45.0 ksi (per AISC)  
 Base Plate Interaction Ratio: **98.8% Pass**



=====  
Lpile for windows, Version 2015-08.007

Analysis of Individual Piles and Drilled Shafts  
Subjected to Lateral Loading Using the p-y Method  
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-----  
Files Used for Analysis  
-----

Path to file locations:  
\Progra-2\Ensoft\Lpile2013\

Name of input data file:  
158290.1p8d

Name of output report file:  
158290.1p8o

Name of plot output file:  
158290.1p8p

Name of runtime message file:  
158290.1p8r

-----  
Date and Time of Analysis  
-----

Date: March 2, 2017

Time: 16:32:43

-----  
Problem Title  
-----

100' Monopole VERIZON WIRELESS OR1 Fort Stevens, OR (158290) 3-2-17 BD

Job Number:

Client:

Engineer:

Description:

-----  
Program Options and Settings  
-----

Computational Options:  
- Use unfactored loads in computations (conventional analysis)  
Engineering Units Used for Data Input and Computations:  
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:  
- Maximum number of iterations allowed = 300  
- Deflection tolerance for convergence = 1.0000E-05 in  
- Maximum allowable deflection = 100.0000 in  
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:  
- Static loading specified

- Use of p-y modification factors for p-y curves not selected  
- No distributed lateral loads are entered  
- Loading by lateral soil movements acting on pile not selected  
- Input of shear resistance at the pile tip not selected  
- Computation of pile-head foundation stiffness matrix not selected  
- Push-over analysis of pile not selected  
- Buckling analysis of pile not selected

Output Options:  
- Output files use decimal points to denote decimal symbols.  
- Report only summary tables of pile-head deflection, maximum bending moment,  
and maximum shear force in output report file.  
- No p-y curves to be computed and reported for user-specified depths  
- Print using wide report formats

-----  
Pile Structural Properties and Geometry  
-----

Number of pile sections defined = 1  
 Total length of pile = 29.500 ft  
 Depth of ground surface below top of pile = 0.5000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	84.0000
2	29.500	84.0000

-----  
 Input Structural Properties for Pile Sections:  
 -----

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile  
 Length of section = 29.500000 ft  
 Shaft Diameter = 84.000000 in  
 Shear capacity of section = 0.0000 lbs

-----  
 Ground Slope and Pile Batter Angles  
 -----

Ground Slope Angle = 0.000 degrees  
 = 0.000 radians  
 Pile Batter Angle = 0.000 degrees  
 = 0.000 radians

-----  
 Soil and Rock Layering Information  
 -----

The soil profile is modelled using 6 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 0.500000 ft  
 Distance from top of pile to bottom of layer = 2.500000 ft  
 Effective unit weight at top of layer = 100.051200 pcf  
 Effective unit weight at bottom of layer = 100.051200 pcf  
 Undrained cohesion at top of layer = 14.400000 psf  
 Undrained cohesion at bottom of layer = 14.400000 psf  
 Epsilon-50 at top of layer = 0.100000  
 Epsilon-50 at bottom of layer = 0.100000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 2.500000 ft  
 Distance from top of pile to bottom of layer = 9.500000 ft  
 Effective unit weight at top of layer = 100.051200 pcf  
 Effective unit weight at bottom of layer = 100.051200 pcf  
 Undrained cohesion at top of layer = 450.720000 psf  
 Undrained cohesion at bottom of layer = 450.720000 psf  
 Epsilon-50 at top of layer = 0.010000  
 Epsilon-50 at bottom of layer = 0.010000

Layer 3 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 9.500000 ft  
 Distance from top of pile to bottom of layer = 10.500000 ft  
 Effective unit weight at top of layer = 100.051200 pcf  
 Effective unit weight at bottom of layer = 100.051200 pcf  
 Undrained cohesion at top of layer = 450.720000 psf  
 Undrained cohesion at bottom of layer = 450.720000 psf  
 Epsilon-50 at top of layer = 0.010000  
 Epsilon-50 at bottom of layer = 0.010000

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 10.500000 ft  
 Distance from top of pile to bottom of layer = 20.500000 ft  
 Effective unit weight at top of layer = 124.934400 pcf  
 Effective unit weight at bottom of layer = 124.934400 pcf  
 Friction angle at top of layer = 32.000000 deg.  
 Friction angle at bottom of layer = 32.000000 deg.  
 Subgrade k at top of layer = 90.000000 pci  
 Subgrade k at bottom of layer = 90.000000 pci

Layer 5 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 20.500000 ft  
 Distance from top of pile to bottom of layer = 22.500000 ft  
 Effective unit weight at top of layer = 110.073600 pcf  
 Effective unit weight at bottom of layer = 110.073600 pcf  
 Undrained cohesion at top of layer = 450.720000 psf  
 Undrained cohesion at bottom of layer = 450.720000 psf  
 Epsilon-50 at top of layer = 0.010000  
 Epsilon-50 at bottom of layer = 0.010000

Layer 6 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 22.500000 ft  
 Distance from top of pile to bottom of layer = 50.500000 ft  
 Effective unit weight at top of layer = 124.934400 pcf  
 Effective unit weight at bottom of layer = 124.934400 pcf  
 Friction angle at top of layer = 36.000000 deg.  
 Friction angle at bottom of layer = 36.000000 deg.  
 Subgrade k at top of layer = 225.000000 pci  
 Subgrade k at bottom of layer = 225.000000 pci

(Depth of the lowest soil layer extends 21.000 ft below the pile tip)

-----  
 Summary of Input Soil Properties  
 -----

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	E50 or krm	kpy pci
1	Soft Clay	0.5000	100.0512	14.4000	--	0.10000	--
2	Soft Clay	2.5000	100.0512	14.4000	--	0.10000	--
3	Soft Clay	2.5000	100.0512	450.7200	--	0.01000	--
4	Soft Clay	9.5000	100.0512	450.7200	--	0.01000	--
5	Soft Clay	9.5000	100.0512	450.7200	--	0.01000	--
6	Soft Clay	10.5000	100.0512	450.7200	--	0.01000	--
7	Sand (Reese, et al.)	10.5000	124.9344	--	32.0000	--	90.0000
8	Sand (Reese, et al.)	20.5000	124.9344	--	32.0000	--	90.0000
9	Soft Clay	20.5000	110.0736	450.7200	--	0.01000	--
10	Soft Clay	22.5000	110.0736	450.7200	--	0.01000	--
11	Sand (Reese, et al.)	22.5000	124.9344	--	36.0000	--	225.0000
12	Sand (Reese, et al.)	50.5000	124.9344	--	36.0000	--	225.0000

-----  
 Static Loading Type  
 -----

Static loading criteria were used when computing p-y curves for all analyses.

-----  
 Pile-head Loading and Pile-head Fixity Conditions  
 -----

Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	1	V = 84627. lbs	M = 83990080. in-lbs	52600.	No
2	1	V = 8890. lbs	M = 8816280. in-lbs	32900.	No

V = shear force applied normal to pile axis  
 M = bending moment applied to pile head  
 y = lateral deflection normal to pile axis  
 S = pile slope relative to original pile batter angle  
 R = rotational stiffness applied to pile head  
 Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).  
 Thrust force is assumed to be acting axially for all pile batter angles.

-----  
 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness  
 -----

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

-----  
 Dimensions and Properties of Drilled Shaft (Bored Pile):  
 -----

Length of Section = 29.500000 ft  
 Shaft Diameter = 84.000000 in  
 Concrete Cover Thickness = 3.624191 in  
 Number of Reinforcing Bars = 34 bars  
 Yield Stress of Reinforcing Bars = 60000. psi  
 Modulus of Elasticity of Reinforcing Bars = 29000000. psi  
 Gross Area of Shaft = 5542. sq. in.  
 Total Area of Reinforcing Steel = 43.180000 sq. in.  
 Area Ratio of Steel Reinforcement = 0.78 percent  
 Edge-to-Edge Bar Spacing = 5.694565 in  
 Maximum Concrete Aggregate Size = 0.750000 in  
 Ratio of Bar Spacing to Aggregate Size = 7.59  
 Offset of Center of Rebar Cage from Center of Pile = 0.0000 in

-----  
 Axial Structural Capacities:  
 -----

Nom. Axial Structural Capacity =  $0.85 F_c A_c + F_y A_s$  = 23622.905 kips  
 Tensile Load for Cracking of Concrete = -2565.340 kips  
 Nominal Axial Tensile Capacity = -2590.800 kips

-----  
 Reinforcing Bar Dimensions and Positions Used in Computations:  
 -----

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.270000	1.270000	37.740809	0.00000
2	1.270000	1.270000	37.098200	6.934856

3	1.270000	1.270000	35.192257	13.633553
4	1.270000	1.270000	32.087883	19.867976
5	1.270000	1.270000	27.890795	25.425819
6	1.270000	1.270000	22.743919	30.117816
7	1.270000	1.270000	16.822526	33.784187
8	1.270000	1.270000	10.328263	36.300078
9	1.270000	1.270000	3.482283	37.579814
10	1.270000	1.270000	-3.482283	37.579814
11	1.270000	1.270000	-10.328263	36.300078
12	1.270000	1.270000	-16.822526	33.784187
13	1.270000	1.270000	-22.743919	30.117816
14	1.270000	1.270000	-27.890795	25.425819
15	1.270000	1.270000	-32.087883	19.867976
16	1.270000	1.270000	-35.192257	13.633553
17	1.270000	1.270000	-37.098200	6.934856
18	1.270000	1.270000	-37.740809	0.000000
19	1.270000	1.270000	-37.098200	-6.934856
20	1.270000	1.270000	-35.192257	-13.633553
21	1.270000	1.270000	-32.087883	-19.867976
22	1.270000	1.270000	-27.890795	-25.425819
23	1.270000	1.270000	-22.743919	-30.117816
24	1.270000	1.270000	-16.822526	-33.784187
25	1.270000	1.270000	-10.328263	-36.300078
26	1.270000	1.270000	-3.482283	-37.579814
27	1.270000	1.270000	3.482283	-37.579814
28	1.270000	1.270000	10.328263	-36.300078
29	1.270000	1.270000	16.822526	-33.784187
30	1.270000	1.270000	22.743919	-30.117816
31	1.270000	1.270000	27.890795	-25.425819
32	1.270000	1.270000	32.087883	-19.867976
33	1.270000	1.270000	35.192257	-13.633553
34	1.270000	1.270000	37.098200	-6.934856

NOTE: The positions of the above rebars were computed by LPILE

Minimum spacing between any two bars not equal to zero = 5.695 inches between bars 28 and 29.

Ratio of bar spacing to maximum aggregate size = 7.59

Concrete Properties:

Compressive Strength of Concrete	=	4500. psi
Modulus of Elasticity of Concrete	=	3823676. psi
Modulus of Rupture of Concrete	=	-503.115295 psi
Compression Strain at Peak Stress	=	0.002001
Tensile Strain at Fracture of Concrete	=	-0.0001152
Maximum Coarse Aggregate Size	=	0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	32.900
2	52.600

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	32.900	92430.053	0.00300000
2	52.600	93043.934	0.00300000

Note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in <sup>2</sup>
1	0.65	92430.	21.385000	60080.	1.8969E+09
2	0.65	93044.	34.190000	60479.	1.9110E+09
1	0.70	92430.	23.030000	64701.	1.8908E+09
2	0.70	93044.	36.820000	65131.	1.9040E+09
1	0.75	92430.	24.675000	69323.	1.8272E+09
2	0.75	93044.	39.450000	69783.	1.8413E+09

Layering Correction Equivalent Depths of Soil & Rock Layers

Top of Layer	Equivalent Top Depth	Same Layer	Layer is	F0	F1
--------------	----------------------	------------	----------	----	----

Layer No.	Below Pile Head ft	Below Grnd Surf ft	Type As Layer Above	Rock or is Below Rock Layer	Integral for Layer lbs	Integral for Layer lbs
1	0.5000	0.00	N.A.	No	0.00	1593.
2	2.5000	2.0000	Yes	No	1593.	101784.
3	9.5000	9.0000	Yes	No	103377.	18259.
4	10.5000	5.8687	No	No	121637.	1249085.
5	20.5000	20.5000	No	No	1370722.	56791.
6	22.5000	15.8918	No	No	1427513.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

-----  
Summary of Pile-head Responses for Conventional Analyses  
-----

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs  
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians  
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.  
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs  
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	84627.	M, in-lb	8.40E+07	52600.	4.9094	-0.03266	-699355.	9.19E+07
2	V, lb	8890.	M, in-lb	8816280.	32900.	0.09487	-4.48E-04	-58807.	9306121.

Maximum pile-head deflection = 4.9094143669 inches  
Maximum pile-head rotation = -0.0326629318 radians = -1.871448 deg.

This analysis ended normally

**1805.7.2.1 (2006 IBC) & 1807.3.2.1 (2009 IBC & 2012 IBC)**

$$d = A/2*(1+(1+(4.36*h/A))^0.5)$$

Monopole

Moment (ft-k)	5249.38
Shear (k)	63.5
Caisson Diameter, b (ft)	7
Caisson Height Above Ground (ft)	0.5
Caisson Height Below Ground (ft)	29
Lateral soil pressure per foot (lb/ft <sup>3</sup> )	331

Applied lateral force, P (lbs)	63470
Dist. from ground to application of P, h (ft)	83.21
A = 2.34*P/(S1*b)	6.63
Min. Depth of Embedment Required, d (ft)	28.06

**Andrew H. Thatcher**

*www.rfthatcher.com*

**Evaluation of Compliance with FCC Guidelines for  
Human Exposure to Radiofrequency Radiation**

**Site Address:  
1700 S Main St  
Warrenton OR 97146**

**Site Name:  
OR1 Fort Stevens**

**Prepared for:  
Black Rock Consulting**

on behalf of



**March 1, 2017**

**Prepared By:  
Andrew H. Thatcher, MSHP, CHP**

**Ground Level Exposures**

Table 1 shows the calculated Maximum Permissible Exposure (MPE) at 6' above ground level assuming all antennas operating at 100% and complete ground reflection. The predicted upper limit exposure is 0.01 mW/cm<sup>2</sup> or 1% of the FCC general public exposure limit. Table 1 also provides the combined input power for each frequency band. The calculations assume a 0 degree downtilt for all frequency bandwidths.

Table 1: Calculated Ground Level Power Density						
Site Name:	Verizon OR1 Fort Stevens					
Location	1700 S Main St Warrenton OR					
Carrier Type	Worst Case ERP (watts)	Worst Case ERP (dBm)	Antenna Height (ft)	Maximum outdoor exposure (with ground reflection) (mW/cm <sup>2</sup> )	% of Standard	General Population Exposure Limit (mW/cm <sup>2</sup> )
Verizon 700 Upper LTE	1790	62.53	100	0.0000	0.01%	0.497
Verizon PCS	3826.5	65.83	100	0.0056	0.56%	1.000
Verizon AWS	3546	65.50	100	0.0041	0.41%	1.000
			<b>Total</b>	0.0098	<b>0.9838%</b>	

**Discussion**

The RF signal levels from the proposed installation will be a tiny fraction of FCC exposure limits at any place of public access, and from the point of view of FCC exposure limits are entirely negligible.

The biological effects of RF energy have been extensively studied, and there are several thousand reports in the scientific literature on this subject. These reports have been critically reviewed by numerous independent panels, most recently the IEEE (formerly Institute of Electrical and Electronics Engineers) and the International Commission on Nonionizing Radiation Protection. These groups have affirmed existing health standards, or have developed and proposed standards for exposure to RF energy that are broadly similar to the FCC limits.

**For further information** The Federal Communications Commission (FCC) maintains a World Wide Web site at <http://www.fcc.gov>. A general information sheet about possible health and safety issues regarding radiofrequency energy is at: <https://www.fcc.gov/engineering-technology/electromagnetic-compatibility-division/radio-frequency-safety/faq/rf-safety>



### **Conclusions/Recommendations**

The maximum ground level predicted exposure is 0.01 mW/cm<sup>2</sup> or 1% of the FCC general public exposure limit.

It should be noted that wireless technology is changing rapidly, and companies including Verizon Wireless are frequently upgrading and introducing new services, and updating existing services to new technologies. Consequently the calculated exposure levels in Table 1 are based on current design data which may change in the future. However, as shown in Table 1, the RF exposure levels are a small fraction of the FCC exposure limits and any foreseeable upgrades to the site in the future are highly unlikely to affect its compliance with safety limits. However, compliance after major changes to the site should be established based on current design information.

### **Certification**

I hereby certify the following:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields.
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate, based on engineering design data for the site supplied to me.
3. The results of the analysis indicate that the site is in full compliance with the FCC regulations concerning RF exposure at all areas of public access.

Regards,



Andrew H. Thatcher, MSHP, CHP



Mail Processing Center  
Federal Aviation Administration  
Southwest Regional Office  
Obstruction Evaluation Group  
10101 Hillwood Parkway  
Fort Worth, TX 76177

Issued Date: 03/24/2017

Network Regulatory  
Verizon Wireless (VAW) LLC  
1120 Sanctuary Pkwy  
#150 GASA5REG  
Alpharetta, GA 30009

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Light Pole Fort Stevens - A  
Location: Warrenton, OR  
Latitude: 46-08-47.62N NAD 83  
Longitude: 123-55-38.36W  
Heights: 20 feet site elevation (SE)  
104 feet above ground level (AGL)  
124 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 1.

This determination expires on 09/24/2018 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination does not constitute authority to transmit on the frequency(ies) identified in this study. The proponent is required to obtain a formal frequency transmit license from the Federal Communications Commission (FCC) or National Telecommunications and Information Administration (NTIA), prior to on-air operations of these frequency(ies).

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (907) 271-5491. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANM-219-OE.

**Signature Control No: 320696890-326626532**

( DNE )

Gayle Ellsworth  
Technician

Attachment(s)  
Case Description  
Frequency Data  
Map(s)

cc: FCC

**Case Description for ASN 2017-ANM-219-OE**

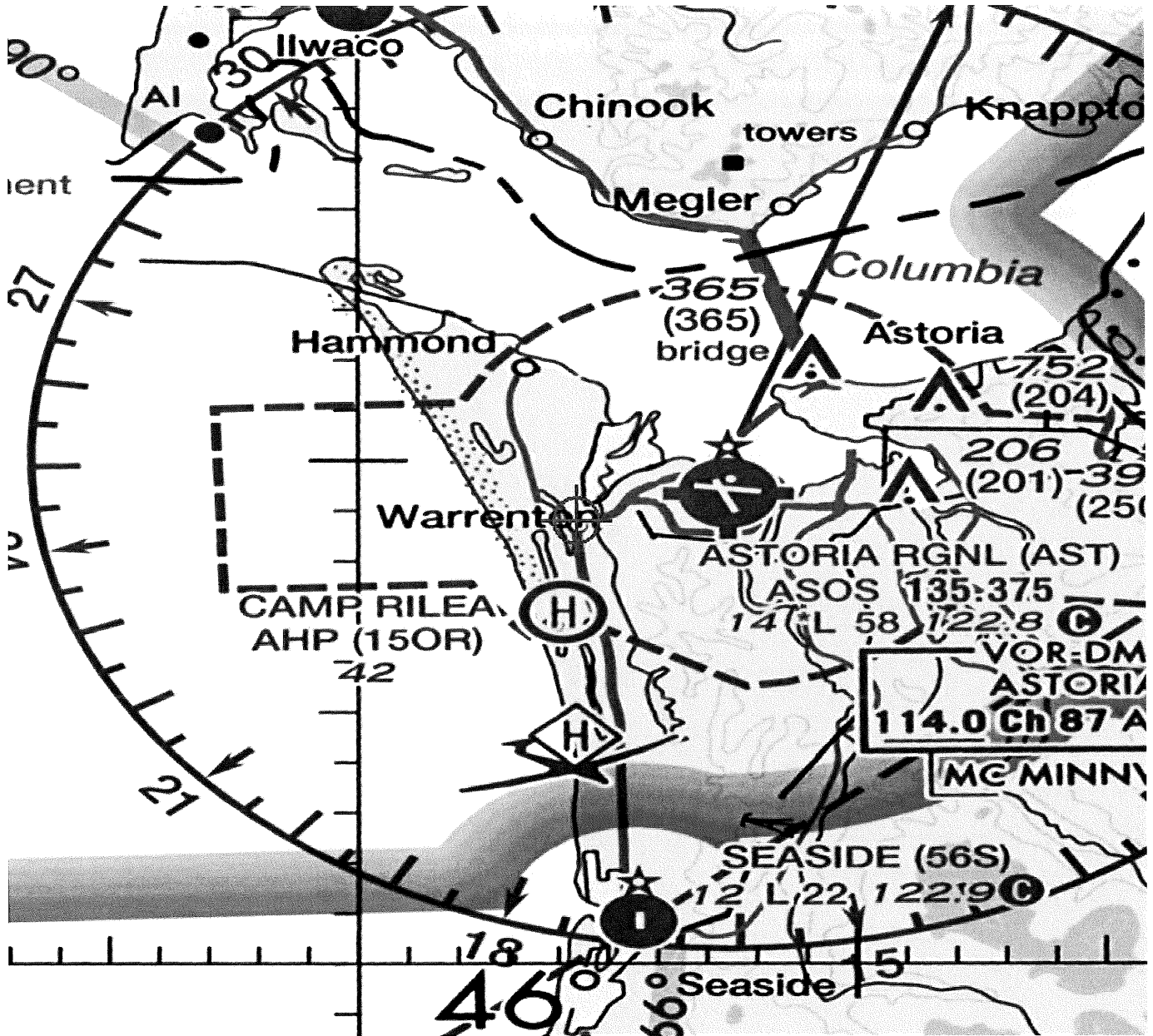
Proposed 104' AGL light pole. If marking/lighting is required, dual/med intensity is requested. For questions, contact Marie Ross @ 770-797-1052.

**Frequency Data for ASN 2017-ANM-219-OE**

<b>LOW FREQUENCY</b>	<b>HIGH FREQUENCY</b>	<b>FREQUENCY UNIT</b>	<b>ERP</b>	<b>ERP UNIT</b>
698	806	MHz	1000	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1850	1910	MHz	1640	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W



Sectional Map for ASN 2017-ANM-219-OE





# Oregon

Kate Brown, Governor

Oregon Department of Aviation

3040 25<sup>th</sup> Street SE

Salem, OR 97302-1125

Office: 503-378-4880

Fax: 503-373-1688

December 21, 2018

Konrad Hyle  
Senior Real Estate Specialist  
Black-Rock

**Subject: Oregon Department of Aviation comments regarding the construction of a telecommunications tower constructed to 104-FEET in height located in Warrenton, Oregon.**

**Aviation Reference: 2018-ODA-C-185-OE**

The Oregon Department of Aviation (ODA) has conducted an aeronautical study of this proposed construction / alteration and has determined that notice to the FAA is required. The structure does exceed FAR Part 77.9 (b) and Obstruction Standards of OAR 738-70-0100.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. Any changes to the original application will void this determination. Any future construction or alteration to the original application will require a separate notice from ODA.

This determination will expire 18 months after its effective date, regardless of whether the proposed construction or alteration has been started, or on the date the proposed construction or alteration is abandoned, whichever is earlier.

**Mitigation Recommendation:**

- We do not object with conditions to the construction described in this proposal. This determination does not constitute ODA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.
- Marking and lighting are required / recommended for aviation safety. We recommend it be installed and maintained in accordance with FAA Advisory Circular AC70/7460-1L
- The proposed obstruction should to be lower to a height that is no longer a hazard to the airport primary and horizontal surface FAA FAR 77
- The proposed obstruction should be relocate outside the airport primary and horizontal surface FAA FAR 77

Sincerely,

Jeff Caines, AICP – Land Use Planner





# Port of Astoria

Mr. Konrad Hyle  
Senior Real Estate Specialist, Black Rock  
22135 SW Cole Court  
Tualatin, OR 97062

December 13, 2018

RE: Verizon Cell Tower Application: 1700 S Main Ave, Warrenton, OR 97146.  
Township 8, Range 10, Section 30. Tax Lot (s) 2900

Dear Sir:

The Port of Astoria has reviewed the documents that you submitted for the location of the cell tower as well as the approvals of other stakeholder agencies.

Further, we have reviewed the matter with airport users, the United States Coast Guard, Columbia River Bar Pilots, and Life Flight Network. All three entities operate helicopters that regularly fly at lower altitudes than fixed-wing aircraft. None of those entities had any objection.

Accordingly, the Port of Astoria has no objection to the installation of the cell tower.

Sincerely,

Jim Knight, Executive Director  
Port of Astoria

REFERENCE COPY

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.



**Federal Communications Commission**  
**Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: VERIZON WIRELESS (VAW) LLC

ATTN: REGULATORY  
 VERIZON WIRELESS (VAW) LLC  
 5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING  
 ALPHARETTA, GA 30022

<b>Call Sign</b> KNKN411	<b>File Number</b>
<b>Radio Service</b> CL - Cellular	
<b>Market Numer</b> CMA606	<b>Channel Block</b> B
<b>Sub-Market Designator</b> 0	

FCC Registration Number (FRN): 0003800307

<b>Market Name</b> Oregon 1 - Clatsop
--

<b>Grant Date</b> 08-31-2010	<b>Effective Date</b> 11-04-2016	<b>Expiration Date</b> 10-01-2020	<b>Five Yr Build-Out Date</b>	<b>Print Date</b>
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**Site Information:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
2	45-07-48.4 N	123-11-16.4 W	259.7	29.6	
<b>Address:</b> 5915 (END) SOUTH EAST RICE LANE					
<b>City:</b> AMITY <b>County:</b> YAMHILL <b>State:</b> OR <b>Construction Deadline:</b>					

<b>Antenna:</b> 4 Azimuth (from true north)	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	245.200	241.400	224.800	181.700	220.000	235.700	209.700	180.500
<b>Transmitting ERP (watts)</b>	5.250	5.690	5.180	0.600	0.130	0.130	0.130	0.990
<b>Antenna:</b> 5 Azimuth (from true north)	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	245.200	241.400	224.800	181.700	220.000	235.700	209.700	180.500
<b>Transmitting ERP (watts)</b>	0.170	0.790	2.450	21.330	77.440	22.330	2.620	0.830
<b>Antenna:</b> 6 Azimuth (from true north)	<b>0</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>180</b>	<b>225</b>	<b>270</b>	<b>315</b>
<b>Antenna Height AAT (meters)</b>	245.200	241.400	224.800	181.700	220.000	235.700	209.700	180.500
<b>Transmitting ERP (watts)</b>	2.560	0.210	0.100	0.430	3.380	8.730	7.230	7.970

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKN411

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	46-15-44.2 N	123-53-12.8 W	335.9	41.5	

Address: Section 14, Township 9 N, Range 10 E

City: CHINOOK County: PACIFIC State: WA Construction Deadline:

Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	200.200	257.100	362.100	348.600	357.500	359.200	362.200	333.800
Transmitting ERP (watts)	0.580	0.320	0.580	2.070	41.310	150.000	41.310	2.070
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	200.200	257.100	362.100	348.600	357.500	359.200	362.200	333.800
Transmitting ERP (watts)	0.690	2.730	54.460	146.590	31.340	1.680	0.490	0.300

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
5	45-17-36.0 N	122-59-17.0 W	77.1	49.7	1033204

Address: 24245 NE DAYTON AVENUE

City: NEWBERG County: YAMHILL State: OR Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-30.100	-18.000	4.700	75.500	76.000	64.600	-10.600	20.600
Transmitting ERP (watts)	74.360	20.960	0.150	0.320	0.150	0.190	1.520	38.140
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-30.100	-18.000	4.700	75.500	76.000	64.600	-10.600	20.600
Transmitting ERP (watts)	0.160	6.040	57.720	63.290	6.190	0.320	0.150	0.150
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-30.100	-18.000	4.700	75.500	76.000	64.600	-10.600	20.600
Transmitting ERP (watts)	0.150	0.150	0.150	1.820	28.920	72.650	42.780	3.990

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	45-27-57.9 N	123-55-15.4 W	430.9	59.4	1018405

Address: (Tillamook) 1500 Netarts Hwy W (OR15963-A)

City: Tillamook County: TILLAMOOK State: OR Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	372.300	302.800	415.100	429.900	351.600	433.600	343.500	354.800
Transmitting ERP (watts)	757.190	629.810	53.610	1.990	1.990	1.990	1.990	72.310

Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKN411

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
6	45-27-57.9 N	123-55-15.4 W	430.9	59.4	1018405

Address: (Tillamook) 1500 Netarts Hwy W (OR15963-A)

City: Tillamook County: TILLAMOOK State: OR Construction Deadline:

Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	372.300	302.800	415.100	429.900	351.600	433.600	343.500	354.800
Transmitting ERP (watts)	4.550	79.100	791.000	72.140	2.680	1.580	1.580	1.580
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	372.300	302.800	415.100	429.900	351.600	433.600	343.500	354.800
Transmitting ERP (watts)	1.360	1.360	69.960	484.000	668.110	216.200	8.810	1.360

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
7	45-12-50.4 N	123-45-17.4 W	965.6	22.0	

Address: Mt. Hebo Peak, Siuslaw National Forest

City: HEBO County: YAMHILL State: OR Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	688.800	560.900	504.200	644.200	636.500	673.800	851.400	760.200
Transmitting ERP (watts)	190.810	64.220	1.470	1.510	0.960	1.730	13.200	144.460
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	688.800	560.900	504.200	644.200	636.500	673.800	851.400	760.200
Transmitting ERP (watts)	1.360	20.450	217.320	276.170	52.720	2.180	1.150	0.960
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	688.800	560.900	504.200	644.200	636.500	673.800	851.400	760.200
Transmitting ERP (watts)	1.650	0.960	0.960	1.750	53.790	104.120	98.020	10.350

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	45-43-44.4 N	123-15-09.4 W	440.4	24.9	

Address: 56100 NW SUNSET, HWY 26, MILE POST 41

City: Portland County: WASHINGTON State: OR Construction Deadline:

Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	181.500	125.000	120.700	357.900	210.300	71.500	-67.500	100.400
Transmitting ERP (watts)	0.960	16.590	30.730	16.830	26.750	24.220	2.300	0.200

Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKN411

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	45-43-44.4 N	123-15-09.4 W	440.4	24.9	

Address: 56100 NW SUNSET, HWY 26, MILE POST 41

City: Portland County: WASHINGTON State: OR Construction Deadline:

Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	181.500	125.000	120.700	357.900	210.300	71.500	-67.500	100.400
Transmitting ERP (watts)	53.570	10.090	0.740	0.320	4.400	33.820	88.430	93.300

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
13	46-02-24.0 N	123-12-34.0 W	566.9	48.7	

Address: 7.9 MILES S OF CLATSKANIE ON HWY 47 TO LOGGING ROAD

City: CLATSKANIE County: COLUMBIA State: OR Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	569.100	458.600	414.800	175.500	354.900	377.500	310.800	455.400
Transmitting ERP (watts)	1.910	3.890	24.570	44.700	43.690	43.690	24.010	3.980

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	46-06-39.4 N	123-10-50.4 W	233.8	28.9	

Address: 18751 HAVEN ACRES ROAD

City: CLATSKANIE County: COLUMBIA State: OR Construction Deadline:

Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	159.100	144.800	111.600	29.300	-14.300	18.200	149.000	44.400
Transmitting ERP (watts)	0.400	8.150	95.730	191.000	100.240	6.780	0.400	0.500
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	159.100	144.800	111.600	29.300	-14.300	18.200	149.000	44.400
Transmitting ERP (watts)	6.780	0.400	0.500	0.400	8.150	95.730	191.000	100.240

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	45-17-27.4 N	123-12-50.4 W	137.1	33.5	

Address: Carlton Site 9875 NW Meadow Lake RD

City: Carlton County: YAMHILL State: OR Construction Deadline:

Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	67.800	54.800	36.400	122.300	121.800	-15.400	-124.100	-20.100
Transmitting ERP (watts)	404.070	368.520	23.250	1.930	0.970	0.970	1.220	59.770

Licensee Name: VERIZON WIRELESS (VAW) LLC

Call Sign: KNKN411

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	45-17-27.4 N	123-12-50.4 W	137.1	33.5	

Address: Carlton Site 9875 NW Meadow Lake RD

City: Carlton County: YAMHILL State: OR Construction Deadline:

Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	67.800	54.800	36.400	122.300	121.800	-15.400	-124.100	-20.100
Transmitting ERP (watts)	1.220	59.770	404.070	368.520	23.250	1.930	0.970	0.970
Antenna: 4 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	67.800	54.800	36.400	122.300	121.800	-15.400	-124.100	-20.100
Transmitting ERP (watts)	13.660	0.990	2.170	22.680	176.040	452.490	394.100	108.540

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	45-55-32.3 N	123-41-33.4 W	760.5	28.9	1237126

Address: Humbug Mtn.

City: Seaside County: CLATSOP State: OR Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	521.500	304.600	534.000	548.000	519.600	484.800	554.000	543.100
Transmitting ERP (watts)	53.680	58.670	67.580	68.800	69.150	70.370	70.770	60.040

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
17	45-51-32.1 N	122-52-08.6 W	125.9	53.0	

Address: (Yankton site) 33961 Kappler Rd E

City: St. Helens County: COLUMBIA State: OR Construction Deadline: 01-20-2012

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	78.400	150.500	163.700	160.000	-114.500	-206.000	-13.200
Transmitting ERP (watts)	113.640	120.710	44.150	2.470	1.090	1.090	1.450	20.950
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	78.400	150.500	163.700	160.000	-114.500	-206.000	-13.200
Transmitting ERP (watts)	1.090	1.930	99.220	485.970	360.260	14.340	1.980	1.090
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.900	78.400	150.500	163.700	160.000	-114.500	-206.000	-13.200
Transmitting ERP (watts)	1.090	2.070	1.090	1.090	6.860	232.600	545.270	207.310

**Licensee Name:** VERIZON WIRELESS (VAW) LLC

**Call Sign:** KNKN411

**File Number:**

**Print Date:**

**Control Points:**

**Control Pt. No. 3**

**Address:** 500 West Dove Road

**City:** Southlake **County:** TARRANT **State:** TX **Telephone Number:** (800)264-6620

---

**Waivers/Conditions:**

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

# RF Coverage Plots and Justification

## FORT STEVENS

Prepared by Verizon Wireless

Dec 27, 2016





# Introduction

There are two main drivers that prompt the need for a new cell site. One is coverage and the other is capacity.

**Coverage** is the need to expand wireless service into an area that either has no service or bad service. The request for service often comes from customers or emergency personnel. Expansion of service could mean improving the signal levels in a large apartment complex or new residential community. It could also mean providing new service along a newly built highway.

**Capacity** is the need for more wireless resources. Cell sites have a limited amount of resources to handle voice calls, data connections, and data volume. When these limits are reached, user experience quickly degrades. This could mean customers may no longer be able to make/receive calls nor be able to browse the internet. It could also mean that webpages will be very slow to download.

**Capacity** is the amount of resources a cell site has to handle customer demand. We utilize sophisticated programs that use current usage trends to forecast future capacity needs. Since it takes an average of (1-3) years to complete a cell site project, we have to start the acquisition process several years in advance to ensure the new cell site is in place before the existing cell site hits capacity limits.

**Location, Location, Location.** A good capacity cell site needs to be in the center of the user population which ensures even traffic distribution around the cell. A typical cell site is configured in a pie shape, with each slice (aka. sector) holding 33% of the resources. Optimal performance is achieved when traffic is evenly distributed across the 3 sectors.

**verizon**<sup>v</sup>

# Coverage Area of Existing Site

The proposed site



The proposed site at a minimum antenna height of 104' AGL is to improve the coverage in the surrounding areas which are poor or non existence of RF coverage. It will improve user experiences with throughputs and voice quality. It will also offload traffics from WARRENTON which will be exhausted in 2017.

Clr: RSSRP (dBm)

Green	>= -75
Yellow	>= -85
Blue	>= -95

Poor RF coverage or non RF existence



# Coverage Area with Proposed Site

The proposed site

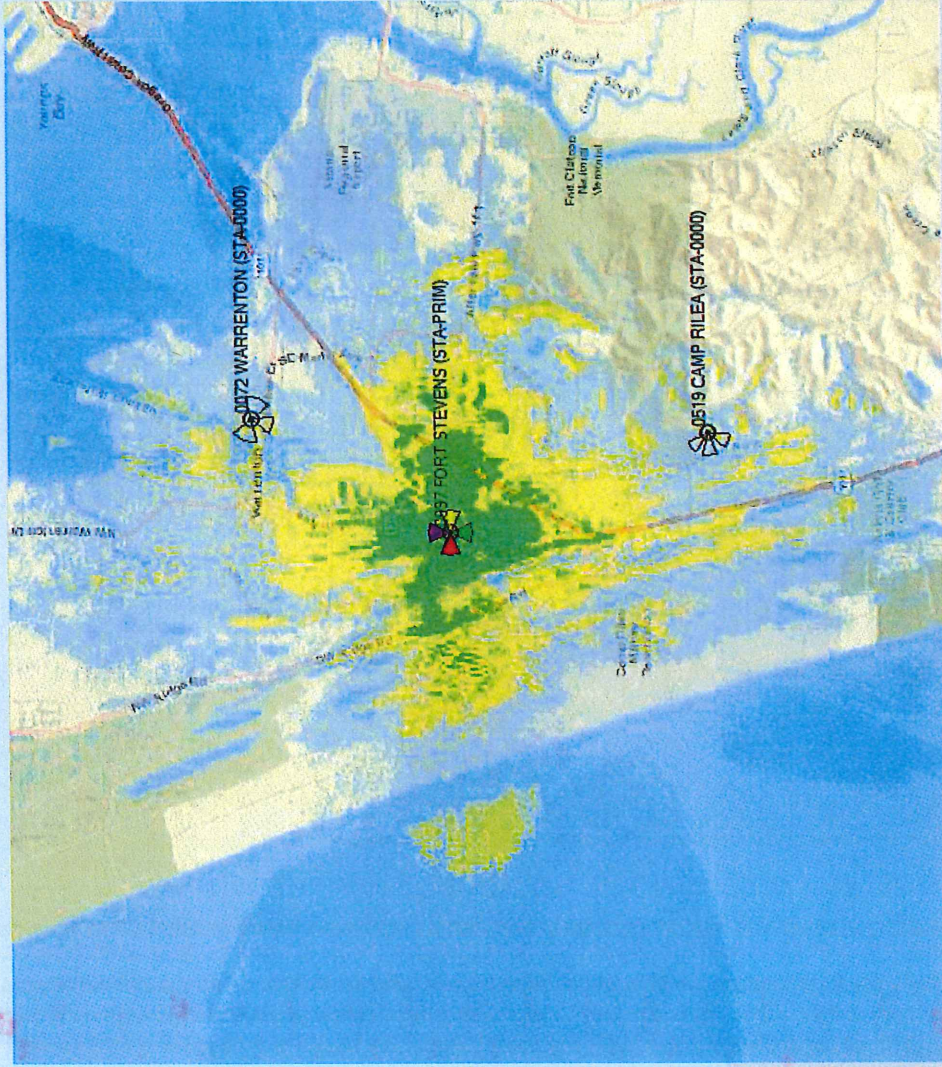


RF coverage improving



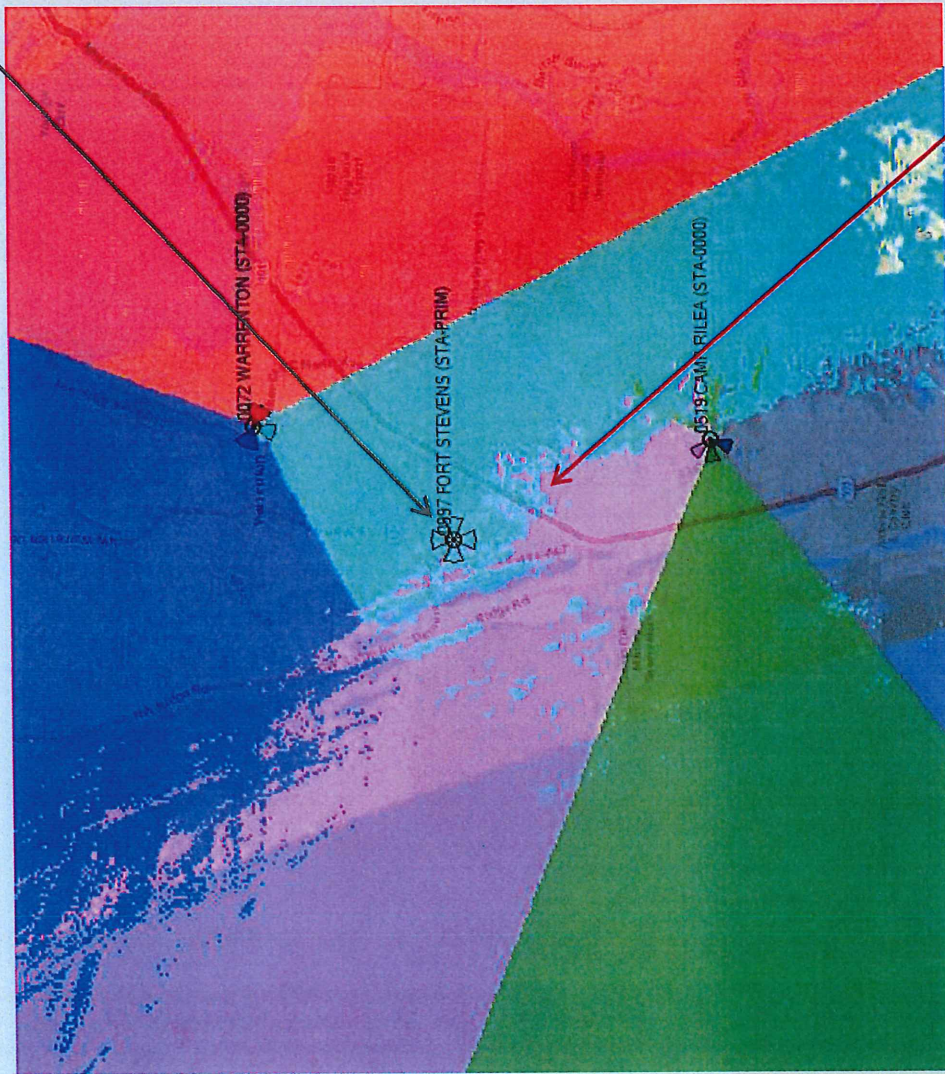
Clr: RSRP (dBm)	
Green	>= -75
Yellow	>= -85
Blue	>= -95

# Coverage Prediction of Proposed Site



# Current Areas Served vs Proposed Location

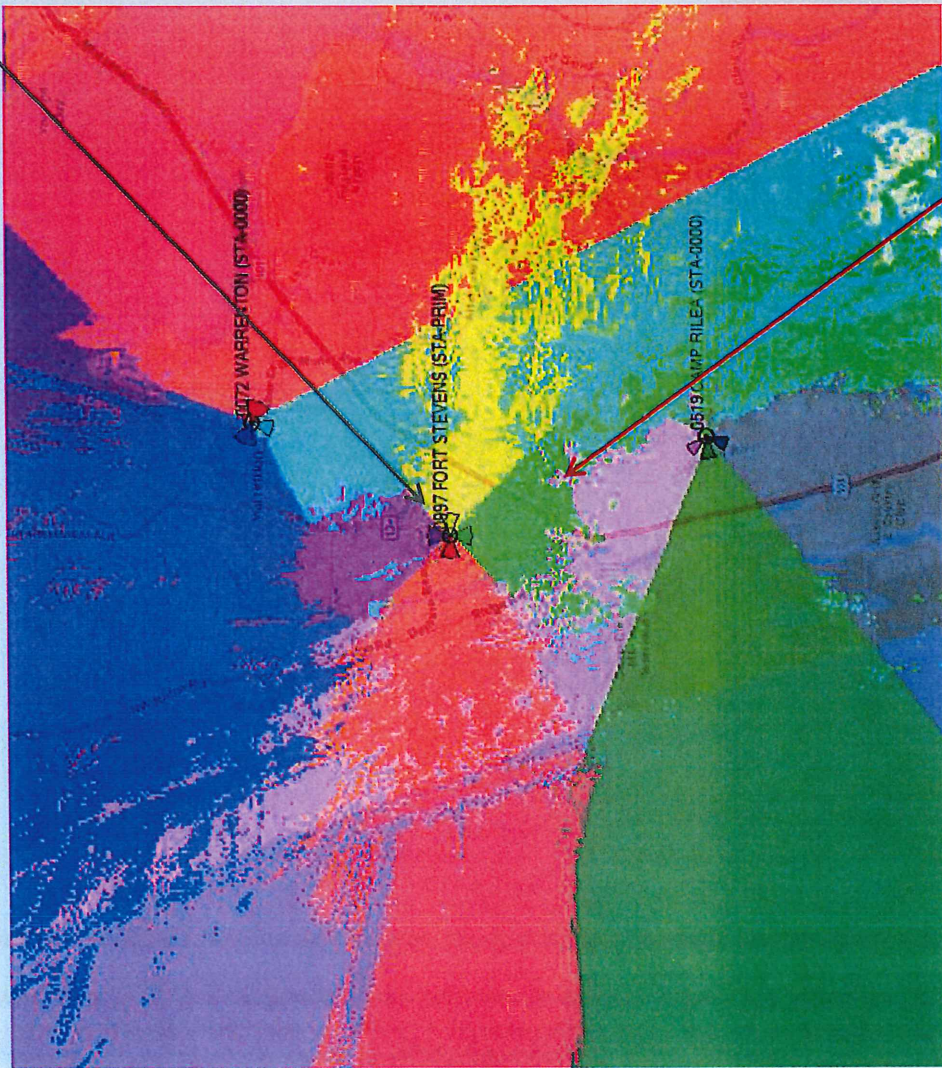
The proposed site



Traffic offloading

# Areas Served Plots of Proposed Site

The proposed site



Offloading traffics from  
WARRENTON & CAMP RILEA

Traffic offloading

## Conclusion

### Summary:

- The existing coverage in the proposed area is poor or even no existence of RF coverage.
- The new site at a minimum antenna height of 104' AGL is required to improve the coverage and offload from the exist sites exhausted.
- It will improve user experience in terms of voice and data services in the area.

### Details:

- Exact data about sites is proprietary and cannot be disclosed due to competitive reasons.
- The existing cell sites listed above are forecasted to be reaching capacity in the near future.
- The new cell site will provide additional resources/capacity to existing sites. It will take some users off of existing sites, which will alleviate the capacity constraints.
- This will improve customer experience (faster webpage downloads and fewer drop calls)
- Without the new site, at a minimum antenna height of 104' AGL, the existing sites in the area will soon reach the capacity which will negatively impact customer's ability to make/receive calls and browse the Internet.



Confidential and proprietary materials for authorized Verizon personnel and outside agencies only. Use, disclosure or distribution of this material is not permitted to any unauthorized persons or third parties except by written agreement.



BARACK OBAMA

Critical infrastructure protection is an essential element of a resilient and secure nation. Critical infrastructure are the assets, systems, and networks, whether physical or virtual, so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, public health or safety. From water systems to computer networks, power grids to cellular phone towers, risks to critical infrastructure can result from a complex combination of threats and hazards, including terrorist attacks, accidents, and natural disasters. During Critical Infrastructure Protection Month, we pledge to work together to shelter our communities from the harm of uncertain threats. My Administration is committed to ensuring our country's essential resources are safe and capable of recovering from disruptive incidents. The Department of Homeland Security is leading a coordinated national program to reduce risks and improve our national preparedness, timely response, and rapid recovery in the event of an attack, natural disaster, or other emergency. The Department, in collaboration with other Federal stakeholders, State, local, and tribal governments, and private sector partners, has developed the National Infrastructure Protection Plan (NIPP) to establish a framework for securing our resources and maintaining their resilience from all hazards during an event or emergency.

During Critical Infrastructure Protection Month, we rededicate ourselves to safeguarding and strengthening our Nation's infrastructure. Additionally, members of the public and private sectors should work with their appropriate State, regional, and local authorities to engage in critical infrastructure protection activities being coordinated across the country. Americans can learn more about the NIPP and its partnership framework by visiting: [www.dhs.gov/criticalinfrastructure](http://www.dhs.gov/criticalinfrastructure).

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim December 2009 as Critical Infrastructure Protection Month. I call upon the people of the United States to recognize the importance of partnering to protect our Nation's resources and to observe this month with appropriate events and training to enhance our national security and resilience.

IN WITNESS WHEREOF, I have hereunto set my hand this second day of December, in the year of our Lord two thousand nine, and of the Independence of the United States, in America the two hundred and thirty-fourth.

CRITICAL INFRASTRUCTURE PROTECTION  
MONTH, 2009  
BY THE PRESIDENT OF THE UNITED STATES OF AMERICA  
A PROCLAMATION





## CRITICAL INFRASTRUCTURE PROTECTION MONTH, 2009

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

### A PROCLAMATION

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BARACK OBAMA



**PROJECT NAME:** OR1 FORT STEVENS  
**PROJECT LOCATION:** 1700 S MAIN AVE  
 WARRENTON, OR 97146

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD CORPORATION. NEITHER MORRISON HERSHFIELD NOR THE ARCHITECT WILL BE PROVIDING CONSTRUCTION REVIEW OF THIS PROJECT.

FINAL ZONING		
-	-	-
1	12/18/18	JURISDICTIONAL COMMENTS
0	11/26/18	ISSUED FOR PERMIT
B	11/08/18	ISSUED FOR REVIEW
A	09/28/18	ISSUED FOR REVIEW

Client:

Implementation Team:

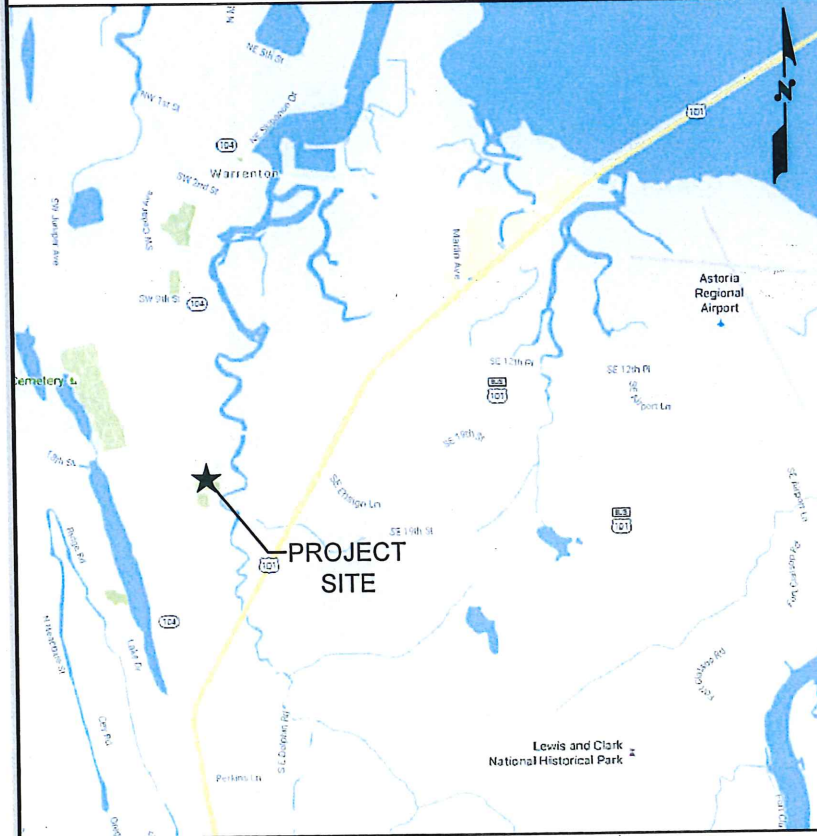
A&E Team:  
  
 MORRISON HERSHFIELD  
 5100 SW MACADAM AVE, SUITE 500  
 PORTLAND, OR 97239  
 Tel: 503.595.9128  
 www.morrisonhershfield.com

Project Info:  
**OR1 FORT STEVENS**  
 1700 S MAIN AVE  
 WARRENTON, OR 97146

Drawing Title:  
**COVER SHEET**

Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 1	Sheet No: T-1

VICINITY MAP



DRIVING DIRECTIONS

- (FROM PORTLAND, OR)
- TAKE I-205 NORTHBOUND
  - ENTERING WASHINGTON
  - KEEP STRAIGHT ONTO I-5 N
  - AT EXIT 36B, TAKE RAMP RIGHT FOR WA-432 WEST TOWARD LONGVIEW/ TALLEY WAY
  - BEAR LEFT ONTO WA-433 S/ OREGON WAY
  - ROAD NAME CHANGES TO LEWIS AND CLARK BRIDGE
  - ENTERING OREGON
  - TAKE RAMP
  - BEAR RIGHT ONTO US-30/ LOWER COLUMBIA RIVER HWY
  - KEEP STRAIGHT ONTO US-101/ W MARINE DR
  - AT ROUNDABOUT, TAKE 1ST EXIT
  - BEAR RIGHT ONTO US-101 ALT/ OR-104 SPUR/ ALTERNATE HWY 101/ FORT STEVENS HWY SPUR
  - ARRIVE AT US-101 ALT/ OR-104/ S MAIN AVE

PROJECT INFORMATION

JURISDICTION: CITY OF WARRENTON  
 ZONING CLASS: OSI  
 OCCUPANCY GROUP: UTILITY  
 CONSTRUCTION TYPE: RAW LAND MONOPOLE  
 TAX PARCEL ID: 30108102802900  
 PARCEL SIZE: 34.9 ACRES  
 LATITUDE: 46°08'47.62" N  
 46.146561°  
 LONGITUDE: 123°55'38.36" W  
 -123.927322°  
 GROUND ELEVATION: 19.8' AMSL  
 STRUCTURE HEIGHT: 52'-0" (TOP OF EXISTING WOOD POLE)  
 51'-1" (TOP OF EXISTING FIELD LIGHTS)  
 100'-0" (TOP OF PROPOSED MONOPOLE)  
 104'-0" (TOP OF PROPOSED ANTENNAS)  
 LEASE AREA: 880 S.F.

LEGAL DESCRIPTION

THE SOUTH HALF OF THE JEREMIAH G. TULLER DONATION LAND CLAIM NO. 43, TOWNSHIP 8 NORTH, RANGE 10 WEST, WILLAMETTE MERIDIAN, CITY OF WARRENTON, CLATSOP COUNTY OREGON.  
 SAVE AND EXCEPT THOSE PORTION LYING NORTH OF THE SOUTHERLY RIGHT OF WAY LINE OF HIGHWAY 104 SPUR (ALSO KNOWN AS FORT STEVENS HIGHWAY SPUR AND ALTERNATIVE COAST HIGHWAY) AND WEST OF THE EASTERLY RIGHT OF WAY LINE S. MAIN AVENUE.  
 ALSO SAVE AND EXCEPT ANY PORTION LYING WEST OF THE EAST LINE OF THE ABANDONED RIGHT OR WAY OF THE SPOKANE, PORTLAND AND SEATTLE RAILWAY COMPANY.  
 ALSO SAVE AND EXCEPT THAT PORTION DESCRIBED IN DEED FROM CLATSOP COUNTY, OREGON TO SCHOOL DISTRICT #30, WARRENTON, OREGON, BY DEED RECORDED SEPTEMBER 9, 1964, BOOK 275, PAGE 567, CLATSOP COUNTY DEED RECORDS.  
 FURTHER SAVE AND EXCEPT THAT PORTION CONVEYED BY WARRENTON SCHOOL DISTRICT #30 TO WARRENTON FIBER COMPANY BY DEED RECORDED MARCH 11, 2014, INSTRUMENT NO. 201401360, CLATSOP COUNTY RECORDS.

CONTACTS

**APPLICANT/CLIENT AND IMPLEMENTATION CONTACT:**  
 JOE AHSING  
 VERIZON WIRELESS (VAW) LLC  
 (d/b/a VERIZON WIRELESS)  
 5430 NE 122ND AVE  
 PORTLAND, OR 97230  
 PHONE: (503) 408-3434  
 joseph.ahsing@verizonwireless.com

**PROPERTY OWNER CONTACT:**  
 MIKE MOHA  
 WARRENTON SCHOOL DISTRICT #30  
 PHONE: (503) 861-2281

**SURVEYOR:**  
 DUNCANSON COMPANY, INC.  
 145 SW 155TH ST, SUITE 102  
 SEATTLE, WA 98166  
 PHONE: (206) 244-4141

**APPLICANT CONTACT:**  
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 ROSEVILLE, CA 95678  
 PHONE: (916) 213-8407  
 jim@blk-rock.com

**ZONING PERMIT CONTACT:**  
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 BLACKROCK CONSULTING LLC  
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 konrad@blk-rock.com

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 MORRISON HERSHFIELD CORP  
 5100 SW MACADAM AVE, SUITE 500  
 PORTLAND, OR 97239  
 PHONE: (503) 595-9128  
 rbrowning@morrisonhershfield.com

**ENGINEER OF RECORD:**  
 G. LANCE COOKE  
 MORRISON HERSHFIELD CORP  
 PHONE: (503) 924-2515  
 lcooke@morrisonhershfield.com

SCOPE OF WORK

VERIZON WIRELESS PROPOSES TO INSTALL AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF THE INSTALLATION OF (8) NEW PANEL ANTENNAS WITH A 104'-0" TIP HEIGHT, (8) RRU'S, (4) HYBRID CABLES AND (2) RFS SPLITTER/SURGE SUPPRESSORS ON A PROPOSED 4-SIDED PLATFORM MOUNT ON A NEW 100' MONOPOLE. ALSO PROPOSED IS THE INSTALLATION (2) RACK MOUNTED RFS SURGE SUPPRESSORS AND A MTU ONSITE ENERGY 30KW DIESEL GENERATOR SITTING ON A NEW COVERED 11'-6"x18'-0" CONCRETE EQUIPMENT PAD WITHIN A 44'-0"x20'-0" LEASE AREA.

LIST OF DRAWINGS

SHEET	DESCRIPTION
T-1	COVER SHEET
T-2	GENERAL NOTES AND SYMBOLS
SV1	SITE SURVEY
A-1	SITE PLAN
A-1.1	EXISTING ENLARGED SITE PLAN
A-1.2	PROPOSED COMPOUND PLAN
A-2	ELEVATIONS
A-2.1	ELEVATIONS
RF-1	PROPOSED ANTENNA CONFIGURATION
30KW	GENERATOR SPECIFICATIONS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT CONDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL COVERING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:  
 OREGON STATE AND LOCAL BUILDING CODES WITH THE FOLLOWING REFERENCE CODE:  
 2014 OREGON STRUCTURAL SPECIALTY CODE  
 2017 OREGON ELECTRICAL SPECIALTY CODE  
 2014 OREGON MECHANICAL SPECIALTY CODE  
 2012 NFPA 101 LIFE SAFETY CODE

APPROVALS BY: CITY OF WARRENTON

REPRESENTATIVE	SIGNATURE	DATE
SITE OWNER		
RF ENGINEER		

## GENERAL NOTES

- WORK SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. ALL NECESSARY LICENSES, CERTIFICATES, ETC., REQUIRED BY AUTHORITY HAVING JURISDICTION SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR.
- MORRISON HERSHFIELD CORPORATION HAS NOT CONDUCTED, NOR DOES IT INTEND TO CONDUCT ANY INVESTIGATION AS TO THE PRESENCE OF HAZARDOUS MATERIAL, INCLUDING, BUT NOT LIMITED TO, ASBESTOS WITHIN THE CONFINES OF THIS PROJECT. MORRISON HERSHFIELD CORPORATION DOES NOT ACCEPT RESPONSIBILITY FOR THE IDENTIFICATION, THE REMOVAL, OR ANY EFFECTS FROM THE PRESENCE OF THESE MATERIALS. IF EVIDENCE OF HAZARDOUS MATERIALS IS FOUND, WORK IS TO BE SUSPENDED AND THE OWNER NOTIFIED. THE CONTRACTOR IS NOT TO PROCEED WITH FURTHER WORK UNTIL INSTRUCTED BY THE OWNER IN WRITING.
- ALL MATERIAL FURNISHED UNDER THIS CONTRACT SHALL BE NEW, UNLESS OTHERWISE NOTED. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS EXPENSE ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIALS OR WORKMANSHIP WITHIN SAID PERIOD OF TIME OR FOR ONE YEAR AFTER THE FINAL ACCEPTANCE OF THE ENTIRE PROJECT, WHICHEVER IS GREATER.
- THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS AND UTILITIES AT THE JOB SITE BEFORE WORK IS STARTED. NO CLAIMS FOR EXTRA COMPENSATION FOR WORK WHICH COULD HAVE BEEN FORESEEN BY AN INSPECTION, WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT, WILL BE ACCEPTED OR PAID.
- THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND CONDITIONS AT THE JOB SITE WHICH COULD AFFECT THE WORK UNDER THIS CONTRACT. ALL MANUFACTURERS RECOMMENDED SPECIFICATIONS, EXCEPT THOSE SPECIFICATIONS HEREIN, WHERE MOST STRINGENT SHALL BE COMPLIED WITH.
- THE CONTRACTOR SHALL VERIFY AND COORDINATE SIZE AND LOCATION OF ALL OPENINGS FOR STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, OR ARCHITECTURAL WORK.
- THE CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST BETWEEN THE LOCATIONS OF ANY AND ALL MECHANICAL, ELECTRICAL, PLUMBING, OR STRUCTURAL ELEMENTS, AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE ARE MET. NOTIFY THE CONSULTANT OF ANY CONFLICTS. THE CONSULTANT HAS THE RIGHT TO MAKE MINOR MODIFICATIONS IN THE DESIGN OF THE CONTRACT WITHOUT THE CONTRACTOR GETTING ADDITIONAL COMPENSATION.
- DO NOT SCALE THE DRAWINGS. DIMENSIONS ARE EITHER TO THE FACE OF FINISHED ELEMENTS OR TO THE CENTER LINE OF ELEMENTS, UNLESS NOTED OTHERWISE. CRITICAL DIMENSIONS SHALL BE VERIFIED AND NOTIFY THE CONSULTANT OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEAN UP OF ALL TRADES AND REMOVE ALL DEBRIS FROM THE CONSTRUCTION SITE. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE BUILDING, SITE, AND ANY OTHER SURROUNDING AREAS TO A BETTER THAN EXISTING CONDITION.
- THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAWAY, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES.
- THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO BETTER THAN NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE CONSULTANT SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
- WHERE ONE DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS, EVEN THOUGH NOT SPECIFICALLY MARKED ON THE DRAWINGS OR REFERRED TO IN THE SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
- THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
- VERIFY ALL EXISTING DIMENSIONS PRIOR TO PERFORMING WORK.
- VERIFY LOCATION OF ALL BURIED UTILITIES PRIOR TO ANY EXCAVATION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR COMMERCIAL POWER IMMEDIATELY UPON AWARD OF CONTRACT. THE GENERAL CONTRACTOR IS REQUIRED TO KEEP ALL DOCUMENTATION RECEIVED FROM THE POWER COMPANY, ACKNOWLEDGING APPLICATION FOR POWER, WRITTEN AND VERBAL DISCUSSIONS WITH THE POWER COMPANY, ETC.
- THE GENERAL CONTRACTOR SHALL OBTAIN WRITTEN CONFIRMATION OF THE EXPECTED DATE OF COMPLETION OF THE POWER CONNECTION FROM THE POWER COMPANY.
- IF THE POWER COMPANY IS UNABLE TO PROVIDE THE POWER CONNECTION BY OWNER'S REQUIRED DATE, THE GENERAL CONTRACTOR SHALL PROVIDE AND MAINTAIN A TEMPORARY GENERATOR UNTIL THE POWER COMPANY CONNECTION IS COMPLETED. COSTS ASSOCIATED WITH THE TEMPORARY GENERATOR TO BE APPROVED BY THE OWNER.
- IF THE GENERAL CONTRACTOR FAILS TO TAKE NECESSARY MEASURES AS DESCRIBED IN NOTES 18, 19 AND 20 ABOVE, THE GENERAL CONTRACTOR SHALL PROVIDE A TEMPORARY GENERATOR AT NO COST TO THE OWNER.
- PLANS PART OF THIS SET ARE COMPLEMENTARY. INFORMATION IS NOT LIMITED TO ONE PLAN. DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT, THEY ARE NOT TO BE USED BY THE OWNER ON OTHER PROJECTS OR EXTENSION TO THIS PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ARCHITECT. THESE PLANS WERE PREPARED TO BE SUBMITTED TO GOVERNMENTAL BUILDING AUTHORITIES FOR REVIEW FOR COMPLIANCE WITH APPLICABLE CODES AND IT IS THE SOLE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO BUILD ACCORDING TO APPLICABLE BUILDING CODES.
- IF CONTRACTOR OR SUB-CONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUB-CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE ARCHITECT WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
- IN EVERY EVENT, THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL BE INTERPRETED TO BE A MINIMUM ACCEPTABLE MEANS OF CONSTRUCTION BUT THIS SHALL NOT RELIEVE THE CONTRACTOR, SUB-CONTRACTOR, AND/OR SUPPLIER/MANUFACTURER FROM PROVIDING A COMPLETE AND CORRECT JOB WHEN ADDITIONAL ITEMS ARE REQUIRED TO THE MINIMUM SPECIFICATION. IF ANY ITEMS NEED TO EXCEED THESE MINIMUM SPECIFICATIONS TO PROVIDE A COMPLETE, ADEQUATE AND SAFE WORKING CONDITION, THEN IT SHALL BE THE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE DRAWINGS. FOR EXAMPLE, IF AN ITEM AND/OR PIECE OF EQUIPMENT REQUIRES A LARGER WIRE SIZE (I.E. ELECTRICAL WIRE), STRONGER OR LARGER PIPING, INCREASED QUANTITY (I.E. STRUCTURAL ELEMENTS), REDUCED SPACING, AND/OR INCREASED LENGTH (I.E. BOLT LENGTHS, BAR LENGTHS) THEN IT SHALL BE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE BID/PROPOSAL. THESE DOCUMENTS ARE MEANT AS A GUIDE AND ALL ITEMS REASONABLY INFERRED SHALL BE DEEMED TO BE INCLUDED.
- THESE CONTRACT DOCUMENTS AND SPECIFICATIONS SHALL NOT BE CONSTRUED TO CREATE A CONTRACTUAL RELATIONSHIP OF ANY KIND BETWEEN THE ARCHITECT AND THE CONTRACTOR.
- CONTRACTOR & ANY SUBCONTRACTORS TO MAINTAIN KEEPING THE ROAD ACCESS GATE LOCKED AT ALL TIMES.
- IN RAWLAND CONDITIONS, TOWER FOUNDATION STRUCTURAL STEEL TO BE GROUNDED PRIOR TO CONCRETE POUR. TOWER FOUNDATION STRUCTURAL STEEL TO BE CONNECTED TO PERMANENT GROUND ROD PRIOR TO TOWER ERECTION. TOWER GROUND MUST BE MAINTAINED AT ALL TIMES.

## LINE/ANTENNA NOTES

- ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLES SHALL CONFORM TO ASTM A307 OR ASTM A36. ALL STRUCTURAL FASTENERS FOR STRUCTURAL STEEL FRAMING SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8" MIN. DIA. BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED FROM THE PLANE. ALL EXPOSED FASTENERS, NUTS, AND WASHERS SHALL BE GALVANIZED OTHERWISE NOTED. CONCRETE EXPANSION ANCHORS SHALL BE HILTI KWIK BOLTS UNLESS OTHER WISED NOTED. ALL ANCHORS INTO CONCRETE SHALL BE STAINLESS STEEL.
- THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY NORTH AND NOTIFY CONSULTANT OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
- PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
- THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTIONS.
- MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS TO BE A MIN. OF 8" RADIUS
- FOR GROUNDING TO BUILDING FRAME & HATCH PLATE GROUND BARS. USE A TWO-BOLT HOLE NEMA DRILLED CONNECTOR SUCH AS T&B 32007 OR APPROVED EQUAL
- FOR ALL EXTERNAL GROUND CONNECTIONS, CLAMPS & CADWELDS, APPLY A LIBERAL PROTECTIVE COATING OR AN ANTI-OXIDE COMPOUND SUCH AS "NO-OXIDE A" BY DEARBORN CHEMICAL COMPANY.
- REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY THERMO-WELDING. USE ERICO T-319 GALVANIZING BAR/COLD GALVANIZING PAINT.
- SEAL ALL CONDUIT PENETRATIONS INTO MODULAR BUILDING WITH A SILICONE SEALANT AND ALL CONDUIT OPENINGS.
- ALL COAXIAL CABLE WILL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE AT DISTANCES NOT TO EXCEED 3' OR THE CABLE MANUFACTURERS SPECIFICATIONS WHICHEVER IS LESS, WITH HARDWARE SPECIFIED IN THE COAXIAL CABLE ROUTING DETAILS OF THE SUPPLIED STRUCTURAL REPORT.
- THE COAXIAL ANTENNA CABLE INSTALLER SHALL BE RESPONSIBLE FOR PERFORMING AND SUPPLYING THREE (3) TYPEWRITTEN SWEEP TESTS (ANTENNA RETURN LOSS TEST). THIS TEST SHALL BE PERFORMED TO THE SPECIFICATIONS AND PARAMETERS OUTLINED BY THE VERIZON WIRELESS RADIO FREQUENCY THRU ENGINEER. THIS TEST SHALL BE PERFORMED PRIOR TO FINAL ACCEPTANCE OF THE SITE. (1) COPY TO BE PLACED IN SHELTER.
- THE COAXIAL ANTENNA CABLE INSTALLER SHALL BE RESPONSIBLE FOR PERFORMING AND SUPPLYING VERIZON WIRELESS WITH THREE TYPE WRITTEN TIME DOMAIN REFLECTOMETER TESTS TO VERIFY CABLE LENGTH AND TO CHECK FOR WATER DAMAGE.
- VAPOR WRAP WILL BE USED TO SEAL ALL CONNECTIONS.
- ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE WILL BE 1/2" DIA, AND SHALL NOT EXCEED 6'-0"
- ALL MAIN TRANSMISSION CABLE WILL BE TERMINATED AT A VERIZON WIRELESS POLYPHASE PROTECTOR LOCATED WITHIN 1'-0" OF THE EQUIPMENT SHELTER.
- ANTENNA CABLE LENGTHS HAVE BEEN DETERMINED BASED ON THESE PLANS. CABLE LENGTHS LISTED ARE APPROXIMATED AND ARE NOT INTENDED TO BE USED FOR FABRICATION DUE TO FIELD CONDITIONS ACTUAL CABLE LENGTHS REQUIRE. CONTRACTOR MUST FIELD VERIFY ANTENNA CABLE LENGTHS PRIOR TO ORDER.
- ALL MAIN CABLES WILL BE COLOR CODED AT FOUR LOCATIONS: A) AT ANTENNA PRIOR TO JUMPER, B) AT THE BOTTOM OF THE TOWER, C) EXTERIOR PART OF THE WAVE GUIDE ENTRY PORT (AT THE SHELTER/CABINET WALL), D) INTERIOR OF THE SHELTER/CABINET.
- ALL MAIN CABLES WILL BE GROUNDED AT: A) AT THE ANTENNA MOUNTING PIPE, B) MIDDLE OF THE CABLE RUN IF OVER 200', C) PRIOR TO ENTERING EQUIPMENT SHELTER/CABINET (WITHIN 1' OF ENTRY).
- PROVIDE AT LEAST 6" OF SLACK IN THE MAIN COAXIAL CABLES AT THE TOWER TOP TO PROVIDE FOR FUTURE CONNECTOR REPLACEMENT.
- PROVIDE A CABLE DRIP LOOP AT THE BOTTOM OF THE TOWER BELOW THE TOWER BOTTOM GROUND CONNECTIONS AND AS THE CABLE TRANSITIONS TO THE SHELTER/CABINET.
- ANTENNAS AND COAX TO BE PROVIDED BY VERIZON WIRELESS. CONTRACTOR TO COORDINATE DELIVERY.

## PROJECT INFORMATION

- THIS IS AN UNMANNED FACILITY AND RESTRICTED ACCESS EQUIPMENT AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
- VERIZON WIRELESS CERTIFIES THAT THIS TELEPHONE EQUIPMENT FACILITY WILL BE SERVICED ONLY BY VERIZON WIRELESS EMPLOYEE SERVICE PERSONNEL FOR REPAIR PURPOSES ONLY. THIS FACILITY IS UNOCCUPIED AND NOT DESIGNED FOR HUMAN OCCUPANCY THUS IT IS NOT OPEN TO THE PUBLIC.
- THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
- NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
- NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
- NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.
- VERIZON WIRELESS MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

## ABBREVIATIONS

AGL	ABOVE GROUND LEVEL	GA	GAUGE	PLYWD	PLYWOOD
A/C	AIR CONDITIONING	GALV	GALVANIZED	PT	PRESSURE TREATED
APPROX	APPROXIMATELY	GC	GENERAL CONTRACTOR	PROJ	PROJECT
AZ	AZIMUTH	GRND	GROUND	PROP	PROPERTY
BLDG	BUILDING	GYP BD	GYPSPUM WALL BOARD	(P)	PROPOSED
BLK	BLOCKING	HT	HEIGHT	QTY	QUANTITY
CLG	CEILING	HVAC	HEATING VENTILATION AIR CONDITIONING	REQ	REQUIRED
CLR	CLEAR	HR	HORIZONTAL HOUR	RM	ROOM
CONC	CONCRETE	IN	INCH	RO	ROUGH OPENING
CONST	CONSTRUCTION	INFO	INFORMATION	ROW	RIGHT OF WAY
CONT	CONTINUOUS	ID	INSIDE DIAMETER	SHT	SHEET
DET	DETAIL	INSUL	INSULATION	SIM	SIMILAR
DIA	DIAMETER	INT	INTERIOR	SPEC	SPECIFICATION
DIAG	DIAGONAL	IBC	INTERNATIONAL BUILDING CODE	SF	SQUARE FOOT
DIM	DIMENSION	LBS	POUNDS	STL	STEEL
DBL	DOUBLE	MGR	MANAGER	STRUCT	STRUCTURAL
DN	DOWN	MFR	MANUFACTURER	STD	STUD
DWG	DRAWING	MAX	MAXIMUM	SUSP	SUSPENDED
EA	EACH	MECH	MECHANICAL	THRU	THROUGH
ELEC	ELECTRICAL	MTL	METAL	TNG	TINNED
ELEV	ELEVATION	MIN	MINIMUM	TYP	TYPICAL
EQ	EQUAL	MISC	MISCELLANEOUS	UG	UNDERGROUND
EQUIP	EQUIPMENT	N/A	NOT APPLICABLE	UNO	UNLESS NOTED OTHERWISE
(E)	EXISTING	NTS	NOT TO SCALE	VIF	VERIFY IN FIELD
EXT	EXTERIOR	OC	ON CENTER	VERT	VERTICAL
FIN	FINISH	OD	OUTSIDE DIAMETER	WP	WATER PROOF
FLR	FLOOR			W/	WITH
FLUOR	FLUORESCENT			W/O	WITHOUT
FT	FOOT				

— UGP — UG POWER CONDUIT — UGT — UG TELCO CONDUIT

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD CORPORATION. NEITHER MORRISON HERSHFIELD NOR THE ARCHITECT WILL BE PROVIDING CONSTRUCTION REVIEW OF THIS PROJECT.

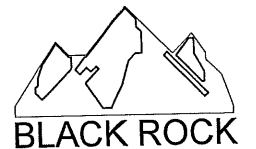
### FINAL ZONING

-	-	-
-	-	-
1	12/18/18	JURISDICTIONAL COMMENTS
0	11/26/18	ISSUED FOR PERMIT
B	11/08/18	ISSUED FOR REVIEW
A	09/28/18	ISSUED FOR REVIEW
No.	Date	Revision

Client:



Implementation Team:



A&E Team:



Project Info:

**OR1**  
**FORT STEVENS**  
1700 S MAIN AVE  
WARRENTON, OR 97146

Drawing Title:

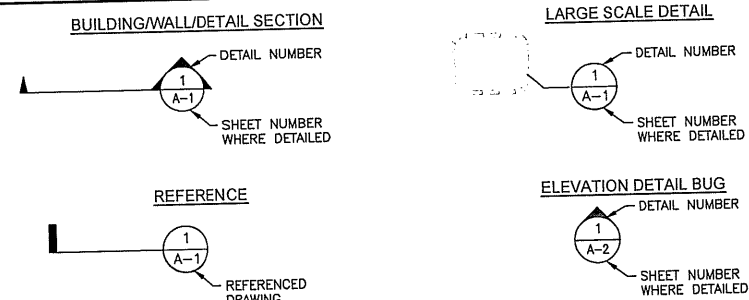
## GENERAL NOTES AND SYMBOLS

Project Number:	190001800	Start Date:	09/27/18
Drafter:	LW	Designer:	RB
Project Manager:	LJB	Professional of Record:	LC
Revision No:	0	Sheet No:	T-2

## IMPORTANT NOTICE

THE EXISTING CONDITIONS REPRESENTED HEREIN ARE BASED ON VISUAL OBSERVATIONS AND INFORMATION PROVIDED BY OTHERS. MORRISON HERSHFIELD CORPORATION CANNOT GUARANTEE THE CORRECTNESS NOR COMPLETENESS OF THE EXISTING CONDITIONS SHOWN AND ASSUMES NO RESPONSIBILITY THEREOF. CONTRACTOR AND HIS SUB-CONTRACTORS SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AS REQUIRED FOR PROPER EXECUTION OF PROJECT. REPORT ANY CONFLICTS OR DISCREPANCIES TO THE CONSULTANT PRIOR TO CONSTRUCTION.

## LEGEND



**LEGAL DESCRIPTION**

THE SOUTH HALF OF THE JEREMIAH G. TULLER DONATION LAND CLAIM NO. 43, TOWNSHIP 8 NORTH, RANGE 10 WEST, WILLAMETTE MERIDIAN, CITY OF WARRENTON, CLATSOP COUNTY, OREGON.

SAVE AND EXCEPT THOSE PORTIONS LYING NORTH OF THE SOUTHERLY RIGHT OF WAY LINE OF HIGHWAY 104 SPUR (ALSO KNOWN AS FORT STEVENS HIGHWAY SPUR AND ALTERNATIVE COAST HIGHWAY) AND WEST OF THE EASTERLY RIGHT OF WAY LINE OF S. MAIN AVENUE.

ALSO SAVE AND EXCEPT ANY PORTION LYING WEST OF THE EAST LINE OF THE ABANDONED RIGHT OF WAY OF THE SPOKANE, PORTLAND AND SEATTLE RAILWAY COMPANY.

ALSO SAVE AND EXCEPT THAT PORTION DESCRIBED IN DEED FROM CLATSOP COUNTY, OREGON, TO SCHOOL DISTRICT #30, WARRENTON, OREGON, BY DEED RECORDED SEPTEMBER 9, 1964, BOOK 275, PAGE 567, CLATSOP COUNTY DEED RECORDS.

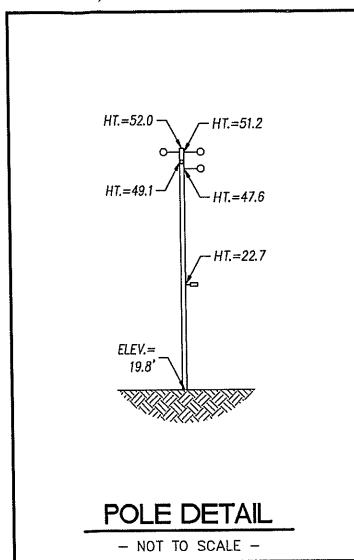
FURTHER SAVE AND EXCEPT THAT PORTION CONVEYED BY WARRENTON SCHOOL DISTRICT #30 TO WARRENTON FIBER COMPANY BY DEED RECORDED MARCH 11, 2014, INSTRUMENT NO. 201401360, CLATSOP COUNTY RECORDS.

**EASEMENTS**

△ CORRESPONDS WITH ITEM NUMBER IN 'SCHEDULE B' OF TITLE REPORT.

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN. ALL OTHER EXCEPTIONS NOT LISTED BELOW ARE CONSIDERED NON-SURVEY AND NOT INCLUDED.

- △14 EASEMENT FOR LEVEES PER BOOK 142, PAGE 652, RECORDS OF CLATSOP COUNTY - DOCUMENT CONTAINS INSUFFICIENT DATA TO PLACE HEREON, NOT SHOWN.
- △15 EASEMENT FOR LEVEES PER BOOK 142, PAGE 657, RECORDS OF CLATSOP COUNTY - DOCUMENT CONTAINS INSUFFICIENT DATA TO PLACE HEREON, NOT SHOWN.
- △16 ELECTRIC EASEMENT PER RECORDING NO. 200407025, RECORDS OF CLATSOP COUNTY - DOCUMENT CONTAINS INSUFFICIENT DATA TO PLACE HEREON, NOT SHOWN.



**LATITUDE/LONGITUDE POSITION**

COORDINATE DATA AT CENTER OF SUBJECT POLE:  
 NAD 83  
 LAT - 46°08'47.62" N NAVD 88  
 LONG - 123°55'38.36" W ELEV. = 19.8 FEET



BENCHMARK IS BASED ON WSRN PUGET SOUND REFERENCE NETWORK.

ELEVATION DERIVED USING GPS. ACCURACY MEETS OR EXCEEDS 1A STANDARDS AS DEFINED ON THE FAA ASAC INFORMATION SHEET 91:003.

**NOTES**

- 1) TITLE REPORT ISSUED BY TICOR TITLE, ORDER NO. 360416022676, DATED OCTOBER 7, 2016.
- 2) FIELD WORK CONDUCTED IN OCTOBER, 2016.
- 3) BASIS OF BEARING: OREGON COORDINATE SYSTEM, NORTH ZONE (NAD83).
- 4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
- 5) FEMA DESIGNATION: ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PANEL 218 OF 800, FIRM MAP NUMBER 41007C0218E, EFFECTIVE DATE SEPTEMBER 17, 2010.

**LEGEND**

- SUBJECT BOUNDARY LINE
- - - RIGHT-OF-WAY CENTERLINE
- - - RIGHT-OF-WAY LINE
- - - ADJACENT BOUNDARY LINE
- - - SECTIONAL BREAKDOWN LINE
- OP OVERHEAD POWER LINE
- UP BURIED POWER LINE
- G BURIED GAS LINE
- OT OVERHEAD TELEPHONE LINE
- UT BURIED TELEPHONE LINE
- V BURIED WATER LINE
- SS BURIED SANITARY SEWER
- SD BURIED STORM DRAIN
- - - DITCH LINE/FLOW LINE
- ~ ~ ~ ROCK RETAINING WALL
- ~ ~ ~ VEGETATION LINE
- - - CHAIN LINK FENCE
- - - WOOD FENCE
- - - BARBED WIRE/WIRE FENCE
- △ TRANSFORMER
- ⊗ LIGHT STANDARD
- P POWER VAULT
- ⊠ UTILITY BOX
- ⊠ UTILITY POLE
- ← POLE GUY WIRE
- ⊠ GAS VALVE
- ⊠ GAS METER
- T TELEPHONE VAULT
- ⊠ TEL. MANHOLE
- ⊠ TELEPHONE RISER
- ⊗ FIRE HYDRANT
- ⊠ GATE VALVE
- ⊠ WATER METER
- ⊠ FIRE STAND PIPE
- ⊠ IRRIGATION CONTROL
- ⊠ CATCH BASIN, TYPE I
- ⊠ CATCH BASIN, TYPE II
- ⊠ SIGN
- ⊠ BOLLARD
- ⊠ MAIL BOX
- ⊠ SPOT ELEVATION

**NOTE:**

- 1) ALL ELEVATIONS SHOWN ARE ABOVE MEAN SEA LEVEL (AMSL) AND ARE REFERENCED TO THE NAVD88 DATUM.
- 2) ALL TOWER, TREE AND APPURTENANCE HEIGHTS ARE ABOVE GROUND LEVEL (AGL) AND ARE ACCURATE TO ± 0.5 FEET OR ± 1% OF TOTAL HEIGHT, WHICHEVER IS GREATER.

**TREE LEGEND**

- DECIDUOUS TREE
  - AL12 ALDER
  - MP TRUNK DIAMETER (IN)
  - TYPE
- EVERGREEN TREE
  - DF18 CEDAR
  - 195.2 HEIGHT AGL IF MEASURED
- AL=ALDER  
 MP=MAPLE  
 DS=DECIDUOUS  
 MA=MADRONA  
 OK=OAK  
 CH=CHERRY  
 CE=CEDAR  
 DF=DOUGLAS FIR  
 HE=HEMLOCK  
 PI=PINE  
 EVG=EVERGREEN

**NOTE:**

TREE DRIP LINES ARE NOT TO SCALE. TREE SYMBOLS REFERENCE TRUNK LOCATION ONLY. TRUNK DIAMETERS WERE APPROXIMATED AT 3.5' TO 4' ABOVE GROUND LEVEL. TREES SHOWN ARE FOR REFERENCE ONLY AND OTHER TREES AND VEGETATION MAY EXIST.

**SITE INFORMATION**

TAX LOT NUMBER 30108102802900  
 SITE ADDRESS 1700 S MAIN AVE WARRENTON, OR 97146  
 SITE CONTACT MIKE MOHA (WARRENTON SD #30)  
 PHONE NUMBER 503-861-2281  
 ZONING OSI (CITY OF WARRENTON)  
 TOTAL LOT AREA 34.9 AC. (PER CO. ASSESSOR)  
 PROJECT AREA 880 S.F.

**SURVEY REFERENCE**

RECORDS OF SURVEY NO.'S B-11593, B-6513 AND B-12539, SURVEY RECORDS OF CLATSOP COUNTY.

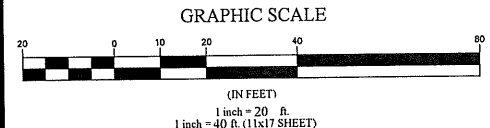
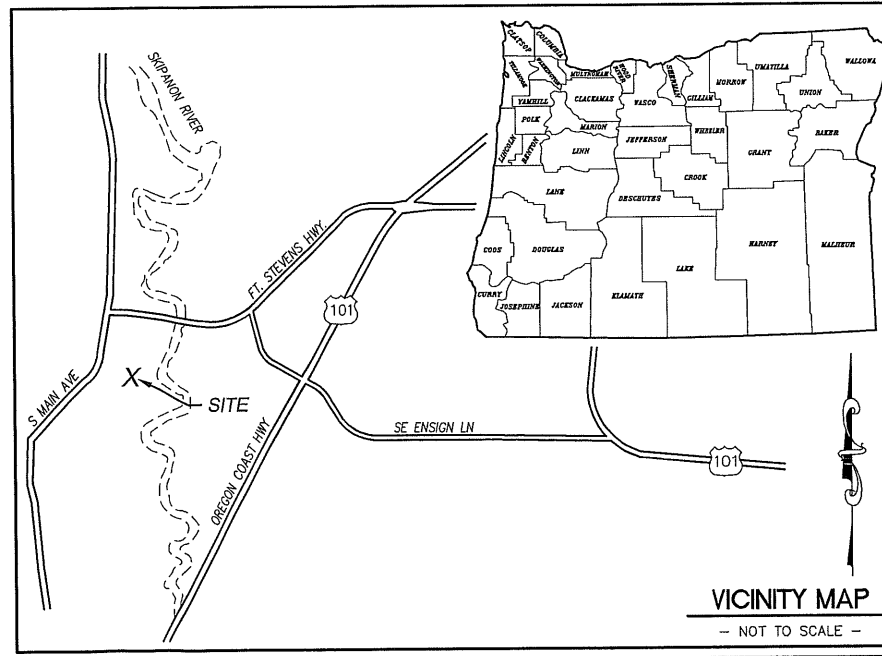
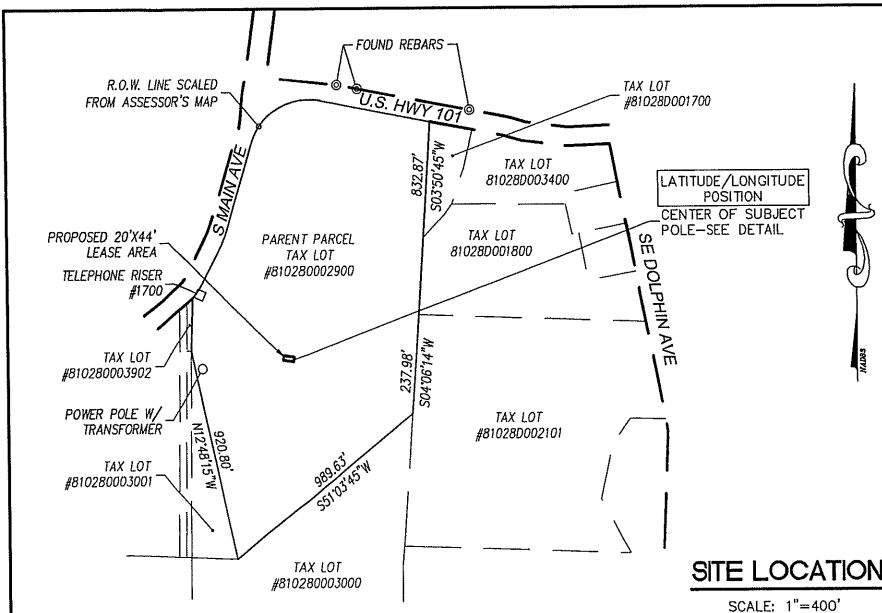
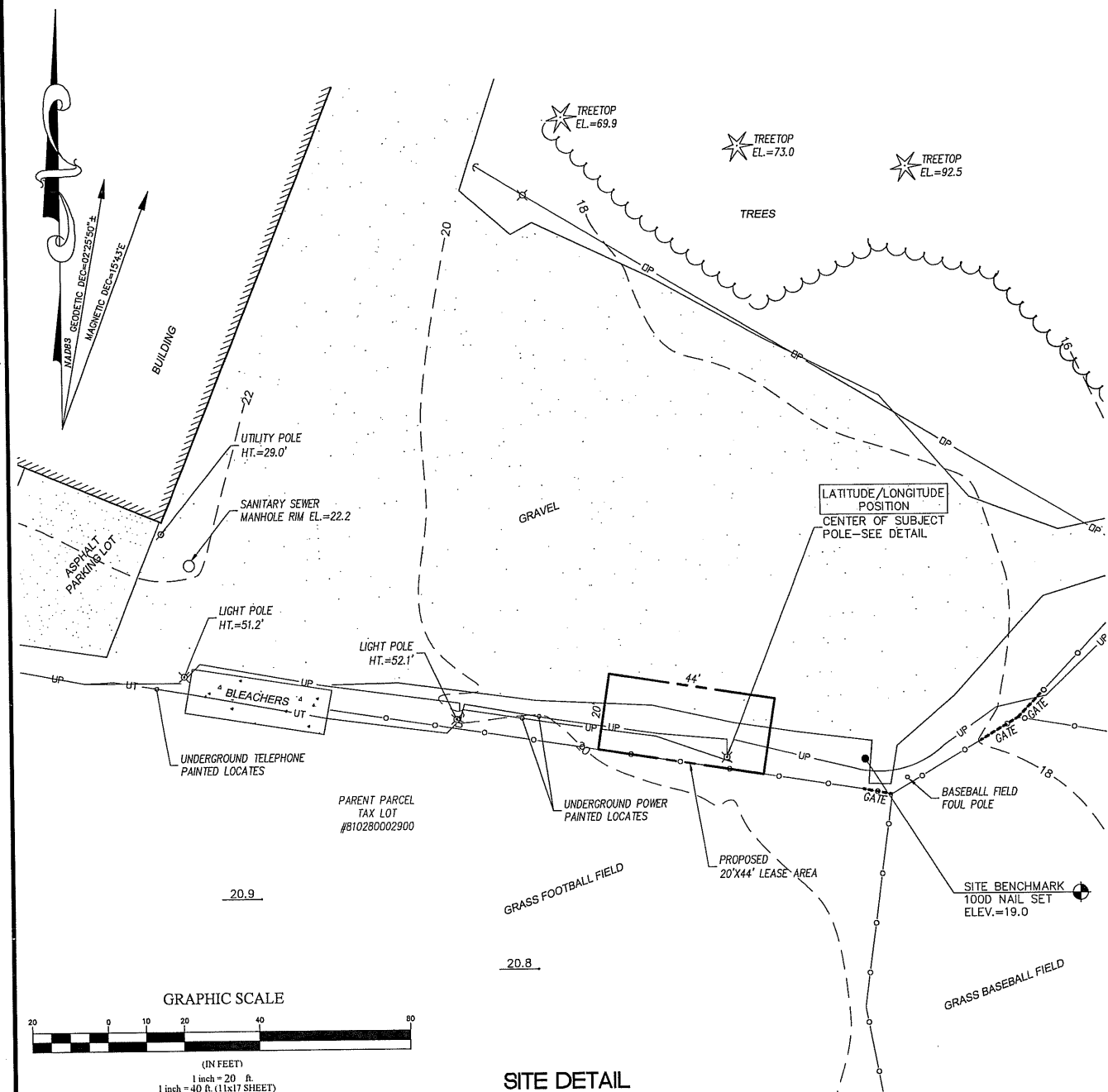
**BOUNDARY DISCLAIMER**

THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY. SUBJECT AND ADJACENT PROPERTY LINES ARE DEPICTED USING FIELD-FOUND EVIDENCE AND RECORD INFORMATION.

**CAUTION!**

UNDERGROUND UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY BE INCOMPLETE. STATE LAW REQUIRES THAT CONTRACTOR CONTACT THE ONE-CALL UTILITY LOCATE SERVICE AT LEAST 48 HOURS BEFORE STARTING ANY CONSTRUCTION.

1-800-424-5555

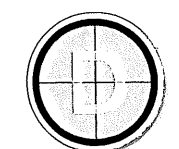


**SITE DETAIL**

**VICINITY MAP**  
 - NOT TO SCALE -



**MORRISON HERSHFIELD**  
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 BELLEVUE, WA 98004  
 Tel: 425.451.1301 Fax: 425.451.1369  
 www.morrisonhershfield.com



**DUNCANSON**  
 Company, Inc.  
 145 SW 155th Street, Suite 102  
 Seattle, Washington 98166  
 Phone 206.244.4141  
 Fax 206.244.4455

**SITE**  
**ORI FORT STEVENS**  
 1700 S MAIN AVE  
 WARRENTON, OR 97146  
 CLATSOP COUNTY

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FLD. CROW:	JA/NR
FLD. BOOK:	420/49
DRAWN BY:	LAC
JOB #:	99544.1414
DATE:	11/04/16

**REVISIONS**

DATE	DESCRIPTION	BY
8/14/17	REVISE LEASE AREA	KJW

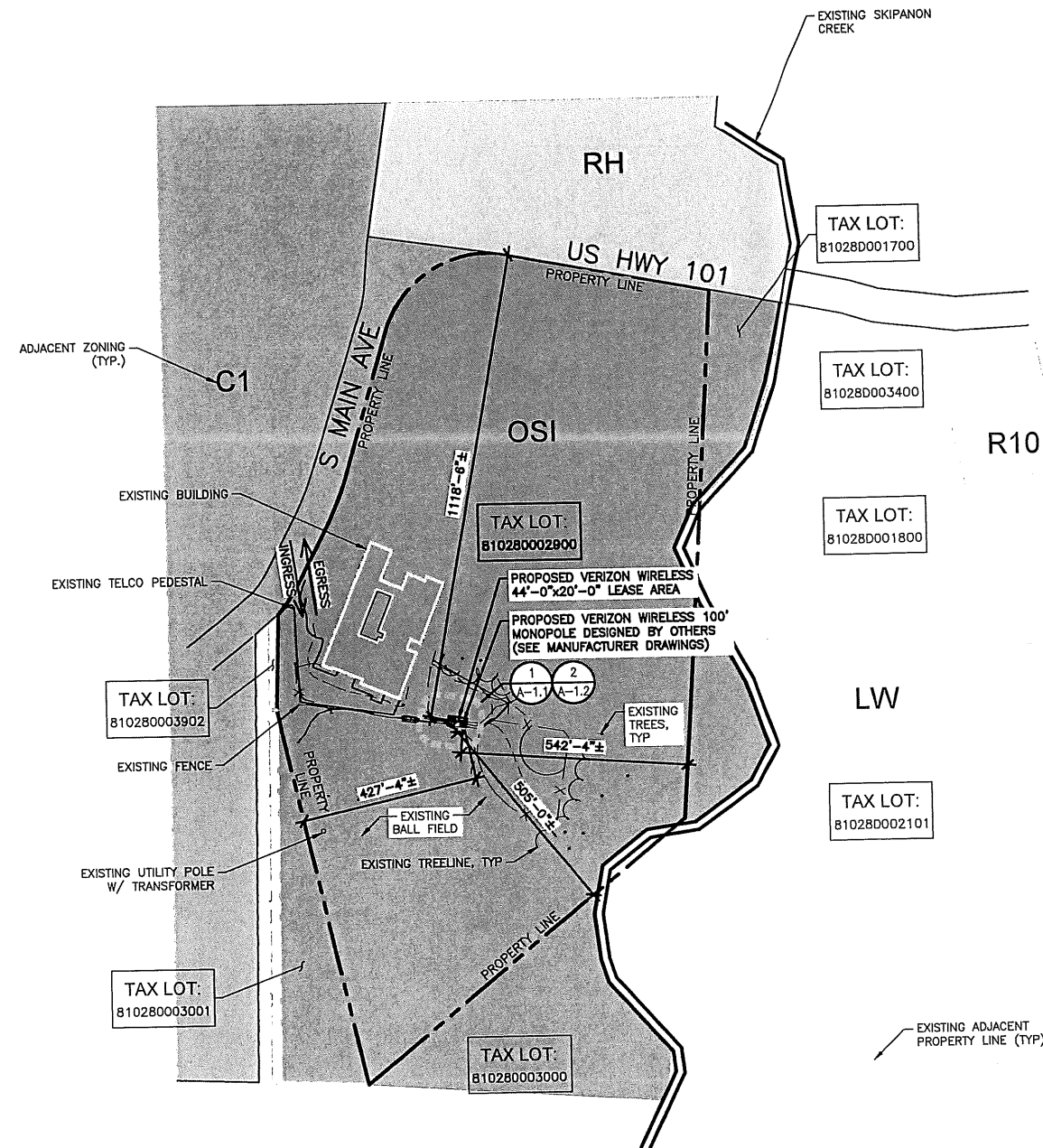
REGISTERED PROFESSIONAL LAND SURVEYOR  
 OREGON  
 MAY 10, 2011  
 JONATHAN MARLO BECKER  
 84870  
 RENEWS: 12/31/

SHEET TITLE  
**EXISTING SITE SURVEY**  
 SEC 28, TWP 8 N, RNG 10 W, WM

SHEET NUMBER  
**SV1**

NOTE:  
THIS IS NOT A SURVEY. ALL INFORMATION AND TRUE NORTH  
HAVE BEEN OBTAINED FROM EXISTING DRAWINGS AND  
JURISDICTIONAL GIS INFORMATION AND ARE APPROXIMATE.

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL  
DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR  
OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK  
SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN  
APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE  
SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND  
SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON  
HERSHFIELD CORPORATION. NEITHER MORRISON HERSHFIELD  
NOR THE ARCHITECT WILL BE PROVIDING CONSTRUCTION  
REVIEW OF THIS PROJECT.



	SIZE -- % OF SITE	BUILDING AREA	LANDSCAPE AREA	PARKING AREA
OVERALL SITE	34.9 ACRES			
PROJECT AREA	880 SQ. FT. (0.00058%)	240 SQ. FT.	0 SQ. FT.	0 SQ. FT.

FINAL ZONING		
-	-	-
1	12/18/18	JURISDICTIONAL COMMENTS
0	11/26/18	ISSUED FOR PERMIT
B	11/08/18	ISSUED FOR REVIEW
A	09/28/18	ISSUED FOR REVIEW
No.	Date	Revision

Client:  
**verizon**

Implementation Team:  
**BLACK ROCK**

A&E Team:  
**MORRISON HERSHFIELD**  
5100 SW MACADAM AVE, SUITE 500  
PORTLAND, OR 97239  
Tel: 503.595.9128  
www.morrisonhershfield.com

Project Info:  
**OR1 FORT STEVENS**  
1700 S MAIN AVE  
WARRENTON, OR 97146

Drawing Title:  
**SITE PLAN**

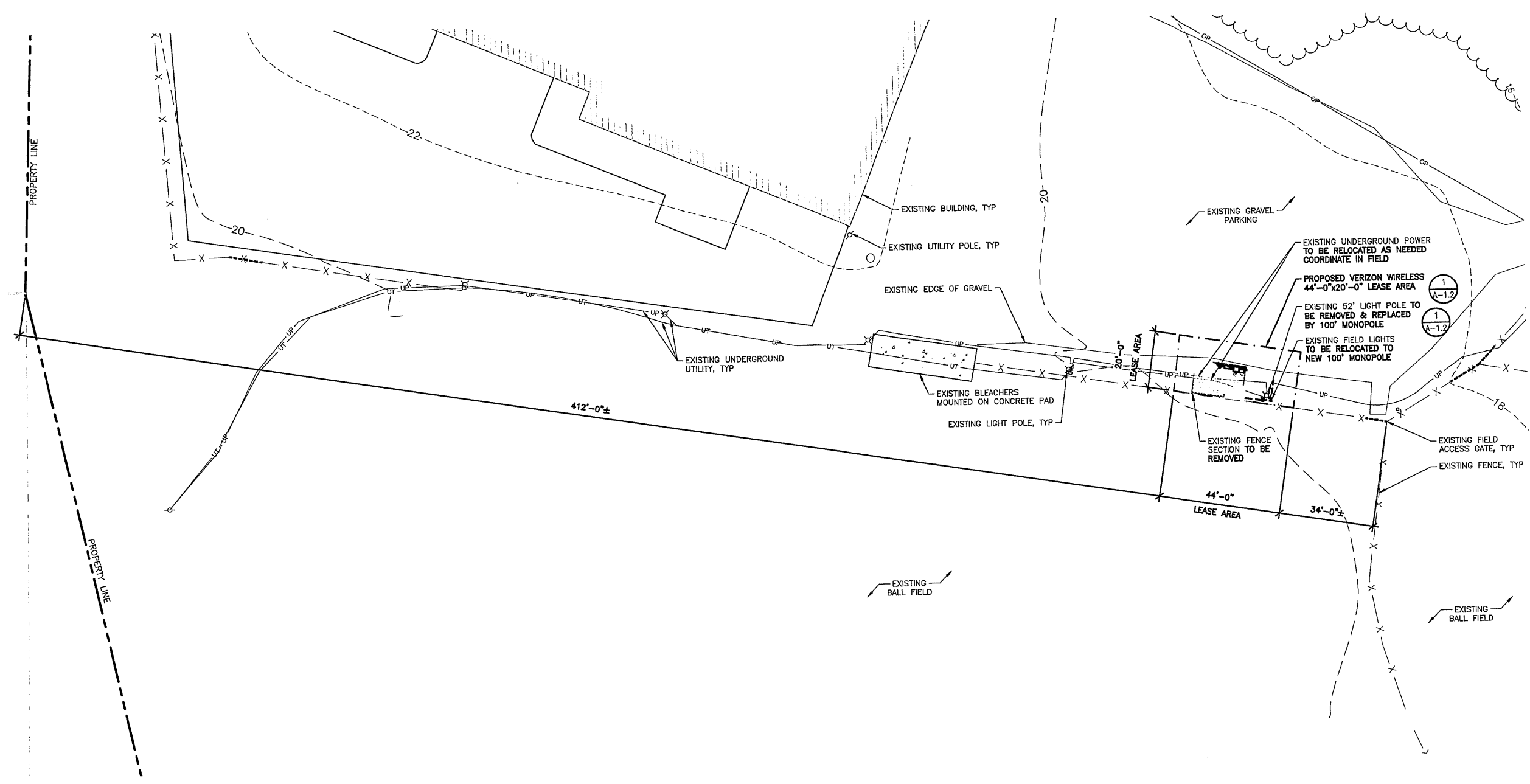
Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 0	Sheet No: A-1

**811**  
Know what's below.  
Call before you dig.

**SITE PLAN 1**

22"x34" SCALE: 1" = 200'-0"  
11"x17" SCALE: 1" = 400'-0"  
200 100 0 200'

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD CORPORATION. NEITHER MORRISON HERSHFIELD NOR THE ARCHITECT WILL BE PROVIDING CONSTRUCTION REVIEW OF THIS PROJECT.



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Client:

Implementation Team:

A&E Team:

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Project Info:

**OR1  
FORT STEVENS**  
1700 S MAIN AVE  
WARRENTON, OR 97146

Drawing Title:

**EXISTING  
ENLARGED  
SITE PLAN**

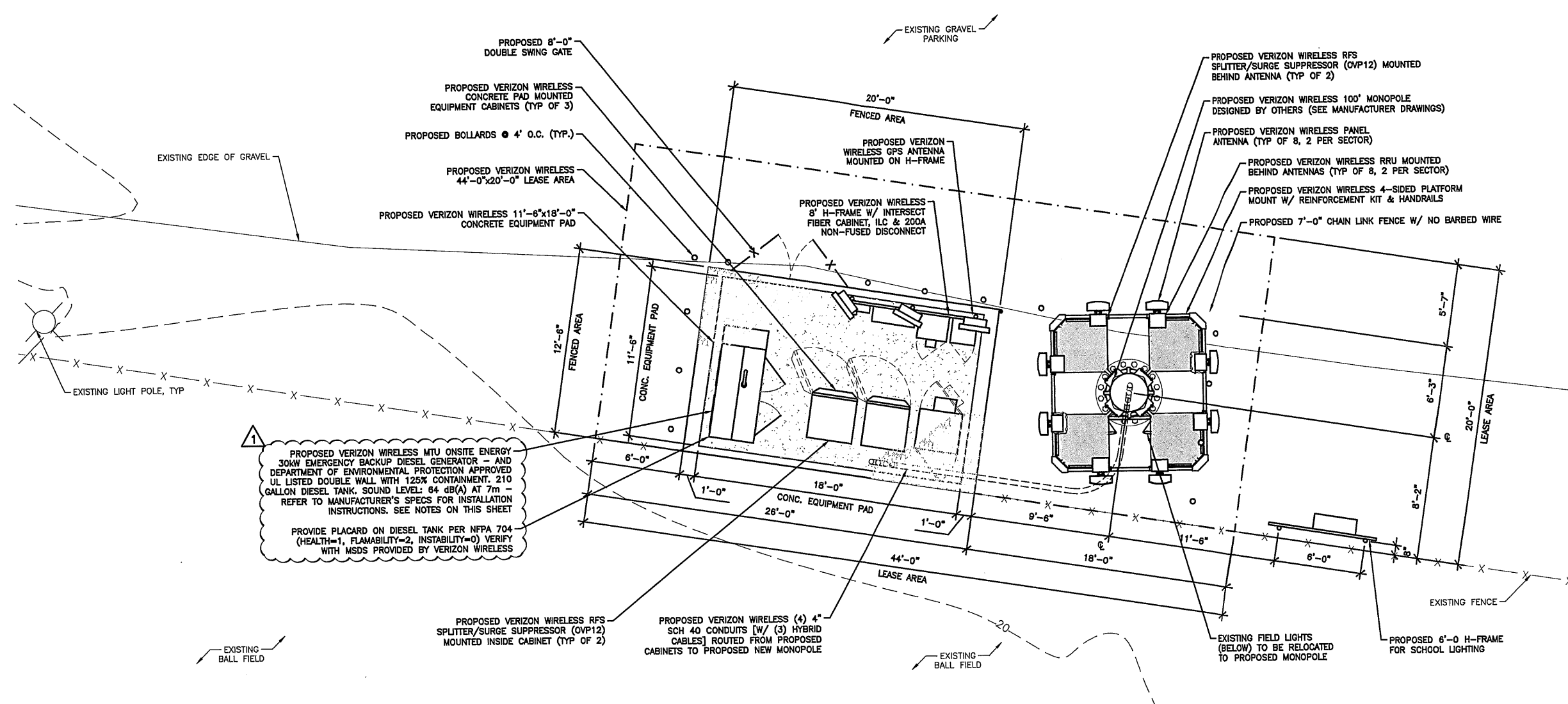
Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 0	Sheet No: A-1.1



EXISTING ENLARGED SITE PLAN 1

22"x34" SCALE: 1" = 20'-0"  
11"x17" SCALE: 1" = 40'-0"

DO NOT SCALE DRAWINGS. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR MODIFICATIONS TO WORK SHOWN SHALL BE IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL. ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED BY THE LATEST REVISION. ALL DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF MORRISON HERSHFIELD CORPORATION. NEITHER MORRISON HERSHFIELD NOR THE ARCHITECT WILL BE PROVIDING CONSTRUCTION REVIEW OF THIS PROJECT.



**PROPOSED VERIZON WIRELESS MTU ON-SITE ENERGY 30kW EMERGENCY BACKUP DIESEL GENERATOR - AND DEPARTMENT OF ENVIRONMENTAL PROTECTION APPROVED UL LISTED DOUBLE WALL WITH 125% CONTAINMENT, 210 GALLON DIESEL TANK. SOUND LEVEL: 64 dB(A) AT 7m - REFER TO MANUFACTURER'S SPECS FOR INSTALLATION INSTRUCTIONS. SEE NOTES ON THIS SHEET**

**PROVIDE PLACARD ON DIESEL TANK PER NFPA 704 (HEALTH=1, FLAMABILITY=2, INSTABILITY=0) VERIFY WITH MSDS PROVIDED BY VERIZON WIRELESS**

**NFPA NOTES:**

- CONSTRUCTION, INSTALLATION, MAINTENANCE, & OPERATIONAL TESTING OF EPSS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF NFPA 110.
- ALL ELECTRICAL WORK SHALL COMPLY WITH LATEST ADOPTED EDITION OF NFPA 70 - NATIONAL ELECTRICAL CODE.

**FUEL TANK NOTE:**

CONTRACTOR SHALL SUPPLY AND INSTALL THE FOLLOWING ITEMS IF NOT SUPPLIED WITH TANK.

INSTALL 12" VENT PIPES FOR TANK AS REQUIRED BY JURISDICTION.

THE TANK SHALL BE MANUFACTURED WITH THE FOLLOWING: INTERSTITIAL ELECTRONICALLY MONITORED RUPTURE BASIN ALARM TO MONITOR THE SPACE BETWEEN THE PRIMARY AND SECONDARY TANK. OVERFILL ALERT TO VISUALLY WARN WHEN THE TANK IS FILLED UPON CAPACITY. OVERSPILL CONTAINMENT AT FILL PORT TO PREVENT SPILL OF FUEL DURING FILLING OPERATIONS. 5 GALLON OVERSPILL CONTAINMENT W/ LOCKABLE CAP.

**FLOODPLAIN NOTES:**

PER NOTE #5 ON SHEET SV1

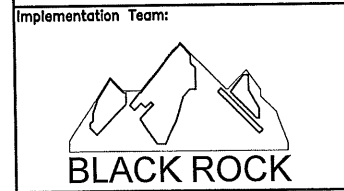
- PROJECT IS NOT IN 100 YEAR FLOODPLAIN.
- FEMA DESIGNATION: ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), PANEL 218 OF 800, FIRM MAP NUMBER 41007C0218E, EFFECTIVE DATE SEPTEMBER 17, 2010.



22"x34" SCALE: 1/4" = 1'-0"  
11"x17" SCALE: 1/8" = 1'-0"

**FINAL ZONING**

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No.	Date	Revision



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OR1  
FORT STEVENS  
1700 S MAIN AVE  
WARRENTON, OR 97146

**Drawing Title:**

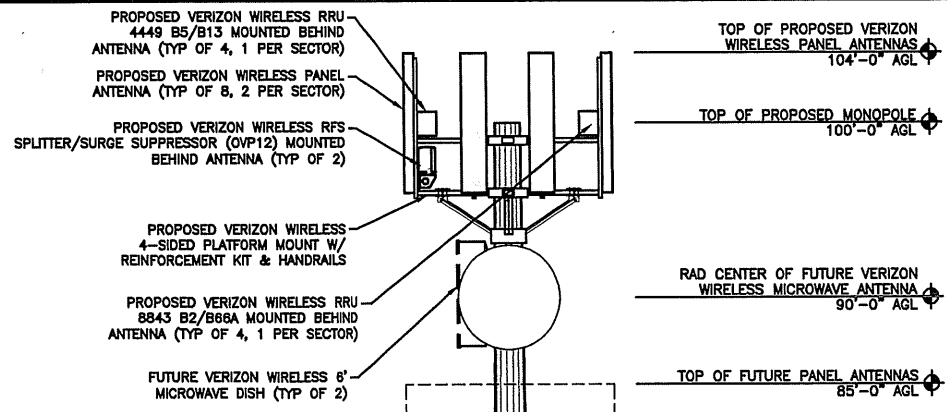
**PROPOSED COMPOUND PLAN**

Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 1	Sheet No: A-1.2

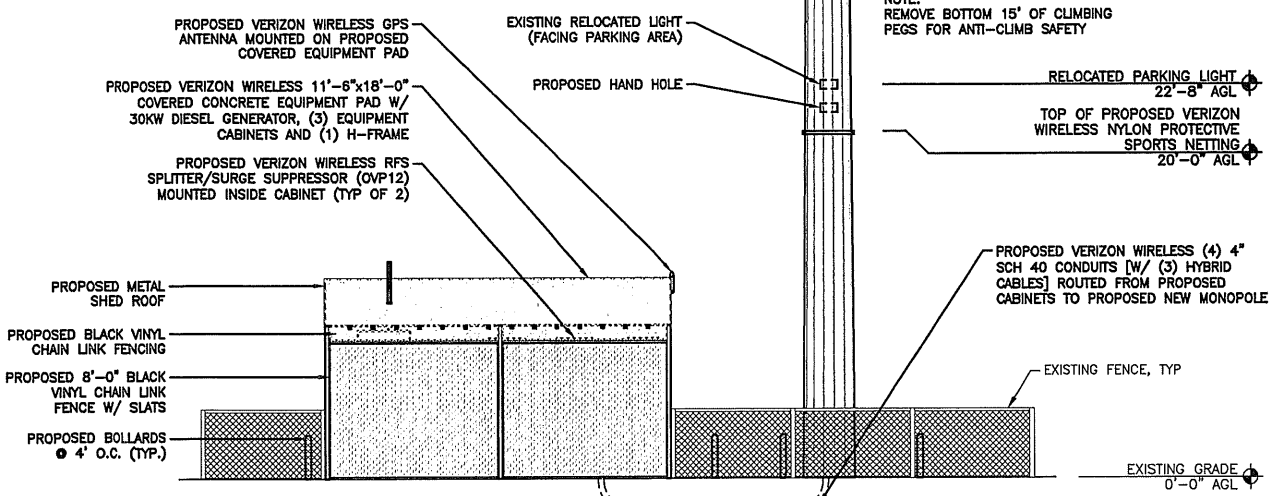
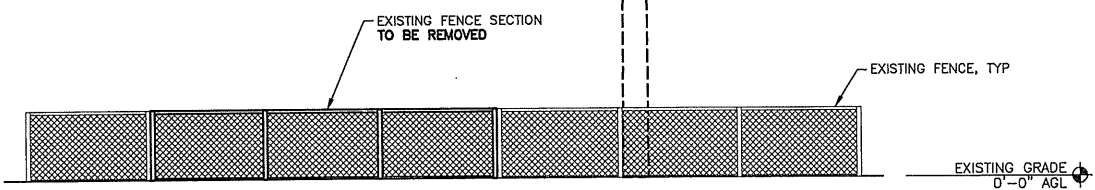
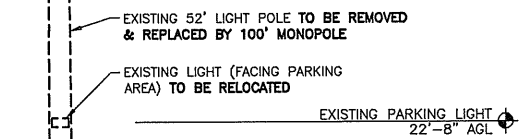
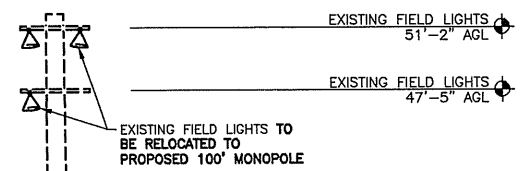
**PROPOSED COMPOUND PLAN 1**



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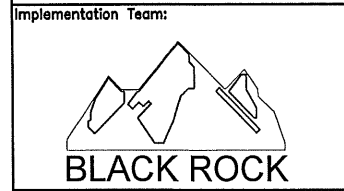
- NOTE:**
- NO WORK SHALL COMMENCE WITHOUT THE APPROVED TOWER STRUCTURAL ANALYSIS REPORT SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER UNDER SEPARATE COVER. ANTENNA MOUNT DESIGN BY MANUFACTURER.
  - REFER TO ENGINEERED DRAWINGS FOR DESIGN/ENGINEERING OF MONOPOLE AND ITS FOUNDATION BY TOWER MANUFACTURER.
  - TOWER LOADING INCLUDES FUTURE CAPACITY TO SUPPORT ADDITIONAL CARRIERS AND EQUIPMENT. ADDITIONAL LOADING UNDER SEPARATE PERMIT AS REQUIRED BY JURISDICTION.
  - PROPOSED ANTENNAS, HARDWARE & COAX TO BE PAINTED TO MATCH TOWER AS REQUIRED BY JURISDICTION



**FINAL ZONING**

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No. Date Revision



A&E Team:

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Tel: 503.595.9128  
www.morrisonherhshfield.com

Project Info:

**OR1 FORT STEVENS**  
1700 S MAIN AVE  
WARRENTON, OR 97146

Drawing Title:

**ELEVATIONS**

Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 0	Sheet No: A-2

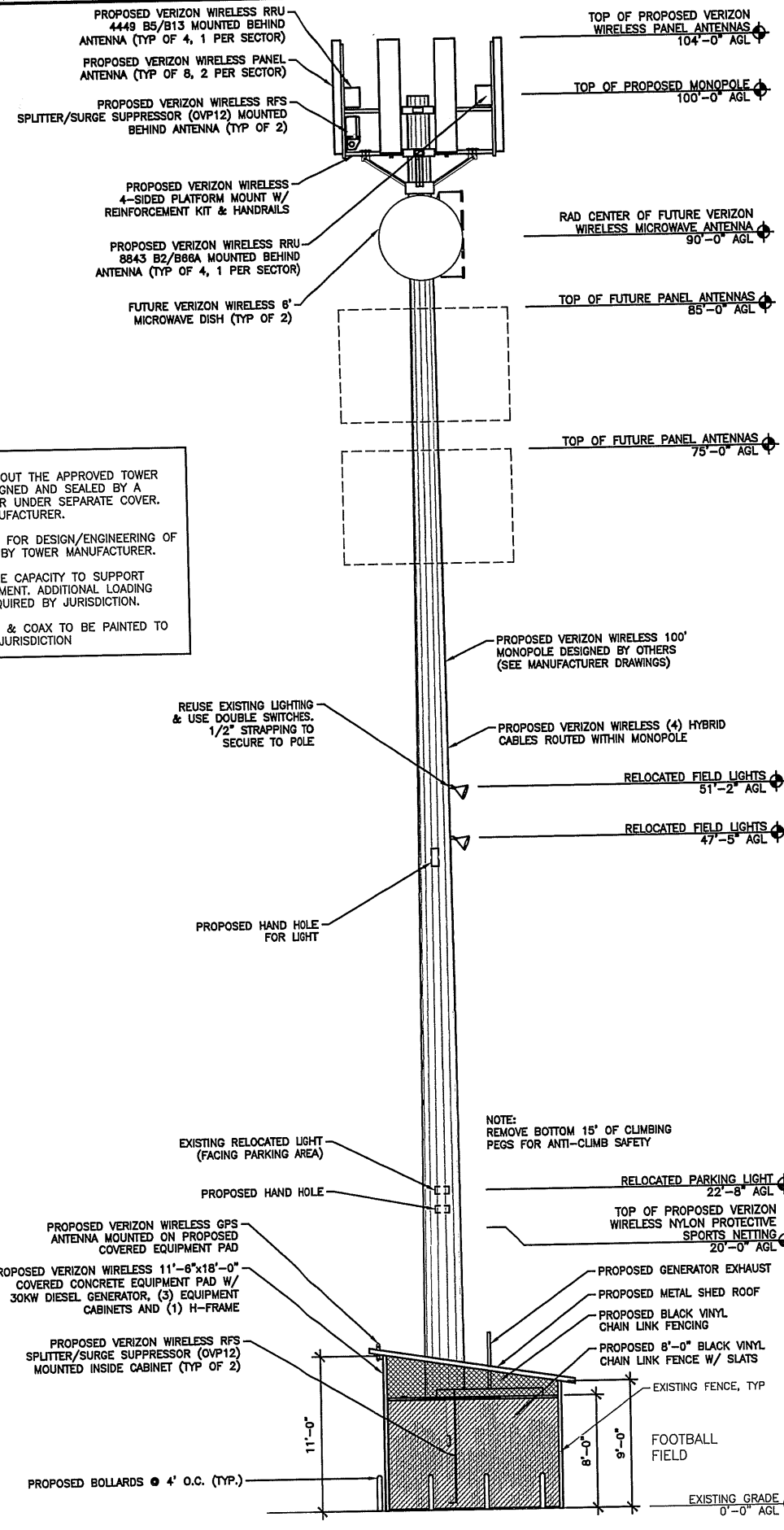
22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

EXISTING SOUTH ELEVATION 2

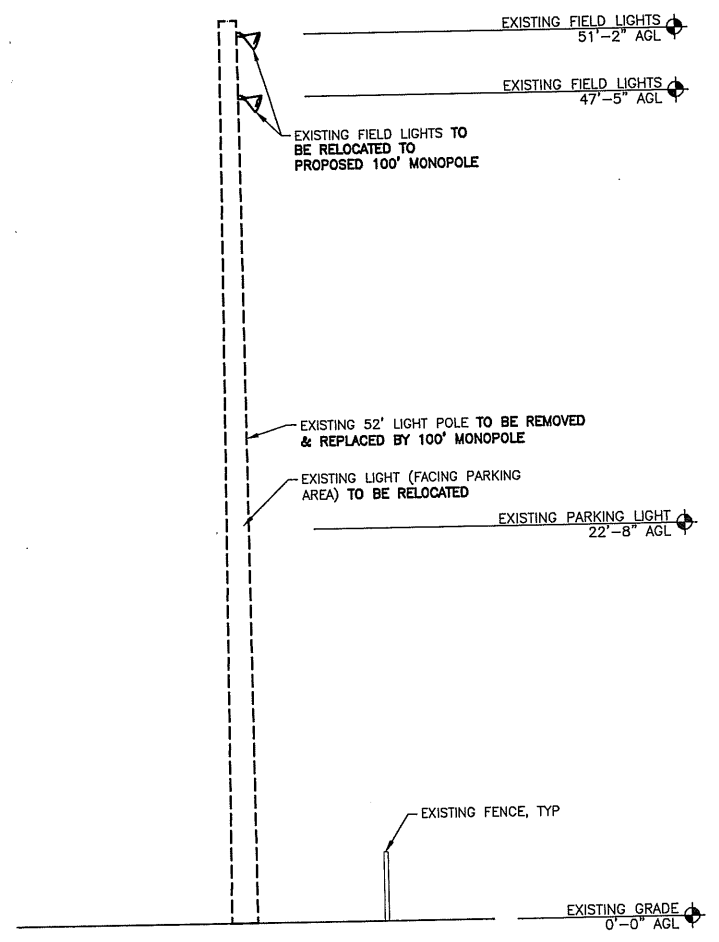
22"x34" SCALE: 3/16" = 1'-0"  
11"x17" SCALE: 3/32" = 1'-0"

PROPOSED SOUTH ELEVATION 1

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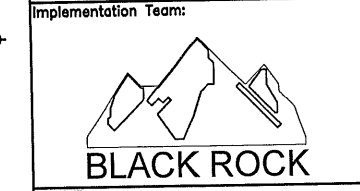
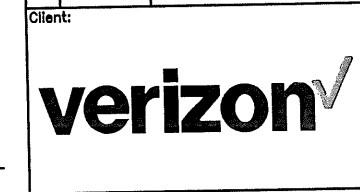


- NOTE:**
- NO WORK SHALL COMMENCE WITHOUT THE APPROVED TOWER STRUCTURAL ANALYSIS REPORT SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER UNDER SEPARATE COVER. ANTENNA MOUNT DESIGN BY MANUFACTURER.
  - REFER TO ENGINEERED DRAWINGS FOR DESIGN/ENGINEERING OF MONOPOLE AND ITS FOUNDATION BY TOWER MANUFACTURER.
  - TOWER LOADING INCLUDES FUTURE CAPACITY TO SUPPORT ADDITIONAL CARRIERS AND EQUIPMENT. ADDITIONAL LOADING UNDER SEPARATE PERMIT AS REQUIRED BY JURISDICTION.
  - PROPOSED ANTENNAS, HARDWARE & COAX TO BE PAINTED TO MATCH TOWER AS REQUIRED BY JURISDICTION



**FINAL ZONING**

No.	Date	Revision
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A&E Team:

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Drawing Title:

**ELEVATIONS**

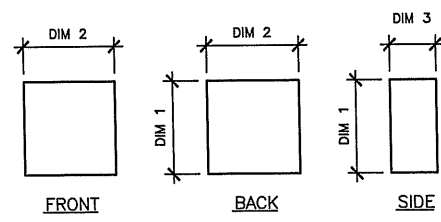
Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No: 0	Sheet No: A-2.1

22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

EXISTING WEST ELEVATION 2

22"x34" SCALE: 3/16" = 1'-0"  
11"x17" SCALE: 3/32" = 1'-0"

PROPOSED WEST ELEVATION 1



	QTY	DIM 1	DIM 2	DIM 3	WEIGHT
RRU 4449 B13/B5	4	18.0"	13.2"	9.4"	70.0 LBS
RRU 8843 B66A	4	18.0"	13.2"	11.3"	75.0 LBS

NOTES:  
1. INSTALL UNITS PER MANUFACTURER SPECIFICATIONS

PROPOSED ANTENNA AND COAX SCHEDULE												
SECTOR	D1	AZIMUTH	TIP HEIGHT	NUMBER OF ANTENNAS	VENDOR	MODEL	ELEC TILT	MECH DOWNTILT	NUMBER OF FEEDERS	FEEDER TYPE	FEEDER LENGTH	ADDITIONAL EQUIPMENT
PCS/700/800 LTE	D1	0°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°	-	-	-	(1) RRU 4449 B5/B13 (1) RRU 8843 B2/B66A
AWS/700/800 LTE	D1	0°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°	-	-	-	
SECTOR D2												
PCS/700/800 LTE	D2	90°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°	2	HYBRID	140'-0"	(1) RRU 4449 B5/B13 (1) RRU 8843 B2/B66A (1) OVP12
AWS/700/800 LTE	D2	90°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°				
SECTOR D3												
PCS/700/800 LTE	D3	180°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°	-	-	-	(1) RRU 4449 B5/B13 (1) RRU 8843 B2/B66A
AWS/700/800 LTE	D3	180°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°				
SECTOR D4												
PCS/700/800 LTE	D4	270°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°	2	HYBRID	140'-0"	(1) RRU 4449 B5/B13 (1) RRU 8843 B2/B66A (1) OVP12
AWS/700/800 LTE	D4	270°	104'-0"	1	COMMSCOPE	NHH-45C-R2B	0°	0°				

NOTES:  
1. ADJUST PIPE MOUNTS AS REQUIRED TO ACCOMMODATE REQUIRED ANTENNA SPACING.  
2. PROVIDED 36" CENTER TO CENTER SPACE FOR ALL ANTENNAS

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FINAL ZONING		
-	-	-
-	-	-
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A&E Team:

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Drawing Title:

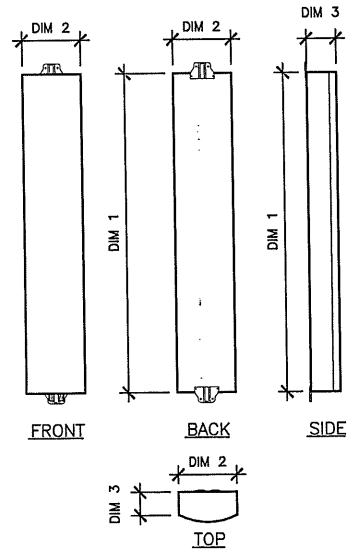
PROPOSED ANTENNA CONFIGURATION

Project Number: 190001800	Start Date: 09/27/18
Drafter: LW	Designer: RB
Project Manager: LJB	Professional of Record: LC
Revision No:	Sheet No:

0 RF-1

22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

PROPOSED RRU DIMENSIONS 4

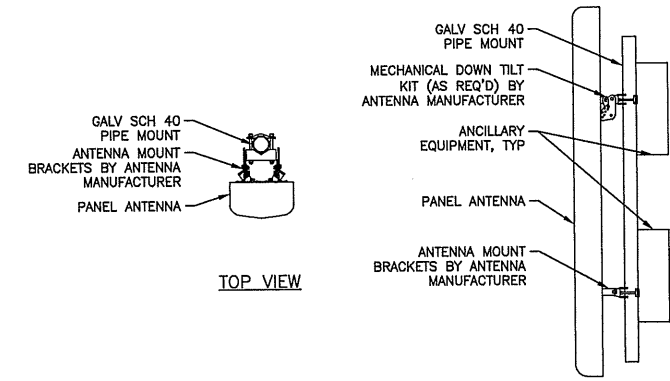


	QTY	DIM 1	DIM 2	DIM 3	WEIGHT
SECTOR D1					
NHH-45C-R2B	2	95.9"	18.0"	7.0"	87.1 LBS
SECTOR D2					
NHH-45C-R2B	2	95.9"	18.0"	7.0"	87.1 LBS
SECTOR D3					
NHH-45C-R2B	2	95.9"	18.0"	7.0"	87.1 LBS
SECTOR D4					
NHH-45C-R2B	2	95.9"	18.0"	7.0"	87.1 LBS

NOTES:  
1. INSTALL ANTENNAS PER MANUFACTURER SPECIFICATIONS  
2. CONTRACTOR TO TORQUE ALL MOUNTING HARDWARE PER MANUFACTURER SPECIFICATIONS

22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

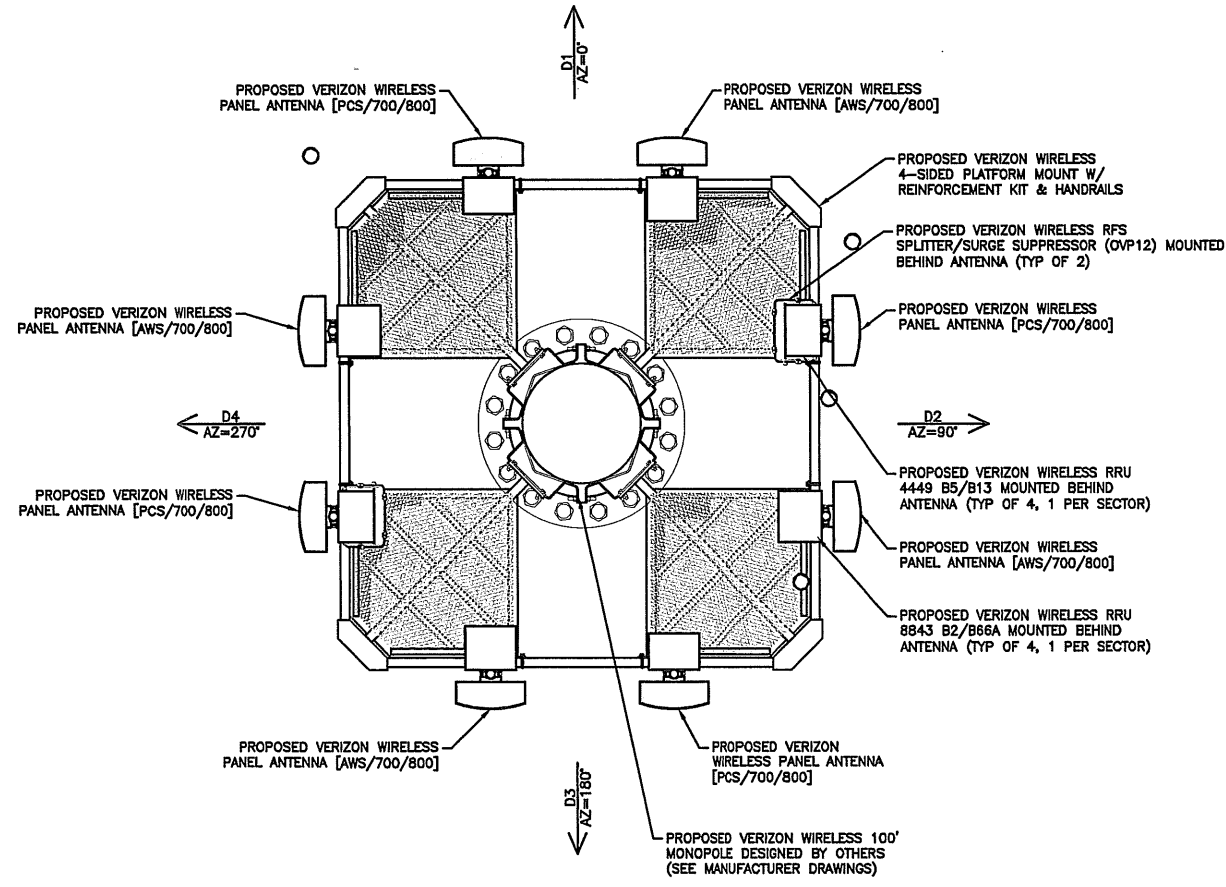
PROPOSED ANTENNA DIMENSIONS 3



22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

TYPICAL ANTENNA ATTACHMENT 2

22"x34" SCALE: 1/2" = 1'-0"  
11"x17" SCALE: 1/4" = 1'-0"



PROPOSED ANTENNA CONFIGURATION 1



# WARRENTON-HAMMOND SCHOOL DISTRICT NO. 30

820 SW Cedar, Warrenton, OR 97146-9799 • Phone (503) 861-2281 • Fax (503) 861-2911

December 18, 2018

Kevin Cronin  
Community Planning Director  
City of Warrenton  
Planning and Building Department  
PO Box 250  
Warrenton, Oregon 97146

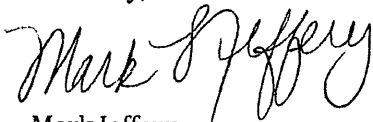
RE: Verizon Wireless Telecommunication Facility CUP Application for Facility at Warrenton High School

Dear Kevin Cronin and Warrenton Planning Commission:

The Warrenton-Hammond School District, as owners of the property upon which the above referenced facility is proposed, would like to express our support of the proposal as submitted by Verizon Wireless. We request a waiver of any requirement for landscaping of the proposed facility so as to maximize space for parking and sports field areas, and to prevent an undue maintenance burden.

The location of the proposed facility will be obscured from public views by distance, existing vegetation, buildings, and the screening measures Verizon is proposing for the facility. We believe any landscaping is unnecessary and would not benefit the community or our property.

Sincerely,



Mark Jeffery  
Superintendent

January 7, 2019

Konrad Hyle  
Black Rock, LLC  
5430 NE 122<sup>nd</sup> Ave  
Portland OR 97230

RE: Verizon Cell Tower @ Warrenton High School (CUP Application File: 19-1)

After reviewing the conditional use permit application for a cell tower at Warrenton High School, I have determined the application complete. Notice to adjacent property owners will be mailed next. In addition, public notice will be published in *The Columbia Press* for a public hearing with the Planning Commission scheduled for February 14 which is required for applications reviewed in a Type III process.

As I begin the formal review process, please be available for questions and clarifications of application materials. Please feel free to contact me if you have any questions.

I look forward to working with you on a successful outcome for your project.

Sincerely,

Kevin A. Cronin, AICP  
Community Development Director

*"Making a difference through excellence of service"*



## CITY OF WARRENTON

---

February 7, 2019

To: Warrenton Planning Commission  
From: Kevin A. Cronin, AICP, Community Development Director  
Re: Verizon Wireless Conditional Use Permit CUP 19-1

### **Introduction**

On behalf of Verizon Wireless LLC, Konrad Hyle of Blackrock LLC has submitted a conditional use permit application for a 104 foot monopole style tower in the Open Space Institutional (OSI) zoning district, with new panel antennas, new dishes, and tower & ground mounted associated equipment. Ground equipment will be installed inside a fenced area and inside a prefabricated concrete shelter. All improvements will be installed within existing leased premises. Authorization from the property owner – Warrenton School District – was required as part of the completeness review. The proposed tower would be constructed adjacent to the Warrenton High School football stadium and would replace one of the stadium light standards; new lamps would be affixed to the proposed monopole. The subject property is located at 1700 S Main Avenue and is identified as Tax Lot 810280002900. A conditional use permit (CUP 17-3) was issued in 2017 but expired as a result of inactivity. The new application is a duplicate in almost every way since the previous application was approved and the applicant's client has not changed the scope of the project.

### **Application Process & Timeline**

A required pre-application conference was held on November 28, 2018. Blackrock submitted the application on December 28, 2018 with responses to the pre-app notes and deemed complete on January 7, 2019. Public notice of the application was mailed to adjacent property owners on January 9 and published notice in *The Columbia Press* on January 11, 2019. To date, no comments have been received from the public. Affected agency notice was emailed on January 15, 2019. No comments have been received. A public hearing is scheduled for February 14 to allow public testimony.

### **Existing Conditions**

A site visit was conducted on February 6 to verify existing conditions. The high school is surrounded by open space and wetlands to the east, rural residential to the west, and warehouses to the south along S Main Ave. From the applicant's perspective, this offers an ideal location to provide improved service without impacts to the neighborhood while benefiting the Warrenton School District with lease revenue and improved access for and to emergency responders.

### **Applicable Warrenton Municipal Code Criteria**

WMC 16.52.030      Open Space and Institutional (OSI) District Conditional Uses  
Chapter 16.148      Wireless Communication Facilities  
Section 16.208.040    Type II Procedure (Administrative).  
Chapter 16.220      Conditional Use Permits

### **Background**

Verizon Wireless is expanding and filling in coverage gaps in their existing network. Improvements has been made to the Astoria market and Warrenton is next in line. There is no existing cell tower that would allow co location. However, other carriers can co locate with this new tower if approved.

### **Findings**

Below are the applicable code criteria followed by the applicant's response and staff findings. The application includes multiple exhibits.

#### **Section 16.52.030 Open Space and Institutional District Conditional Uses**

The following uses and activities and their accessory uses and activities may be permitted in the OSI zone when approved under Chapter 16.220, and subject to the provisions in Section 16.52.040, Development Standards:

D.      *Communication facilities subject to the standards of Chapter 16.148.*

Staff finding: Cell towers are communication facilities, and thus, require a conditional use permit in the OSI district. There are no development standards in 16.52.040 applicable to cell towers.

#### **Chapter 16.220.030 [Conditional Use] Review Criteria**

*A. Before a conditional use is approved findings will be made that the use will comply with the following standards:*

*1. The proposed use is in conformance with the Comprehensive Plan.*

APPLICANT RESPONSE: The proposed use is in conformance with the Comprehensive Plan as the facility will be located in the Open Space and Institutional Zone (OSI) and per the



Comprehensive Plan one of the purposes of the OSI Zone is to “provide for development on ... school grounds...and other large tracts of public land.”

APPLICANT RESPONSE TO THE APPLICATION FORM: The proposed use [also] is in conformance with the comprehensive plan as the proposal will enhance the ability to provide communication services, including emergency service, to City residents, agencies, businesses, and visitors. The facility has been designed to protect the City’s natural resources, historic resources, and visual environments from potential adverse effects through careful design and siting standards

Staff finding: Staff generally agrees with this statement and notes that it is further supported by the inclusion of communication facilities as conditional uses in the OSI district.

*2. The location, size, design and operating characteristics of the proposed use are such that the development will be compatible with, and have a minimal impact on, surrounding properties.*

APPLICANT RESPONSE: The location, size, design and operating characteristics of the site are suitable for the proposed use considering size. The property is 34.9 acres and the proposed leased/fenced area is 40’x20’ all of the proposed improvements will adequately fit inside the fenced lease area. The proposed facility location on the subject parcel is near center of the property and is setback over 414 feet from west property line (closest) and over 505 feet from South east property line so as to have a minimal impact on surrounding properties. The project will include a 104’ tall monopole style tower with antennas at 104’ which is the minimum height to achieve required signal objective. The overall height will be 104’. The tower will be a slim style monopole structure to minimize mass. No excessive vibrations, noise, exhaust or other emissions, light, glare, erosion, odors, or dust are anticipated for the project. The project will be enclosed with a security fence with a locked gate for safety. The proposed monopole is at the minimum height and sites at a location near center of property to be away from off-site properties as much as practicable and designed at a minimum height to minimize any off site visual impacts.

APPLICANT RESPONSE TO THE APPLICATION FORM: The characteristics of the site are suitable for the proposed use considering size: The property is 34.9 acres the proposed tower compound size will only be 40’x15’ size (600 sq. ft.) and will fit within a fenced, graveled lease area at the existing gravel parking lot area. The location of the facility is sited to have minimal impact on property and in relation to surrounding properties - located over 410 feet from Main Street to west and over 500 feet from property line to south and east. The design utilizes an extension of an existing 50’ ball field light pole to 104’ height to have minimal impact. The operating characteristics of the facility only require underground power and fiber utility connections, average of 2 vehicle trips per month

by a technician, and emit minimal sound levels with the operation of the emergency backup generator located within a secure sound dampening enclosure within tolerances established by DEQ. The tower does not require any marking or lighting per FAA and the dull galvanized steel finish will be non-reflective to minimize glare. The proposed facility will have no adverse effects on surrounding properties.

Staff finding: Staff concurs with the applicant's response. The photo simulations in Exhibit E further support this finding.

3. *The use will not generate excessive traffic, when compared to traffic generated by uses permitted outright, and adjacent streets have the capacity to accommodate the traffic generated.*

APPLICANT RESPONSE: The proposed wireless communication facility will generate a maximum of 2 vehicle trips per month. The facility will not generate excessive traffic when compared to permitted uses such as the existing high school use on same property. Technician may visit the twice a month at most – no traffic impacts.

APPLICANT RESPONSE TO THE APPLICATION FORM The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, therefore not generating excessive traffic when compared to the existing use or other uses permitted outright in this zone. The adjacent streets have the capacity to accommodate the maximum additional 2 vehicle trips per month.

Staff finding: Staff concurs.

4. *Public facilities and services are adequate to accommodate the proposed use.*

APPLICANT RESPONSE: The Verizon Wireless's Communication Facility will have little to no impact on public facilities. The proposed facility is unmanned, and would not require or impact any Public facilities including, the transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system or have any adverse noise impacts. The facility will be located within a portion of the existing school parking lot and will not create any additional impervious area so will not impact drainage. Any sound emitted by the facility will be well below State Oregon DEQ standards as the proposed HVAC and emergency backup generator will be located inside of the prefabricated concrete shelter which includes sound dampening such that any sounds emitted are reduced to a level acceptable in residential environments beyond 70 feet from the facility. The closest off site property is over 400 feet distant, so no neighboring properties will be impacted.

*The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use. Telephone service and electrical power are the only facilities required by the proposed site.*

APPLICANT RESPONSE TO THE APPLICATION FORM: The site and proposed use will have adequate public facilities and services to accommodate the proposed use. The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use.

Staff finding: Staff concurs.

5. *The site's physical characteristics, in terms of topography, soils and other pertinent considerations, are appropriate for the use.*

APPLICANT RESPONSE: Topography: The site is generally flat and is well suited for construction of the proposed improvements. The soils per soils report [Black Mountain Consulting LLC] are adequate to support tower foundation. The site's physical characteristics, in terms of topography, soils and other pertinent considerations, are appropriate for the use.

APPLICANT RESPONSE TO THE APPLICATION FORM: The site's physical characteristics, in term of topography, soils and other pertinent considerations are, are appropriate for the use. The site is generally flat and will not require excessive grading or additional disturbance. The underlying soils are stable to provide an adequate foundation for the facility and are outside of any wetland areas as to provide adequate constructability for the facility. The location of the subject parcel and proposed tower location is within the Verizon search area to fulfill the Coverage & Capacity Gaps in Verizon's service.

Staff finding: We concur.

6. *The site has an adequate area to accommodate the proposed use. The site layout has been designed to provide for appropriate access points, on-site drives, public areas, loading areas, storage facilities, setbacks and buffers, utilities or other facilities which are required by City ordinances or desired by the applicant.*

APPLICANT RESPONSE: The property is a large parcel as described above and there is adequate area to accommodate the proposed use. Access: The leased area will have access via a 20'

access easement to facility from SE Main Avenue. The facility is located within the existing parking lot and there are no required additional on-site driveways, public areas, loading areas, storage facilities, setbacks, or buffers required for the facility.

Staff finding: Staff concurs.

### **Chapter 16.208.050 TYPE III PROCEDURES**

#### **B. Application Requirements.**

*2. e. Include an Impact Study for all Type III applications. The study shall address the effect of the development on public facilities and services. These services shall address at a minimum, transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system and the noise impacts of the development.*

APPLICANT RESPONSE: The Verizon Wireless's Communication Facility will have little to no impact on public facilities. The proposed facility is unmanned, and would not require or impact any Public facilities including, the transportation system, including pedestrian and bikeways, the drainage system, the parks system, the water system, the sewer system or have any adverse noise impacts. The facility will be located within a portion of the existing school parking lot and will not create any additional impervious area so will not impact drainage. Any sound emitted by the facility will be well below State Oregon DEQ standards as the proposed HVAC and emergency backup generator will be located inside of the prefabricated concrete shelter which includes sound dampening such that any sounds emitted are reduced to a level acceptable in residential environments beyond 30 feet from the facility. The closest off site property is over 400 feet distant, so no neighboring properties will be impacted. See also EXHIBIT D.

The facility will be an unmanned utility use with maximum of 2 vehicle trips per month, no public facilities required to serve the site – no water, sewer, drainage, or other public facilities required to serve the use. Existing electric power is available to site and per the power provider can be upgraded to accommodate the use. Telephone service and electrical power are the only facilities required by the proposed site.

Staff finding: We concur.

### **Chapter 16.148 WIRELESS COMMUNICATION FACILITIES**

#### **16.148.050 Application Requirements.**

In addition to all standard required conditional use permit application materials, an applicant for a new WCF or modifications to an existing WCF shall submit the following information:

- A. *A visual study containing, at a minimum, a vicinity map depicting where, within a one half mile radius, any portion of the proposed tower could be visible, and a graphic simulation showing the appearance of the proposed tower and accessory structures from two separate points within the impacted vicinity, accompanied by an assessment of potential mitigation measures. Such points are to be mutually agreed upon by the Community Development Director and the applicant.*

APPLICANT RESPONSE: The visual study – photo-simulations with map is included as Exhibit *The locations were agreed in advance with Community development Director. The elevation drawing in attached site plans (EXHIBIT O) shows the tower silhouette/profile as well as the proposed screen fence to obscure the outdoor shelter building. The attached photo simulations with map provide the view shed analysis showing proposed color and finish and the monopole design.*

Staff finding: The photo simulations in Exhibit E indicate that while the tower will be visible, it will be mostly obscured by existing trees canopy and school structures. However, the top portion of the tower is still visible. The Commission needs to decide whether this standard is met.

- B. *Documentation of the steps that will be taken to minimize the visual impact of the proposed facility.*

APPLICANT RESPONSE: The facility is designed at the minimum height necessary of 104 feet, to achieve the coverage objective and is designed as a slim style monopole to minimize visual impacts. In addition the facility is setback from any nearby properties to further minimize visual impacts.

Staff finding: Existing tree canopy and structures mentioned above provide some buffering of the proposed monopole. The Commission needs to determine if other measures, such as screening and monopole design are necessary to meet this standard.

*C. A landscape plan drawn to scale that is consistent with the need for screening at the site. Existing vegetation that is to be removed must be clearly indicated and provisions for mitigation included where appropriate.*

APPLICANT RESPONSE: The facility is proposed without landscaping as there is no need for screening at the site. The site is an existing gravel area and no vegetation will be removed to build the project. The base of the facility including the equipment area is an extreme distance from any public views or adjacent incompatible land uses.... The outdoor equipment is designed to be totally within a sight obscuring equipment shelter and the equipment area is not visible to any offsite properties due to distance and presence of mature native vegetation and or existing buildings (the high school). The property owner – Warrenton School District, also prefers no landscaping so as to maximize space for parking and sports field areas, and so as not to create an undue maintenance burden.

Staff finding: The proposed monopole tower will replace an existing football field light standard located on the boundary of a parking area and the field proper. The equipment shed will be screened by an opaque fence. Although there is limited room to landscape without impacting the football field or abutting driveway to the rear of the school, there are cost effective methods for additional screening to reduce the industrial nature of the impact. The Commission needs to determine whether this standard applies in a public setting.

*D. A feasibility study for the collocation of telecommunication facilities as an alternative to new structures, in conformance with Section 16.148.060. The feasibility study shall include:*

- 1. An inventory, including the location, ownership, height, and design of existing WCFs within one-half mile of the proposed location of a new WCF. The Community Development Director may share such information with other applicants seeking permits for WCFs, but shall not, by sharing such information, in any represent or warrant that such sites are available or suitable.*

APPLICANT RESPONSE: Not Applicable. There are no existing WCFs within ½ mile of the proposed facility. This was determined by field analysis and review of “Antenna Search” a tool that maps the location of existing WCFs. This material has been compiled and is documented in EXHIBIT F.

Staff finding: Staff concurs, although we note that two towers are located by the Warrenton Marina and the facility identified on Flight Line Drive is a Charter Communications facility, not a cell tower.

2. *If collocation is not feasible, documentation of the efforts that have been made to collocate on existing or previously approved towers. Each applicant shall make a good faith effort to contact the owner(s) of all existing or approved towers and shall provide a list of all owners contacted in the area, including the date, form and content of such contact.*

APPLICANT RESPONSE: The 2 closest existing WCF towers outside of the ½ mile radius are shown in Exhibit F. The 2 closest existing WCF towers are well outside of the ½ mile radius to the northeast. As noted in EXHIBIT F, the nearest facility to the northeast is a SBA owned tower approximately 1.48 miles located at 113 NE Iredale Avenue in Warrenton. The next nearest facility also to toward the northeast is an AT&T CCI tower located at 825 NE 1st Ct in Warrenton. The tower is approximately 1.51 miles distant from the proposed Verizon Fort Stevens facility. Both of these are outside of the ½ mile search area and impossible to locate the proposed facilities on an EXISTING facility as would cause interference and would not achieve coverage objective. to south is CAMP RILEA located at 91355 Highway 101- over 1.85 miles away. Collocation on an existing tower is not viable.

Staff finding: Staff concurs.

3. *Documentation as to why collocation on existing or proposed towers or location on an existing tall structure within one-half mile of the proposed site is not practical or feasible. Collocation shall not be precluded simply because a reasonable fee for shared use is charged or because of reasonable costs necessary to adapt the existing and proposed uses to a shared tower. The Community Development Director and/or Planning Commission may consider expert testimony to determine whether the fee and costs are reasonable. Collocation costs exceeding new tower development are presumed to be unreasonable.*

APPLICANT RESPONSE: There are no existing other tall structures within the area available for collocation at a height required to achieve the coverage objective.

Staff finding: Staff is unaware of any other tall structures in the requisite 0.5 miles.

E. *A report containing the following information:*

1. *A report from a licensed professional engineer documenting the following:*

- a. *A description of the proposed tower height and design, including technical, engineering, and other pertinent factors governing selection of the proposed design. A cross-section of the proposed tower structure shall be included. If proposed tower is intended to accommodate future collocation, the engineer shall document that the design is sufficient for that purpose. If the proposed tower is not intended to allow for future collocation, the engineer shall provide an explanation why it is not so intended.*
- b. *The total anticipated capacity of the tower in terms of the number and types of antennae which can be accommodated. The engineer shall also describe any limitations on the ability of the tower to accommodate collocation. The engineer shall describe the technical options available to overcome those limitations and reasons why the technical options considered were not used.*
- c. *Documentation that the proposed tower will have sufficient structural integrity for the proposed uses at the proposed location, in conformance with the minimum safety requirements of the State Structural Specialty Code, latest adopted edition at the time of the application.*

APPLICANT RESPONSE: Attached EXHIBIT G – Tower Structural Report. The Oregon PE stamped report documents that the tower can accommodate a minimum of 2 additional antenna arrays by other users. The required documentation is included in the report, as the tower loading and the tower elevation show 2 future antenna arrays below the Verizon array.

Staff finding: Staff concurs that Exhibit G satisfies this criterion.

2. *A description of mitigation methods, which will be employed to avoid ice hazards, including increased setbacks, and/or deicing equipment.*

APPLICANT RESPONSE: The proposed tower is setback over 400 feet from any off site uses to avoid ice hazards. The area under the antennas will be wholly within the Verizon fenced, leased, secured area and will protect from any ice hazard.



Staff finding: *Staff concurs that the measures proposed are adequate to avoid ice hazards.*

*3. Documentation demonstrating compliance with nonionizing electromagnetic emissions standards as set forth by the Federal Communications Commission.*

APPLICANT RESPONSE: Included in attached NIER – EXHIBIT H.

Staff findings: The Thatcher report concludes that electronic emissions from the antennae array will well below federal standards.

*4. Evidence that the proposed tower will comply with all applicable requirements of the Federal Aviation Administration, the Aeronautics Section of the Oregon Department of Transportation, and the Federal Communications Commission.*

APPLICANT RESPONSE: Included in attached EXHIBITS I, J, & L. EXHIBIT I is the FAA Determination of No Hazard to Air Navigation” for the proposed facility; EXHIBIT J is the Oregon Department of Aviation’s compliance determination letter; and EXHIBIT L is a copy of Verizon Wirelesses Federal Communications Commission (FCC) License for this market allowing Verizon Wireless to operate at the proposed frequencies on this facility.

**Staff finding:** The applicant referenced documents satisfy this criterion.

*F. A description of anticipated maintenance needs, including frequency of service, personnel needs, equipment needs and potential safety impacts of such maintenance.*

APPLICANT RESPONSE: Maintenance program: Verizon personnel visit the site on a regular basis (approximately twice a month) to review the site for issues and check on antennas and equipment status. No specialized equipment is required, there would be minimal safety impacts associated with any maintenance. The functionality of the antennas and equipment can be monitored remotely if something goes “off-line” on an as needed basis and would be remedied in short order. No landscaping is proposed, therefore no maintenance of landscaping is required.

**Staff finding:** The applicant's response satisfies this criterion.

- G. *If a new tower is approved, the owner shall be required, as a condition of approval, to:*
1. *Record the conditions of approval specified by the City with the Deeds Records Office in the Office of the County Recorder of the county in which the tower site is located;*
  2. *Respond in a timely, comprehensive manner to a request for information from a potential shared use applicant;*
  3. *Negotiate in good faith for shared use by third parties; and*
  4. *Such conditions shall run with the land and be binding on subsequent purchasers of the tower site.*
- H. *The planning official may request any other information deemed necessary to fully evaluate and review the application and the potential impact of a proposed tower and/or antenna.*
- I. *A WCF conditional use permit application fee as established by resolution of the Warrenton City Commission.*

APPLICANT RESPONSE: Understood.

Staff finding: Acknowledged.

**16.148.070 Development Standards.**

All new WCFs shall comply with the following standards:

- A. *Tower Height. Freestanding WCFs shall be exempted from height limitations. This exemption notwithstanding, the height and mass of the transmission tower shall be the minimum, which is necessary for its intended use, as demonstrated in a report prepared by a licensed professional engineer.*

APPLICANT RESPONSE: Included in attached EXHIBIT M – RF Coverage Plots and Justification. The minimum tower and antenna height for this proposed Verizon facility is 104' AGL.

- B. *A WCF that is attached to an alternative tower structure may not exceed the height of the alternative tower structure, unless findings are made by the Planning Commission that such an increase will have a minimal impact on the appearance of*

*the structure.*

APPLICANT RESPONSE: N/A

Staff finding: We concur that this criterion is not applicable.

- C. *All applications for development of new WCFs, or proposals to modify existing WCFs shall contain written consents from the following agencies: the FAA, FCC, ODOT Aeronautics Division, and Port of Astoria. This list is not meant to be an exhaustive list; The applicant is responsible for assuring that all new development complies with all applicable local, state, and federal laws.*

RESPONSE: Included in attached EXHIBITS I, J, and K.

Staff finding: Staff notes that the exhibits above refer to non-objections from the FAA, ODOT Aeronautics Division and the Port of Astoria, and that a license has been issued by the FCC as Exhibit L. In addition, staff provided agency notice and no comments were received.

### **Conclusions & Recommendation**

The application and findings above demonstrate that the proposed monopole cell tower satisfies the applicable criteria of WMC 16.220.030 and 16.148.050. By conducting the public hearing on the application, the Planning Commission satisfies 16.208.050. The applicable agencies have not objected to the proposal. Therefore, staff recommends approval of CUP 18-1 submitted on behalf of Verizon Wireless, subject to the following conditions.

1. The Commission must determine if the landscaping standard has been met and if not, a specific mitigation to offset the impact due to the public setting. Screening can be achieved through fencing or landscape design features. For example, school related signage, such as the "ALL IN" motto, can be affixed to the fence that would obscure the structure and support the local school.

*Recommended Motion:* Based on the findings and conclusions of the February 7, 2019 staff report, the application and evidence in the record, and the applicant's testimony, I move to approve application CUP 19-1 submitted on behalf of Verizon Wireless.



MORRISON HERSHFIELD

December 18, 2018

Mr. Kevin Cronin  
City of Warrenton  
225 S Main Avenue  
Warrenton, OR 97146

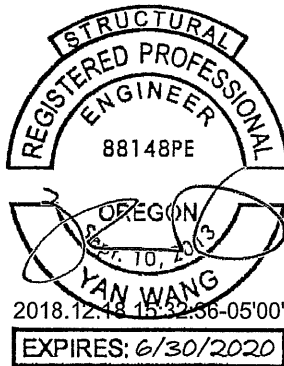
**Subject: Structural PE Letter for  
Verizon Proposed Equipment Upgrade  
Site: "OR1 Fort Stevens"  
1700 S Main Avenue, Warrenton, OR 97146  
MH Project No. 1900018.00**

Dear Mr. Cronin:

Per your meeting with the site acquisition consultant Konrad Hyle of Black Rock LLC, you stated the following: "For the compound for equipment, fencing and equipment shed roof – will need to demonstrate that will comply with Seismic D-2, Risk Category 3 and show evidence that the aforementioned structures will withstand the wind loads for the area".

While these items are not yet designed for the site, we will be designing them to be part of the CD package which will be submitted for the building permit process. The CD package will be accompanied by structural calculations and documentation that will confirm our compliance with the seismic and wind load requirements for the area.

Yours very truly,  
Morrison Hershfield



Yan Wang, P.E. (OR License No. 88148PE)  
Senior Engineer