CITY OF
MUKILTEO

REQUEST FOR COMMENTS

DATE: June 21, 2018

	Alderwood Water District – (Dan Sheil / Scott Smith)		Puget Sound Clean Air Agency (Beth Carper)
	Burlington Northern Santa Fe Railway (Marvinique Hill)	X	Puget Sound Energy (Dom Amor)
	City of Edmonds (Rob Chave)		Puget Sound Regional Council
	City of Everett (Allan Giffen)		Seattle Dist. Corps of Engineers (Dept. Army-Reg. Branch)
	City of Everett (Steve Ingalsbe)		Snohomish Co. Airport/Paine Field (A. Rardin/R. Zulauf)
	City of Lynnwood (Paul Krauss)		Snohomish Co. Assessor's Office ***(Ordinances Only)***
	City of Mill Creek (Tom Rogers)		Snohomish Co. Conservation District
X	City of Mukilteo (Building Official)		Snohomish Co. Environmental (Cheryl Sullivan)
X	City of Mukilteo (Fire Chief)		Snohomish Co. Fire District #1 (Kevin Zweber)
X	City of Mukilteo (Fire Marshal)		Snohomish Co. Marine Res. Comm. (Kathleen Herrmann)
X	City of Mukilteo (Engineering "In-Box")		Snohomish Co. Planning & Dev. Srvc. (Darryl Easton)
X	City of Mukilteo (Com. Dev. Dir.)**(Postcard/Notice only)**		Snohomish Co. Public Works (Shannon Flemming)
X	City of Mukilteo (Police, Cheol Kang, Myron Travis)	X	Snohomish Co. PUD: Dist. Eng. Services (Mary Wicklund)
X	Comcast of Washington (Casey Brown, John Warrick)		Snohomish Health District (Bruce A. Straughn)
	Community Transit (Kate Tourtellot)		Sound Transit Authority (Perry Weinberg)
	Dept. of Commerce (Growth Mgmt. Svcs Rev. Team)	X	Tulalip Tribes – (Zachary Lamebull)
	Dept. of Natural Resources (James Taylor)	X	Tulalip Tribes – (Richard Young)
	FAA/Air Traffic Division, ANM-0520 (Daniel Shoemaker)	X	United States Postal Service (Soon H. Kim)
	FEMA (John Graves)	X	Verizon Company of the NW, Inc. (Tim Rennick.)
	Island County MRC (Rex Porter) *(Shoreline Only)*		Washington Dept. of Ecology (Peg Plummer)
	Master Builders King/Sno. Counties (Mike Pattison)		Washington Dept of Fish & Wildlife (Jamie Bails)
X	Mukilteo Beacon (Editor) **(Postcard/Notice only)**	X	WSDOT (Scott Rodman)
X	Mukilteo School District (Cindy Steigerwald)	X	WSDOT (Ramin Pazooki)
X	Mukilteo School District (Josette Fisher)		WSDOT Ferries(Kojo Fordjour) *(Shoreline Only)*
X	Mukilteo Tribune (Editor) **(Postcard/Notice only)**		WRIA 7 Water Resources
X	Mukilteo Water & Wastewater District (Jim Voetberg, Manager; Rick Matthews; Kendra Chapman)	X	Planning Commission ***(Postcard Only)***
	National Marine Fishery Service		Adjacent Property Owners
X	Office of Archaeology & Historic Pres. (Allyson Brooks)	X	Applicant/Contact Person ***(Notice Only)***
	Ogden, Murphy, Wallace (Angela Summerfield) ***(Ordinances Only)***	X	Parties of Interest
	Pilchuck Audubon Society (President)	X	Parties of Record
	Port of Everett (Graham Anderson)	X	Property Owners within 300' ***(Postcard/Notice Only)***
			Other:

FILE NO.: WCF 2018-002

PROPONENT: Madeline Chaney of Camp & Associates representing Verizon on behalf of Thomas Hale, LLC

PROJECT NAME: Verizon Wireless Communication Facility

PROJECT DESCRIPTION: Installation of two small antennas, which will be mounted behind a rooftop screen on the northerly part of the Arnie's Restaurant rooftop. Radio support equipment at ground level will be screened by a wood fence.

FILE NO.: WCF 2018-002

PROPONENT: Madeline Chaney of Camp & Associates representing Verizon on behalf of Thomas Hale, LLC

PROJECT NAME: Verizon Wireless Communication Facility

ATTACHED IS:

X	Notice of Application	X	Building Elevations
X	Location Map	X	Non-Ionizing Electromagnetic Radiation Report
X	Application	X	Geotechnical Recommendations
X	Narrative Statement(s)	X	RF engineer's affidavit
X	Site Plan (Reduced)	X	Plan Set
X	Photo Simulations		

NOTE: _____

_____

****

Please review this project as it relates to your area of concern and return your comments with this cover sheet by, Monday, July 9, 2018 to Linda Ritter, Senior Planner, City of Mukilteo, 11930 Cyrus Way, Mukilteo, WA 98275.

Linda Ritter — 6/21/18

Linda Ritter
Senior Planner

Date

****

RESPONSE SECTION:

_____ Comments Attached _____ No Comments

COMMENTS: _____

_____

_____ _____

Signature Date

_____

Company

DO YOU WANT A COPY OF OUR NOTICE OF DECISION YES __ NO __

O:\Dev Review\2018\WIRELESS COMMUNICATION FACILITY\WCF-2018-002 714 2nd Street - Verizon\Noticing\NOA\Verizon Request for Comments.docx

CITY OF
MUKILTEO

11930 Cyrus Way
Mukilteo, WA 98275
(425) 263-8000

Notice of Application
for Verizon Wireless Communication Facility at 714 2nd Street by Madeline Chaney representing Verizon on behalf of Thomas Hale, LLC

Madeline Chaney of Camp & Associates representing Verizon on the behalf of **Thomas Hale, LLC** applied for a Wireless Communication Facility permit with the City of Mukilteo on June 1, 2018. The application became complete on June 18, 2018. This application and all supporting documents are available at City Hall for public viewing. (File No. WCF 2018-002).

Description of Proposal: The installation of two small (24" x 16") antennas, which will be mounted behind a rooftop screen on the northerly part of the Arnie's Restaurant rooftop. The screening material will be fabricated to have an appearance similar to the existing siding on Arnie's, and will be painted to match Arnie's new color scheme (body color is SW 6115 Totally Tan, trim is SW 6112 Biscuit). Radio support equipment, consisting of a small equipment cabinet and remote radio units (RRUS), will be situated on a new ground-mounted grate assembly on the slope immediately north of the stairway that leads to the outdoor deck at Arnie's. The base station equipment will be screened by a wood fence painted SW 2811 Rookwood Blue Green to match the existing deck skirt.

The antennas would be positioned to cover the existing ferry queuing area immediately north of Arnie's and in a northeasterly orientation to provide coverage to the future ferry queuing area. Providing coverage to customers awaiting ferry service, along with call traffic in this area, has dictated the need for the proposed site.

Location of Proposal: Section 4 Township 28 Range 4 Quarter NE FOWLERS ADD TO MUKILTEO BLK 002 D-00 - COMB FOR TAX PURP ONLY PER COM DEPT REQ & OWNER APPROVAL - LOTS 4., 5 & 6 LESS GN R/W & LESS TH PTN LOT 6 CONVYD TOST OF WA PER AF 674157 TGW LOT 2 FREDRICKSONS ADD TO MUKILTEO BLK 2 EXC TH PTN CONVYD TO SEATTLE & MONTANA RR CO & ALSO TGW LOT 10 BLK 2 THOMAS ADD TO MUKILTEO; otherwise known as 714 2nd Street, Mukilteo, Washington.

Environmental Documents Prepared for the Proposal:

- Geotechnical Recommendations for the Equipment Pad Support prepared by ABPB Consulting dated January 15, 2018
- Non-Ionizing Electromagnetic Radiation Report prepared by B.J. Thomas dated May 25, 2018.

List of Required Permits:

- Wireless Communication Facility
- Building Permit
- Any State and Federal Permits if applicable

Applicable Policies and Requirements

The project will be reviewed for consistency with the following policies, standards and regulations:

☐ Possession Shores Master Plan
☒ Comprehensive Plan, Shoreline Master Plan
☒ International Building Code (2015 Edition)
☒ International Fire Code (2015 Edition)
☐ Sector Plan & Amendments
☒ Mukilteo Municipal Code
☒ City of Mukilteo Development Standards

Comment Period

The application and supporting documents are available for review at the City of Mukilteo, 11930 Cyrus Way, Mukilteo, WA 98275. Contact: Linda Ritter, Senior Planner at (425) 263-8043. The public is invited to comment on the project by submitting written comments to the Planning Department at the above address by 4:30 p.m. on the date noted below.

Notice of Application Issued: Monday, June 25, 2018

End of Comment Period: Monday, July 9, 2018

The City will not act on this application until the end of the 14-day public comment period. Upon completion of project review the proposed application will be administratively approved, approved with conditions, or denied. You may request a copy of the final decision on the project by making a written request to the City contact person named below.

Public Hearing

There will not be a public hearing conducted on this project.

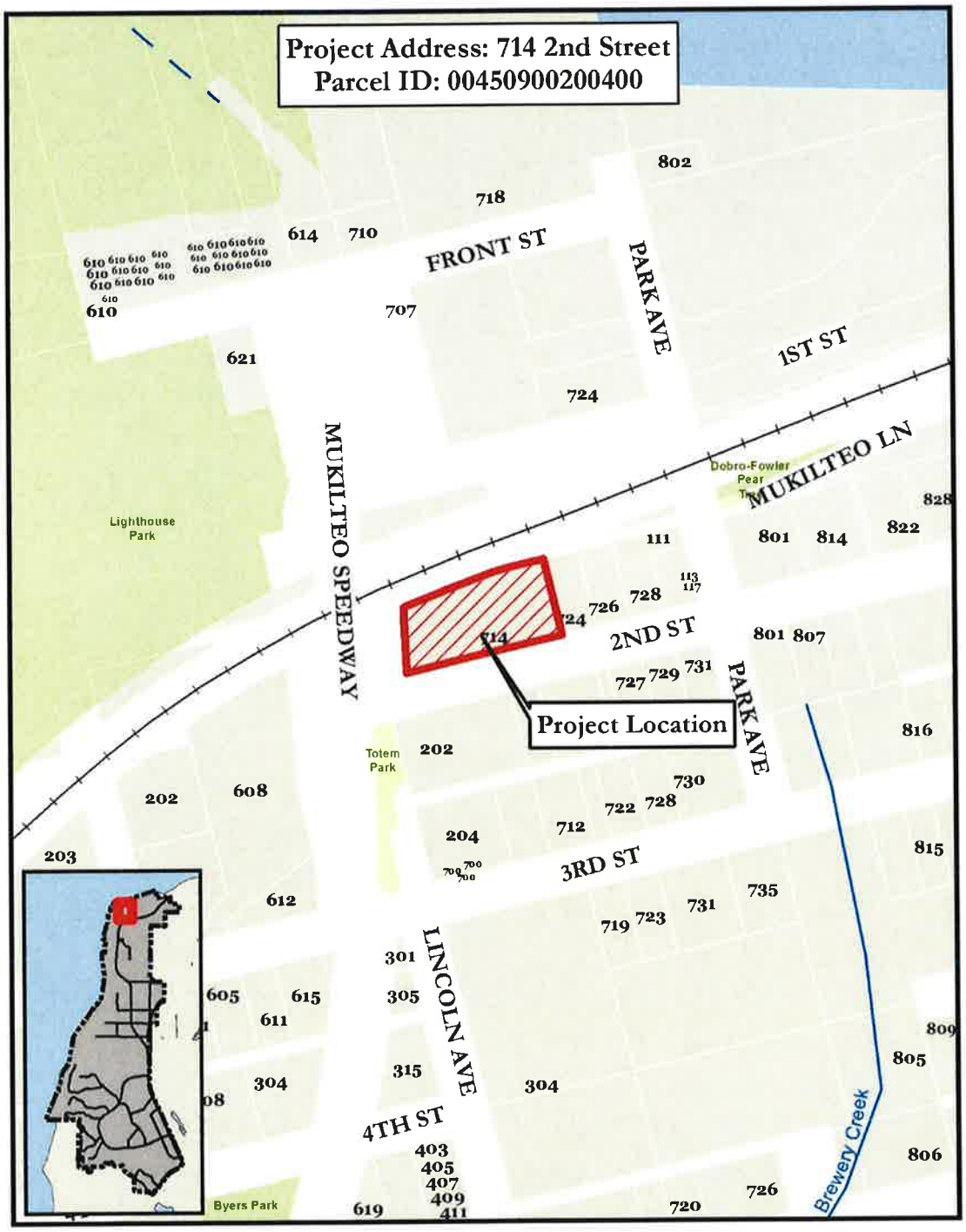
Appeals

The final decision on this project is administratively appealable. An appeal must be filed within 14 days after the final decision on the project is issued. Only persons who file written comments on the project in response to the Notice of Application are considered parties of record who may appeal the decision. If you do not file written comments within the comment period, you may not appeal the final decision.

Contact Person: Linda Ritter, Senior Planner (425) 263-8043

Signature: Linda Ritter Date: 6/21/18

Linda Ritter, Senior Planner



Location Map

Date Issued: Monday, June 25, 2018
Date Advertised: Monday, June 25, 2018
End Comment Period: Monday, July 9, 2018

pc: Applicant/Representative
Reviewing Agencies
Interested Parties

CDD Director
Permit Services Supervisor
Permit Services Assistants (2)

Property File
Property Owner 300'

WCF-2018-002

CITY OF MUKILTEO

11930 Cyrus Way Mukilteo, WA 98275
(425) 263-8000
Fax (425) 212-2068

Date stamp
RECEIVED
JUN 01 2018
CITY OF MUKILTEO

PPR # _____
SEPA # _____
Misc # _____

Verizon Land Use Permit Application

Applicant:	Madeline Chaney, Camp+ Associates	Owner:	Thomas & Hale, LLC
Address:	19401 40th Ave West, Suite 304	Address:	727 2nd St. Apt C
	Lynnwood, WA 98036		Mukilteo, WA.98275
Phone:	425-346-0128	Phone:	425-501-0003

Project Address: 714 2nd St., Mukilteo, WA 98275

Legal Description of Property: See attached

Key Contact Person: Madeline Chaney Phone: 425-346-0128

Fax: _____

Project Type:

- ☐ Commercial
- ☐ Multi-Family
- ☐ Industrial
- ☐ Shoreline* (JARPA)
- ☐ Conditional Use*
- ☐ Variance*
- ☐ Preliminary Subdivision*
- ☐ Final Subdivision*
- ☐ Preliminary Short Plat*
- ☐ Final Short Plat*
- ☐ Sector Plan Amendment
- ☐ Waterfront Development
- ☐ Single Family Residence
- ☐ Special Use Permit*
- ☐ Reasonable Use
- ☐ Lot Line Adjustment*
- ☐ Grading*
- ☐ Binding Site Plan
- ☐ Project Rezone
- X Other, Specify WCF

* Need to fill out supplemental application form with project.

Project Resume:

Existing Use: Restaurant

Proposed Use: WCF on restaurant roof

Total Site Area: 64 sq ft. enclosure

Landscaping Area: N/A

Building Foot Print Area: N/A

Water District: N/A unmanned

Lot Coverage: No change

Sewer District: N/A unmanned

Parking Provided: No change

# of Proposed Units: NA unmanned WCF

Building Height: existing-22'

Comp Plan Designation: Downtown

Gross Floor Area by Uses: No change

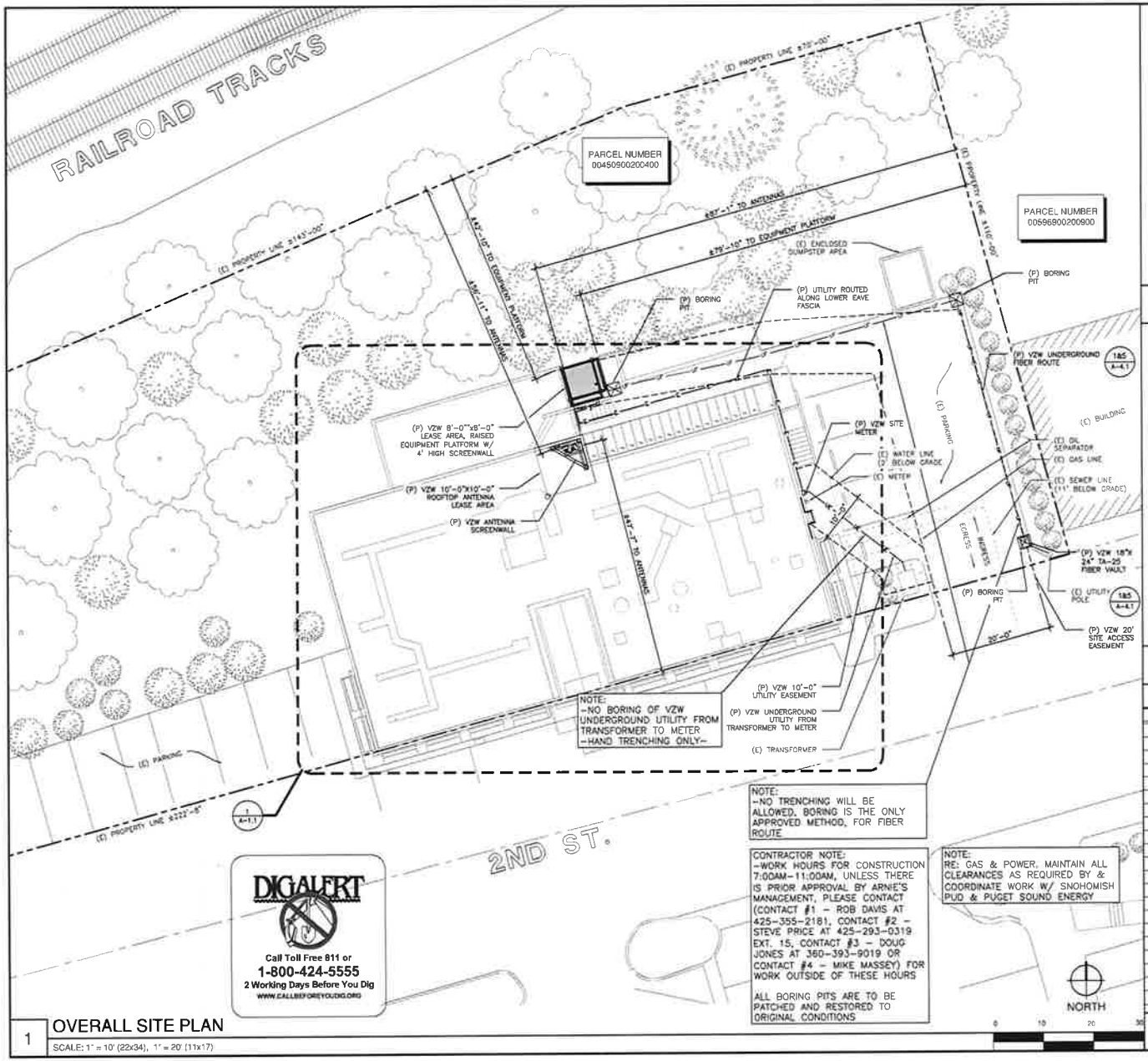
Zoning: DB-Downtown Business

Pre-application Meeting Held: (Y/N; date) N/A

The information given is said to be true under the penalty of perjury by the laws of the State of Washington.

Madel S obo Verizon Wireless — 5/31/18
Applicant/Authorized Agent Signature **Date**

LLC manager — 5/10/18
Owners Signature **Date**



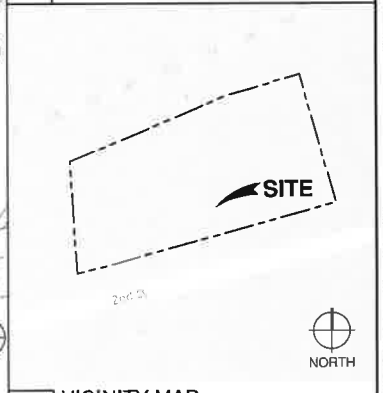
1 OVERALL SITE PLAN

SCALE: 1" = 10' (22x34), 1" = 20' (11x17)

LEGAL DESCRIPTION:

SECTION 4 TOWNSHIP 28 RANGE 4 QUARTER NE FOWLERS ADD TO MUKILTEO BLK 002 D--00 -- COMB FOR TAX PURP ONLY PER COM DEPT REQ & OWNER APPROVAL -- LOTS 4, 5 & 6 LESS GN R/W & LESS TH PTN LOT 6 CONVYD TOST OF WA PER AF 674157 TGW LOT 2 FREDRICKSONS ADD TO MUKILTEO BLK 2 EXC TH PTN CONVYD TO SEATTLE & MONTANA RR CO & ALSO TGW LOT 10 BLK 2 THOMAS ADD TO MUKILTEO

2 LEGAL DESCRIPTION



3 VICINITY MAP

LEGEND

EXISTING		NEW
	SANITARY SEWER	SAS
	STORM SEWER	STS
	WATER MAIN	W
	SANITARY MANHOLE ELEVATIONS	
	STORM STRUCTURE ELEVATIONS	
	PROPERTY LINE & R.O.W.	
	SURFACE DRAINAGE	
	LIGHT STANDARD	
	STREET LIGHT	
	SPOT ELEVATION	
	CONTOUR	
	GAS MAIN	G
	MANHOLE	
	CATCH BASIN	
	FIRE HYDRANT	
	EASEMENT LINE	
	FENCE	
	BURIED UTILITY	UE/UT
	UTILITY POLE	
	OVERHEAD UTILITY LINE	OE/OT
	BUILDING	

4 LEGEND

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

CAMP+ ASSOCIATES
19401 40TH AVE. W., SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-8302
FAX: (425) 224-1614
WWW.CAMPASSOC.COM

PROJECT MANAGER:	EJC
PREPARED BY:	WJA
APPROVED BY:	EJC

WJA	5/24/18 ISSUED FOR PRELIM REVIEW
WJA	5/8/18 ISSUED FOR PRELIM REVIEW
WJA	4/16/18 ISSUED FOR PRELIM REVIEW
WJA	4/13/18 ISSUED FOR PRELIM REVIEW
WJA	3/30/18 ISSUED FOR PRELIM REVIEW

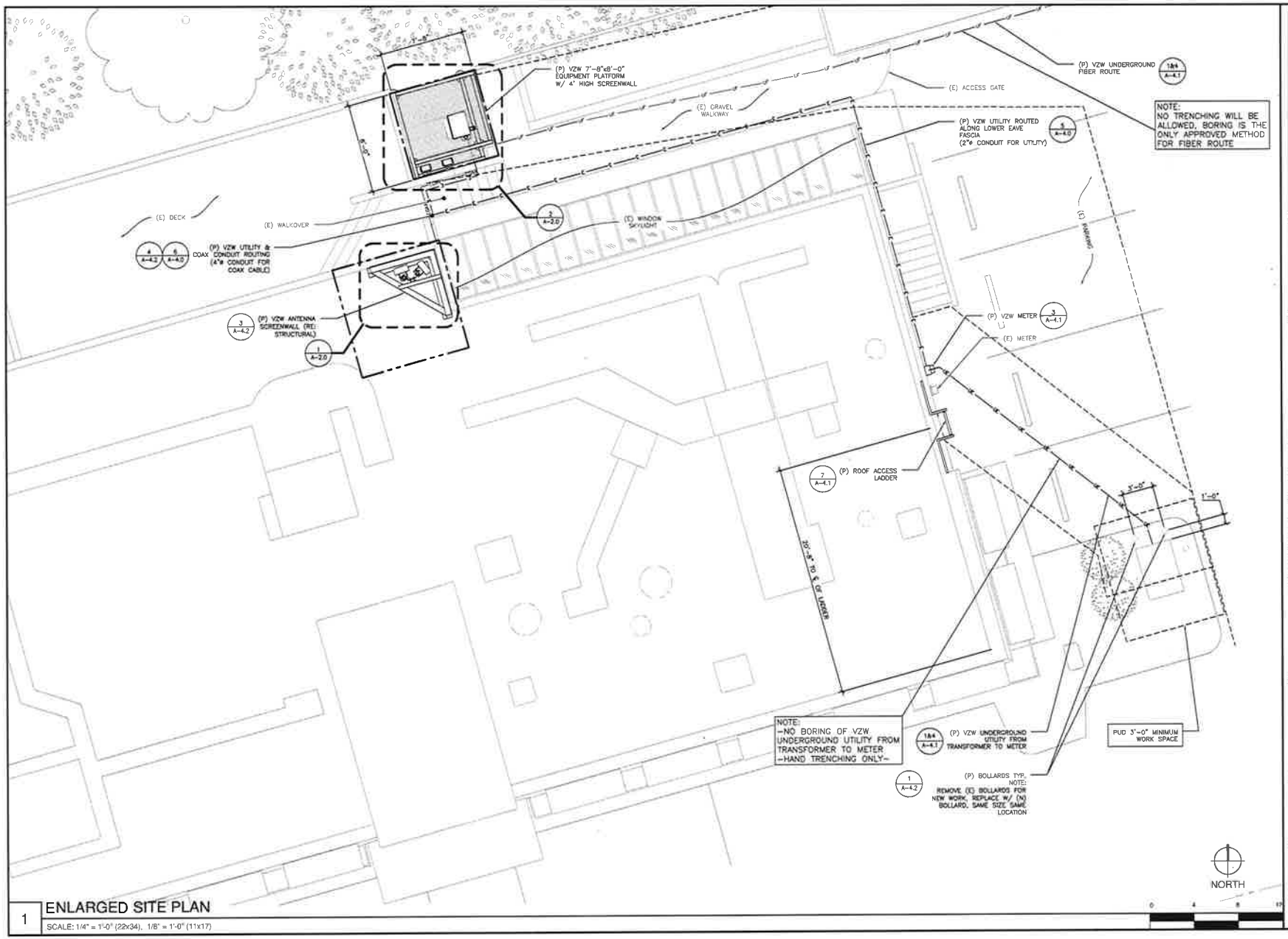
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
OVERALL SITE PLAN

SHEET NUMBER
A-1.0

PROJECT NUMBER
20171573545



1 ENLARGED SITE PLAN

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

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
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WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

WJA	3/24/18	ISSUED FOR PRELIM REVIEW
WJA	3/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/16/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
ENLARGED SITE PLAN

SHEET NUMBER
A-1.1

PROJECT NUMBER
20171573545



TIM BRADLEY IMAGING

PHOTO SIM LOCATION MAP

CAMP+ ASSOCIATES

RECEIVED
JUN 01 2023
CITY OF MUKILTEO

SEA-POSEIDON

714 2ND STREET, MUKILTEO, WA

CAMP+
ASSOCIATES

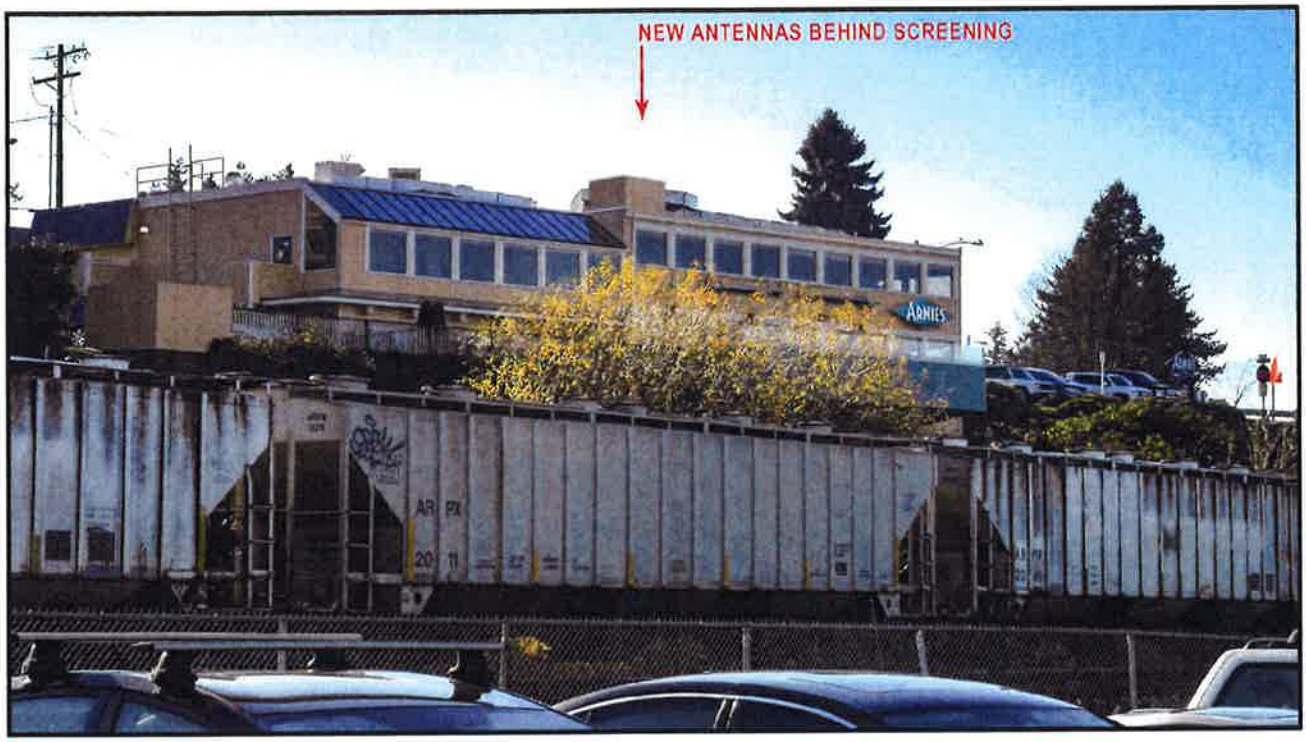
SEA-POSEIDON

714 2ND STREET, MUKILTEO, WA



CURRENT

VIEW #1 LOOKING SOUTH



PROPOSED

TIM BRADLEY IMAGING

CAMP+
ASSOCIATES

SEA-POSEIDON

714 2ND STREET, MUKILTEO, WA



CURRENT

VIEW #2 LOOKING NORTHEAST



PROPOSED

TIM BRADLEY IMAGING

CAMP+ ASSOCIATES

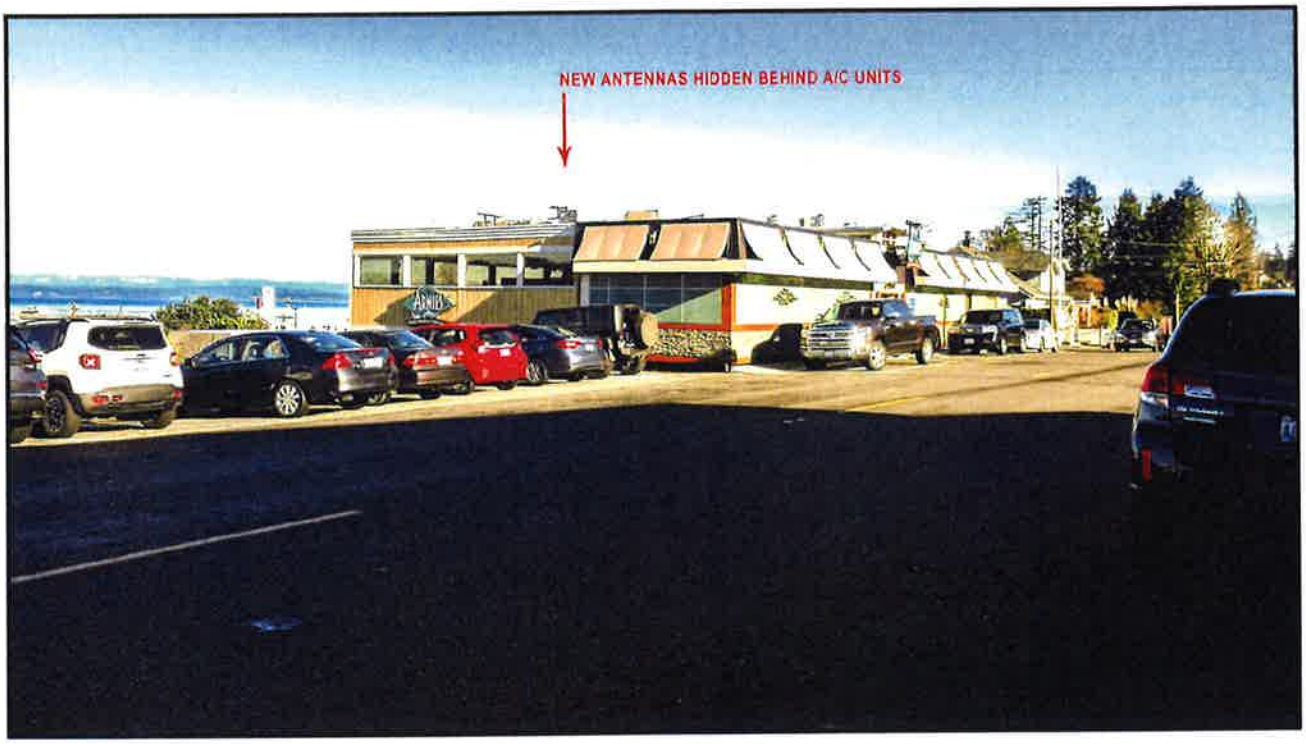
SEA-POSEIDON

714 2ND STREET, MUKILTEO, WA



CURRENT

VIEW #3 LOOKING NORTH



PROPOSED

TIM BRADLEY IMAGING

CAMP+
ASSOCIATES

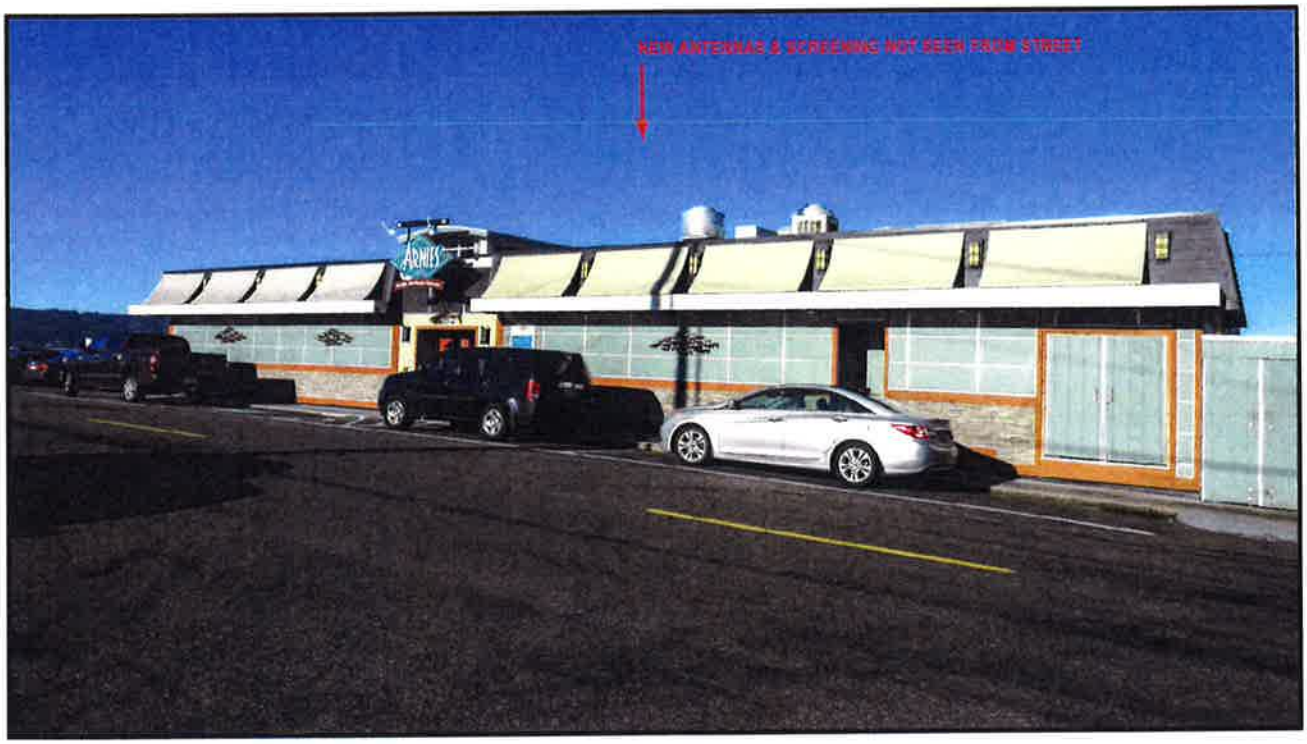
SEA-POSEIDON

714 2ND STREET, MUKILTEO, WA



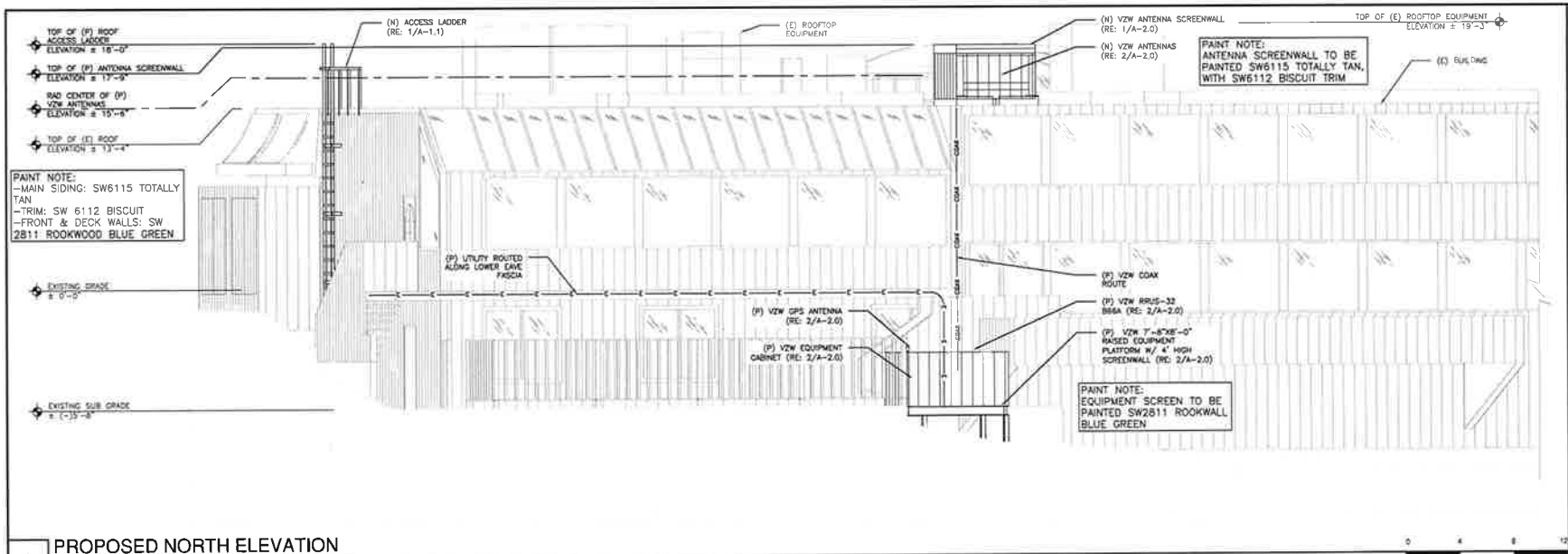
CURRENT

VIEW #4 LOOKING NORTHWEST



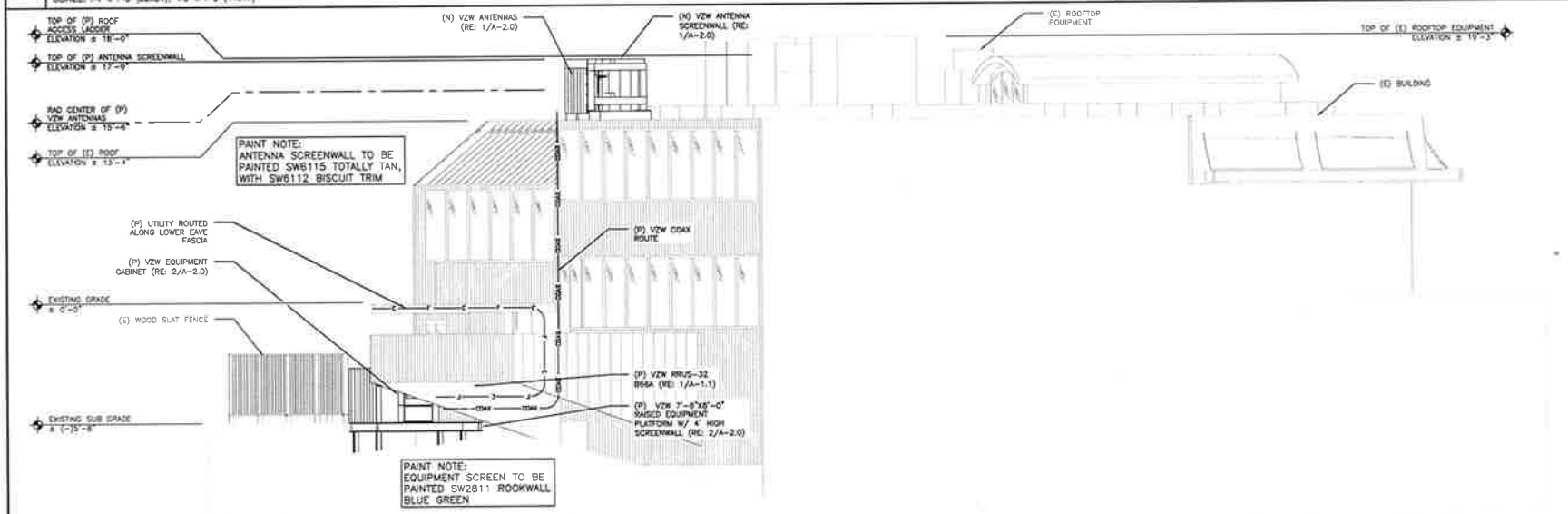
PROPOSED

TIM BRADLEY IMAGING



1 PROPOSED NORTH ELEVATION

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



2 PROPOSED WEST ELEVATION

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

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST,
MUKILTEO, WA 98275

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19401 40TH AVE. W., SUITE 304
LYNNWOOD, WA 98036
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WJA	3/30/18	ISSUED FOR PRELIM REVIEW

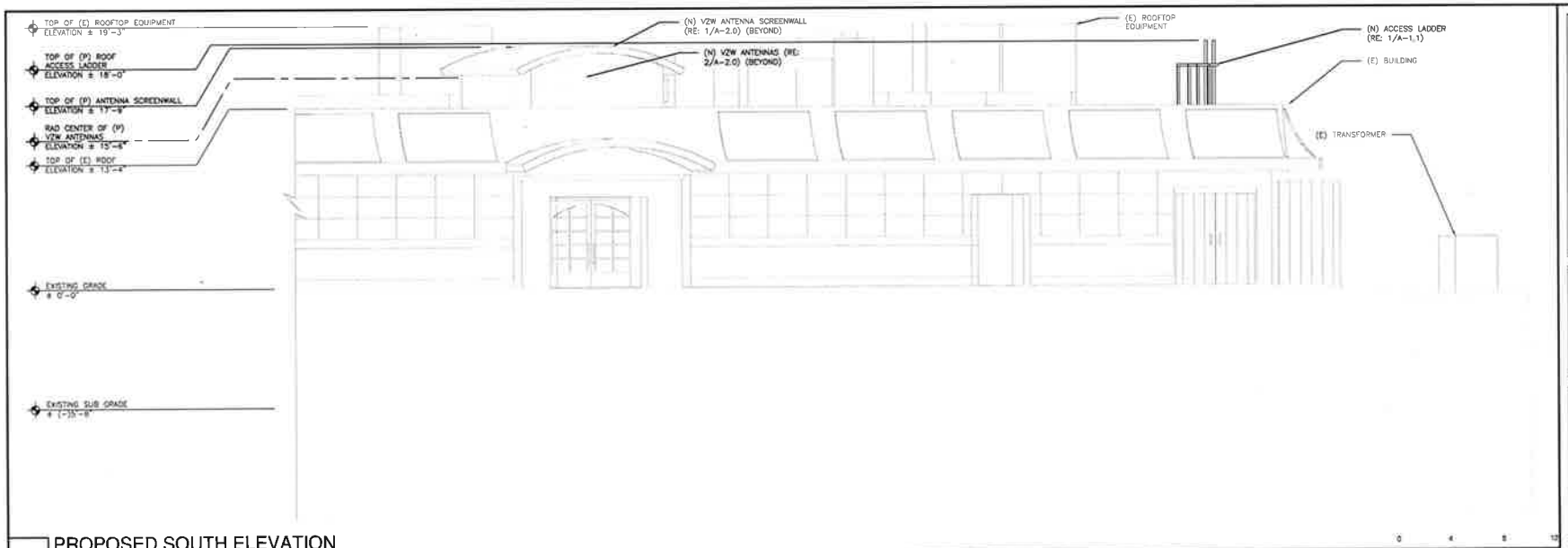
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
NORTH & WEST ELEVATIONS

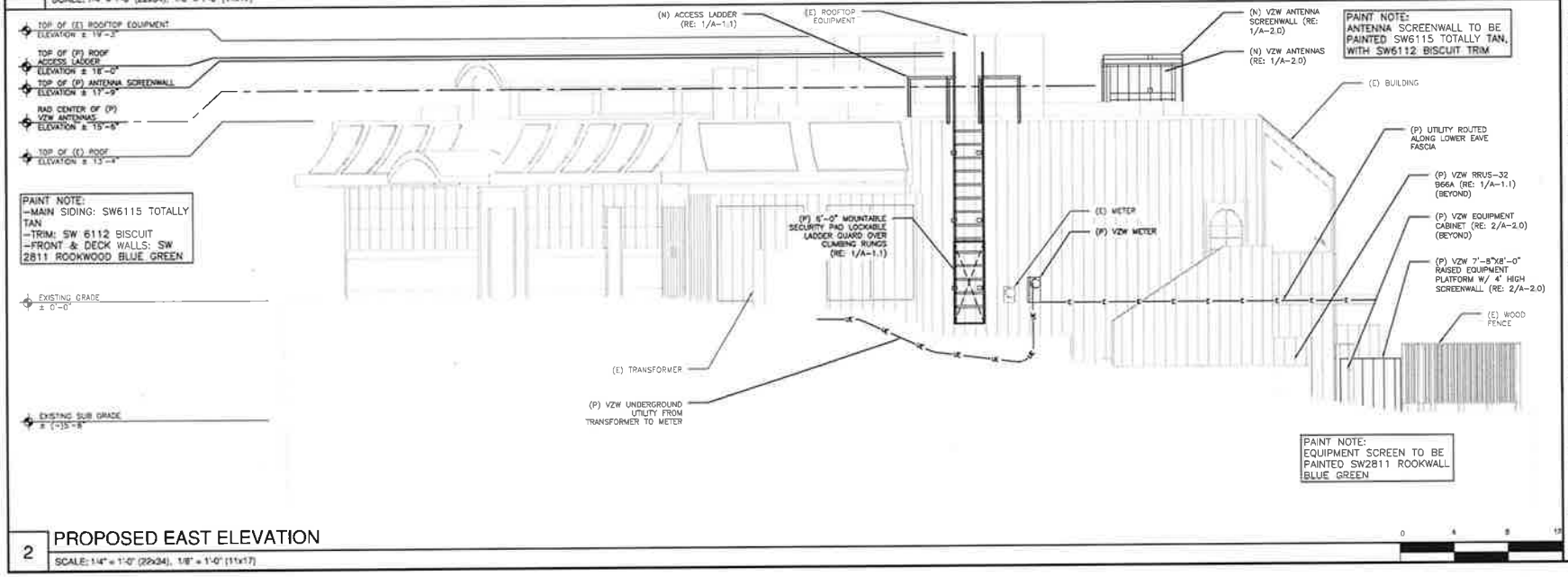
SHEET NUMBER
A-3.0

PROJECT NUMBER
20171573545



1 PROPOSED SOUTH ELEVATION

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



2 PROPOSED EAST ELEVATION

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

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

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PROJECT MANAGER: EJC

PREPARED BY: WJA

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
SOUTH & EAST ELEVATIONS

SHEET NUMBER
A-3.1

PROJECT NUMBER
20171573545

RECEIVED
JUN 01 2018
CITY OF MUKILTEO

verizon
Network Engineering
Verizon Wireless
3245 158th Ave SE
Bellevue, WA 98008

SEA Poseidon (Mukilteo Ferry) RF Documentation

Overview:

Verizon Wireless strives to provide excellent wireless service for our customers with a network of cell sites that allows our customers to reliably place and receive mobile phone calls and use mobile data. In this particular case, we are trying to provide and enhance coverage in the area near the Mukilteo Ferry Terminal.

The proposed site is a "small cell" site, having a very limited coverage area, confined mainly to the holding area for the Mukilteo to Clinton ferry. Accordingly, the site entails installation of two small (24" x 16") antennas, which will be mounted behind a rooftop screen on the northerly part of the Arnie's Restaurant rooftop. Radio support equipment, consisting of a small equipment cabinet and remote radio units (RRUS), will be situated on a new ground-mounted grate assembly immediately north of the stairway that leads to the outdoor deck at Arnie's. The base station equipment will be screened by a wood fence painted to match the existing deck skirt.

The antennas would be positioned to cover the existing ferry queuing area immediately north of Arnie's and in a northeasterly orientation to provide coverage to the future ferry queuing area. Providing coverage to customers awaiting ferry service, along with call traffic in this area, has dictated the need for the proposed site.

Coverage:

In order to provide excellent service to the ferry terminal, which Verizon Wireless defines as –85 dBm, the antenna height and site location needs to provide a line of sight to the holding area. As noted above, two small antennas are being proposed, in order to provide the necessary radio frequencies supporting Verizon Wireless voice and data services. In addition, careful placement and orientation is necessary in order to "contain" the site so that it does not interfere with other Verizon Wireless sites. In this case, the antennas would be placed on a rooftop of a commercial building, approximately 450 feet south of the northernmost portion of the ferry holding area.

Propagation Maps:

There are several methods for determining where coverage gaps exist within a given network of wireless sites. One of these is through the use of propagation maps. The propagation map is a computer simulation of the strength of Verizon Wireless signals at a given height and location in the context of the network. Propagation maps are one tool for determining whether a proposed site will meet the coverage objective and what antenna height is needed to provide robust service for Verizon Wireless customers. The radio propagation tool is designed to take factors such as terrain and tree coverage into account, and is calibrated with drive test data so that it depicts a reliable estimate of coverage that would be provided by a proposed site.

The propagation maps that follow show three levels of service, designated as the following colors:

Green >= -75 dBm, a level of service adequate for providing reliable coverage inside a building

Yellow >= -85 dBm, a level of service adequate for providing reliable coverage outdoors or inside a car

Grey => -95 dBm, unreliable signal strength, may not be not capable of reliably making and holding a call

Exhibit 1A is a propagation map that shows the existing level of coverage in the proposed service area in the context of surrounding Verizon Wireless sites.

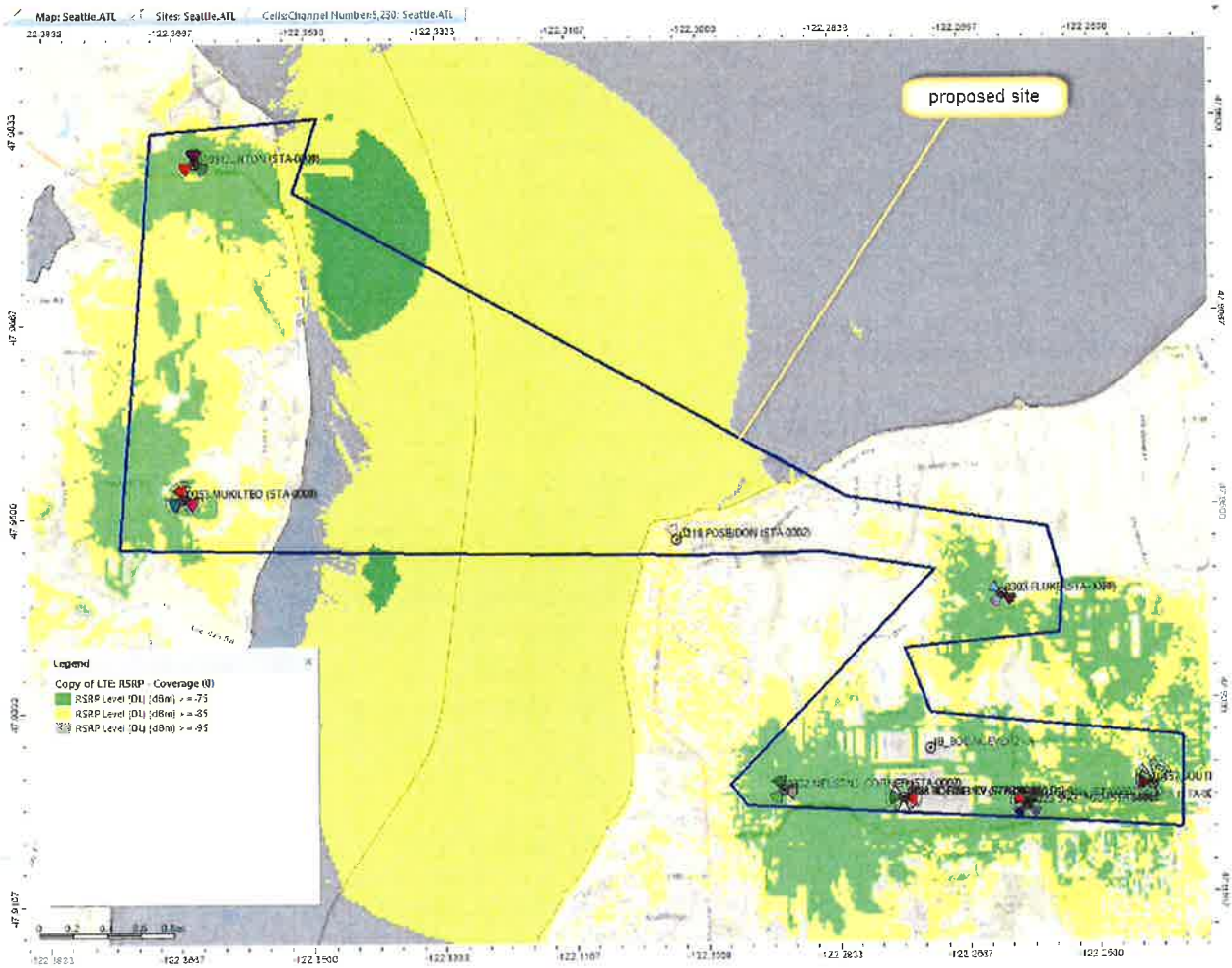
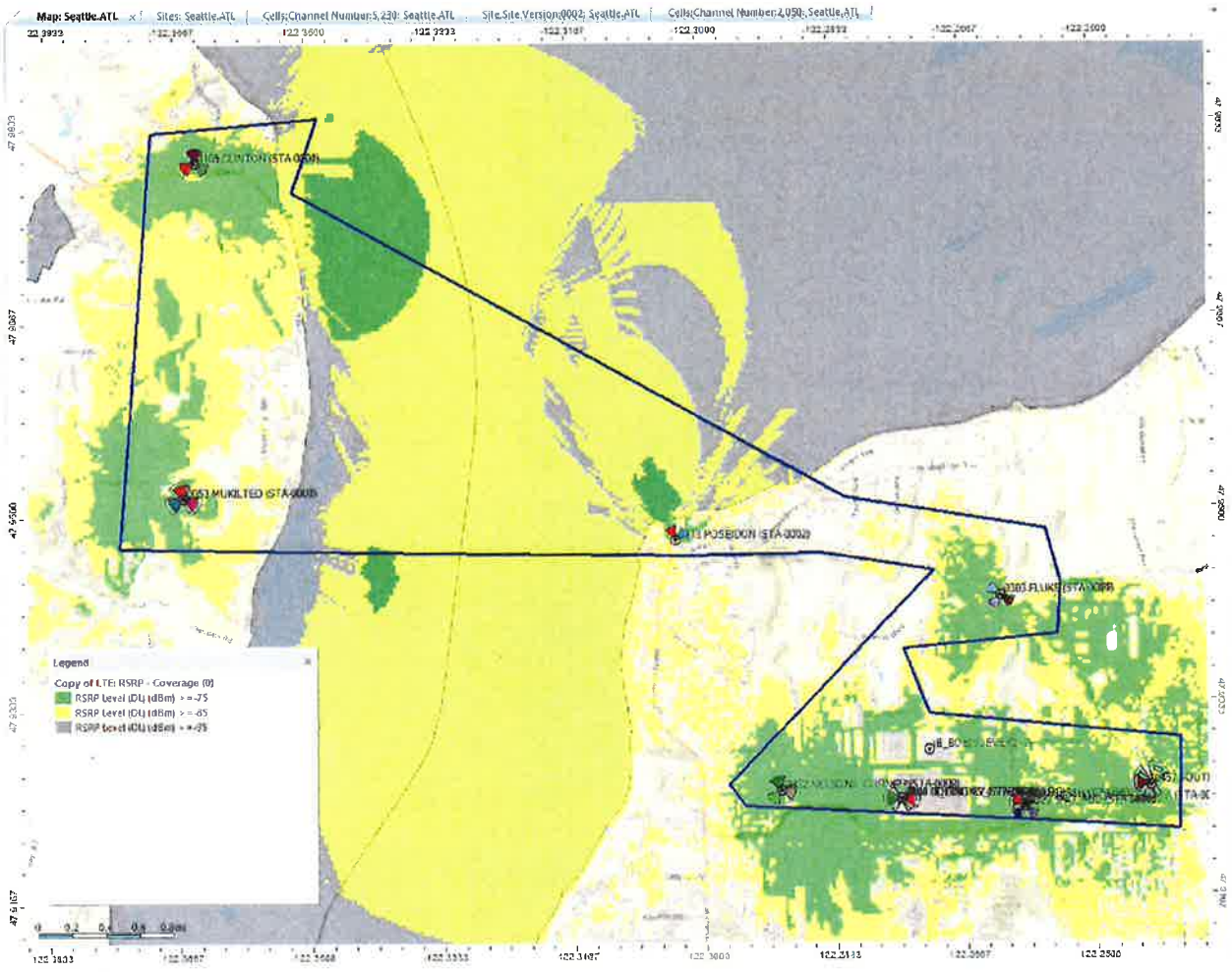


Exhibit 1B shows the level of service that would be provided with the proposed small cell WCF.



Capacity:

An additional function of some wireless sites is to provide additional capacity in an area. The capacity of wireless networks is limited by the number of available antennas and the radios associated with those antennas. When a mobile user attempts to make a call on a wireless network where capacity is limited by these factors, the resulting busy signal can be very frustrating. To remedy capacity issues, additional antenna sites are added to an area to provide additional calling capacity for Verizon Wireless customers. As noted previously, this site is specifically designed to serve Verizon Wireless customers in the ferry holding area.

Wireless E- 911

Approximately 400,000 Wireless 911 calls are made every day nationwide, and this number continues to increase. (source: CTIA, the Wireless Association) Wireless E-911 service depends on reliable signal strength and a fairly dense network of antenna sites in order to function effectively. Because of our federally-mandated obligation to provide wireless E-911 service, signal reliability is paramount. The proposed site will reinforce the Verizon Wireless network in this area and enhance E-911 service.

Summary:

In summary, the proposed small cell antenna at a height of 17' 9" (to top of screen walls) would meet the very limited coverage objective of the subject site. The height of the proposed antennas, and the two 24" x 16" antennas and ground-mounted equipment area are the minimum required for the effective functioning of the proposed wireless communication facility.

Sincerely,

Renald Gasparovic

Renald Gasparovic
Verizon Wireless
Pacific NW
System Performance

RECEIVED
JUN 01 2018
CITY OF MUKILTEO

ABPB CONSULTING

GEOTECHNICAL / EARTH SCIENCES

PAUL BONIFACI, P.E.G.
ANIL BUTAIL, P.E.

11251 – 120th Ave, Ste 209
P.O. Box 3239
Kirkland, WA 98083
425-820-2544

January 15, 2018
Project No. 1469

Mr. Eric Camp
Camp and Associates
19401 – 40th Ave. W. Suite 304
Lynnwood, WA 98036

RECEIVED
JAN 18 2018
BY:

Subject: Geotechnical Recommendations for Equipment Pad Support
SEA-Poseidon / Arnie's Restaurant
714 – 2nd Street
Mukilteo, Washington

Dear Mr. Camp:

As requested, we have reviewed the existing conditions at the proposed SEA-Poseidon equipment cabinet location behind Arnie's Restaurant in Mukilteo, Washington. In addition, a shallow probe hole was excavated at the pad site, as well as a review of the geologic maps for the area. Following our review, we are providing recommendations for support of the equipment pad of the VZW site at the restaurant.

Site Conditions

The new surface equipment pad area for the Poseidon site is in the rear northern side of Arnie's Restaurant in downtown Mukilteo, Washington. The site lies on top of an embankment slope descending northward down to the railroad tracks below.

The slope is covered with brush and small trees. The north side of the restaurant includes a wooden outdoor deck on the west side and a gravel covered terrace and walkway to the east. The pad will be constructed on an existing soil area located below the stairs connecting the deck and the terrace.

The new equipment pad will support the Small Cell Charles Cabinet as shown on the most recent site plan dated January 3, 2018. The pad measures several feet square and is planned to be supported with small diameter pin piles. These pin piles are a cost-effective method of support based on the top-of-slope location of the equipment pad and the fill soils which are anticipated to underly the site. Pin piles have been used previously to support portions of the gravel covered terrace edge.

Anticipated Soil Conditions

Based on our observations of the site and the probe hole excavation, it is our opinion that the site location is underlain by some uncontrolled fills placed outward from the original building excavation and construction. We anticipate that the fills will be relatively shallow and overlie the dense native soils present under the slope down to the railroad tracks. The *Preliminary Geologic Map of the Mukilteo Quadrangle* (1976) indicates that the downtown, as well as site area, is underlain by dense glacial till soils. These till materials were deposited about 12,000 years ago during the last glacial advance over the area. The till was subsequently over-ridden and consolidated by the weight of glacial ice to its present dense condition.

Foundation Support Recommendations:

Based on our field observations, it is our opinion that the old variable depth fill will not provide uniform support for the new pad over the long term at the top – of – slope. We understand that small diameter pin piles will be used and are an appropriate means to carry the loads to the deeper bearing soils and provide foundation support for the cabinet pad. Similar hand driven pipe piles are already located nearby holding up the timbered terrace edge.

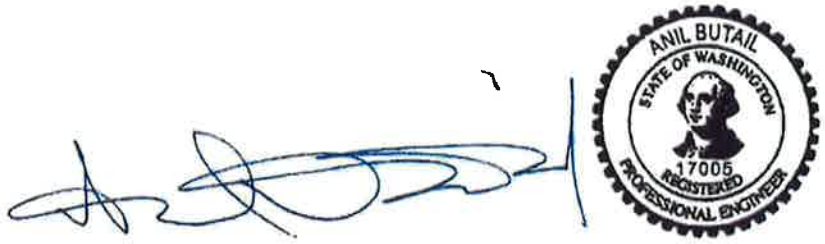
These pin piles may be installed under the new pad area at the locations shown on a foundation plan. The pin piles will be driven through the fills and down into the native soils.

Two-inch diameter pin piles should be designed to have an allowable axial capacity of 4 kips per pile and be driven to "refusal" into the native soils. "Refusal" using hand equipment with a 140# hammer would be one inch of penetration for the final one inch of driving. We anticipate that pile depths might be in the range of five to ten feet. It should be noted that some obstructions, large rocks or debris might be encountered during the driving of the piles and they might have to be moved slightly.

Lateral loads for these piles maybe taken as 0.25 kips per pile. If additional lateral load capacity is needed, batter piles may be used.

We trust this brief review of our findings is sufficient for your needs at this time. Please call if you have any questions.

Paul K. Bonifaci
Project Engineering Geologist



Anil Butail, P.E.
Principal Engineer

RECEIVED
JUN 0 1 2018
CITY OF MUKILTEO

NON-IONIZING ELECTROMAGNETIC EXPOSURE ANALYSIS
&
ENGINEERING CERTIFICATION

verizon

SITE NAME: SEA Poseidon

SITE ADDRESS: 714 2nd Street
Mukilteo, WA 98275

DATE: May 25, 2018

PREPARED BY:

B. J. THOMAS, P.E.
7607 80th Avenue NE
Marysville, WA 98270
(206) 851-1106

PROJECT

The proposed Verizon Wireless project consists of a WCF (Wireless Communications Facility) located at 714 2nd Street, Mukilte0, WA 98275, Snohomish County Tax Parcel 00450900200400. The planned improvements include (2) new panel antennas on an existing building rooftop with supporting BTS (Base Transmission System) radio equipment located at ground level.

EQUIPMENT

Type of Service: Cellular, LTE, AWS & PCS

Antennas: Amphenol HTXCWW4513Fxy0

Sectors: (2) (alpha = 340°, beta = 50°)

Antenna Rad Center: 17'- 9" AGL

CALCULATIONS

Calculations for RF power densities near ground level are based on the "**Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields OET Bulletin 65"** Edition 97-01, August 1997 issued by the Federal Communications Commission Office of Engineering & Technology.

Section 2 of **OET Bulletin 65** demonstrates that "for a truly worst-case prediction of power density at or near the surface, such as at ground-level or on a rooftop, 100% reflection of incoming radiation can be assumed, resulting in a potential doubling of predicted field strength and a four-fold increase in (far field equivalent) power density", therefore the following equation is used:

$$S = EIRP/\pi R^2$$

Where S = power density (mW/cm^2), EIRP = equivalent isotropically radiated power and R = distance to the center of the radiation antenna (cm)

Attached as an exhibit are the MPE (Maximum Permissible Exposure) calculations using the above referenced formula and the antenna manufacturer vertical pattern information using a conservative 20 dB loss below main lobe.

The calculations show that the maximum MPE at ground level (6' above AGL) at the base of the building and the power density is 0.081616 mW/cm^2 with an assumed worst-case power level of 2,000 watts ERP for the lowest antenna array. This is 17.477% of the MPE limit for the general population/uncontrolled

exposure of 0.467 mW/cm² as referenced in **Table I OET Bulletin 65 Appendix A** for the lowest frequency range.

ENVIRONMENTAL EVALUATION

Routine environmental evaluation is required if a PCS broadband facility with building mounted antennas has a total power of all channels in any given sector greater than 2,000W ERP as referenced in "**Table 2 Transmitters, Facilities and Operations Subject to Routine Environmental Evaluation" of Bulletin 65.** For the proposed facility, the total power in a given sector is less than 2,000W; therefore, the WCF is categorically exempt from requirement for routine environmental processing.

FCC COMPLIANCE

The general population/uncontrolled exposure near the rooftop, including persons at ground level, surrounding properties, inside and on existing structures will have RF exposure much lower than the "worst case" scenario, which is a small fraction of the MPE limit.

Only trained persons will be allowed to access the rooftop for maintenance operations. Verizon Wireless and/or its contractors will provide training to make the employees fully aware of the potential for RF exposure occupational training and they can exercise control over their exposure that is within the occupational/controlled limits.

CONCLUSIONS

Based on calculations, the proposed WCF will comply with current FCC and county guidelines for human exposure to radiofrequency electromagnetic fields.

All representations contained herein are true to the best of my knowledge.

EXHIBITS

- MPE Calculations
- Antenna Product Data Sheets
- WCF Location Map



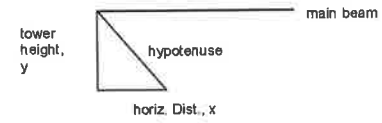
5/25/18

SEA Poseidon
MPE Calculations

Effective tower height assumes a person 6 ft tall.

17.75	height (ft)

8.16E-02	
0.081616	max power density in mW/cm^2
17.4766%	percentage of standard



Note: 0.467 mW/cm^2 is 100% of allowable standard for lowest frequency

radiation center (feet), y	effective tower height (feet), y	minor lobe angle	dB below main lobe	horiz. dist. x	hyptonuse length (feet)	hypotenuse length (km)	hypotenuse length (cm)	ERP main lobe (watts)	ERP main lobe (dBm)	minor lobe ERP (dBm)	minor lobe EIRP (dBm)	minor lobe EIRP (mW)	Power at point x at ground level mW/cm^2
17.75	11.75	90	20	0.000	11.750	0.004	358.140	2000	63.01	43.01	45.17	32687.43	8.16E-02
												TOTAL	8.16E-02

HTXCWW4513Fxy0

Tri Band | Panel | XXX-Pol | 45° | 14.0 / 14.0 / 14.0 | Fixed Tilt

- Tri Band, XXX-Pol, fixed tilt, panel antenna
- Features ultra wide low band frequency range



Ordering Options

When ordering, replace the "x" in the model number with the desired electrical downtilt for the 696-960 MHz frequency and replace the "y" in the model number with the desired electrical downtilt for the 1710-2170 MHz range. Select from the options listed below under Electrical Downtilt.

Electrical Characteristics		696-960 MHz		Highbands #1 and #2: 1710-2170 MHz		
Frequency Bands (MHz)		696-806	806-960	1710-1880	1850-1990	1900-2170
Polarization		±45°		2x ±45°		
Horizontal Beamwidth		45°	39°	50°	50°	45°
Vertical Beamwidth		40°	35°	24°	22°	22°
Gain		13.0 dBi	14.0 dBi	13.3 dBi	14.0 dBi	14.0 dBi
Electrical Downtilt		(x) 0		(y) 0		
Impedance		50Ω		50Ω		
VSWR		≤ 1.5:1		≤ 1.5:1		
Front-to-Back Ratio		> 20 dB		> 25 dB		
Isolation Between Ports		≥ 25 dB		≥ 25 dB		
IM3 (2x20W carrier)		< -150 dBc		< -150 dBc		
Input Power		500 W		300 W		
Lightning Protection		Direct Ground				
Total Number of Connectors		Antenna has 6 connectors located at the bottom				
Connectors Per Band, Type, Location	696-960 MHz	2 Connectors / 7/16-DIN Female / Bottom / Red Rings				
	1710-2170 MHz	2 Connectors / 7/16-DIN Female / Bottom / White Rings				
	1710-2170 MHz	2 Connectors / 7/16-DIN Female / Bottom / Blue Rings				

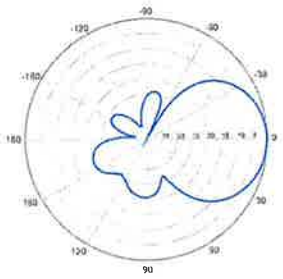
Mechanical Characteristics			
Dimensions (Height x Width x Depth)		613 x 407 x 181 mm	24.1 x 16.0 x 7.1 in
Weight without Mounting Brackets		5.3 kg	11.7 lbs
Survival Wind Speed		241 km/hr	150 mph
Wind Area	Front	0.25 m^2	2.7 ft^2
	Side	0.11 m^2	1.2 ft^2
Wind Loads (160 km/hr or 100 mph)	Front	305 N	68 lbf
	Side	135 N	30 lbf

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

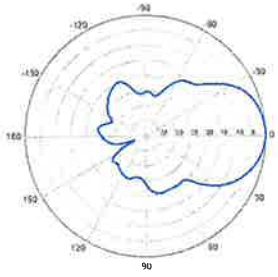
HTXCWW4513Fxy0

Tri Band | Panel | XXX-Pol | 45° | 14.0 / 14.0 / 14.0 | Fixed Tilt

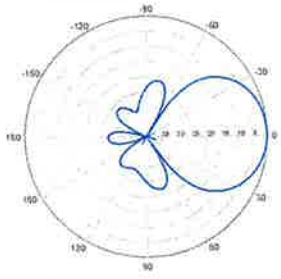
696-960 MHz (Red)



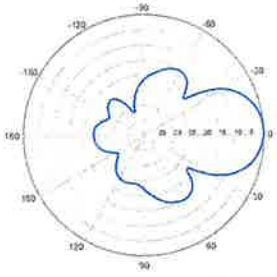
Horizontal | 750 MHz



0° | Vertical | 750 MHz

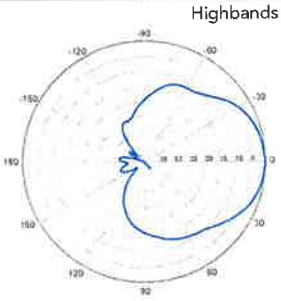


Horizontal | 850 MHz

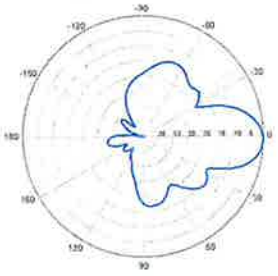


0° | Vertical | 850 MHz

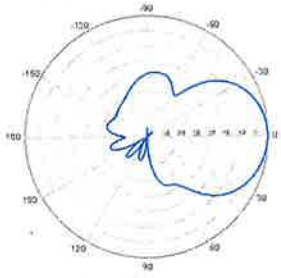
Highbands #1 and #2: 1710-2170 MHz (Blue & White)



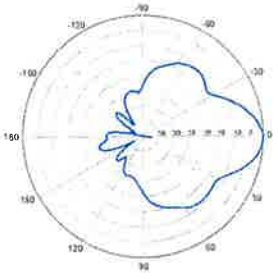
Horizontal | 1800 MHz



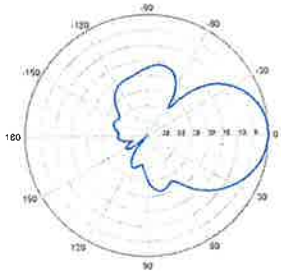
0° | Vertical | 1800 MHz



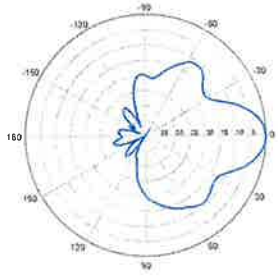
Horizontal | 1900 MHz



0° | Vertical | 1900 MHz



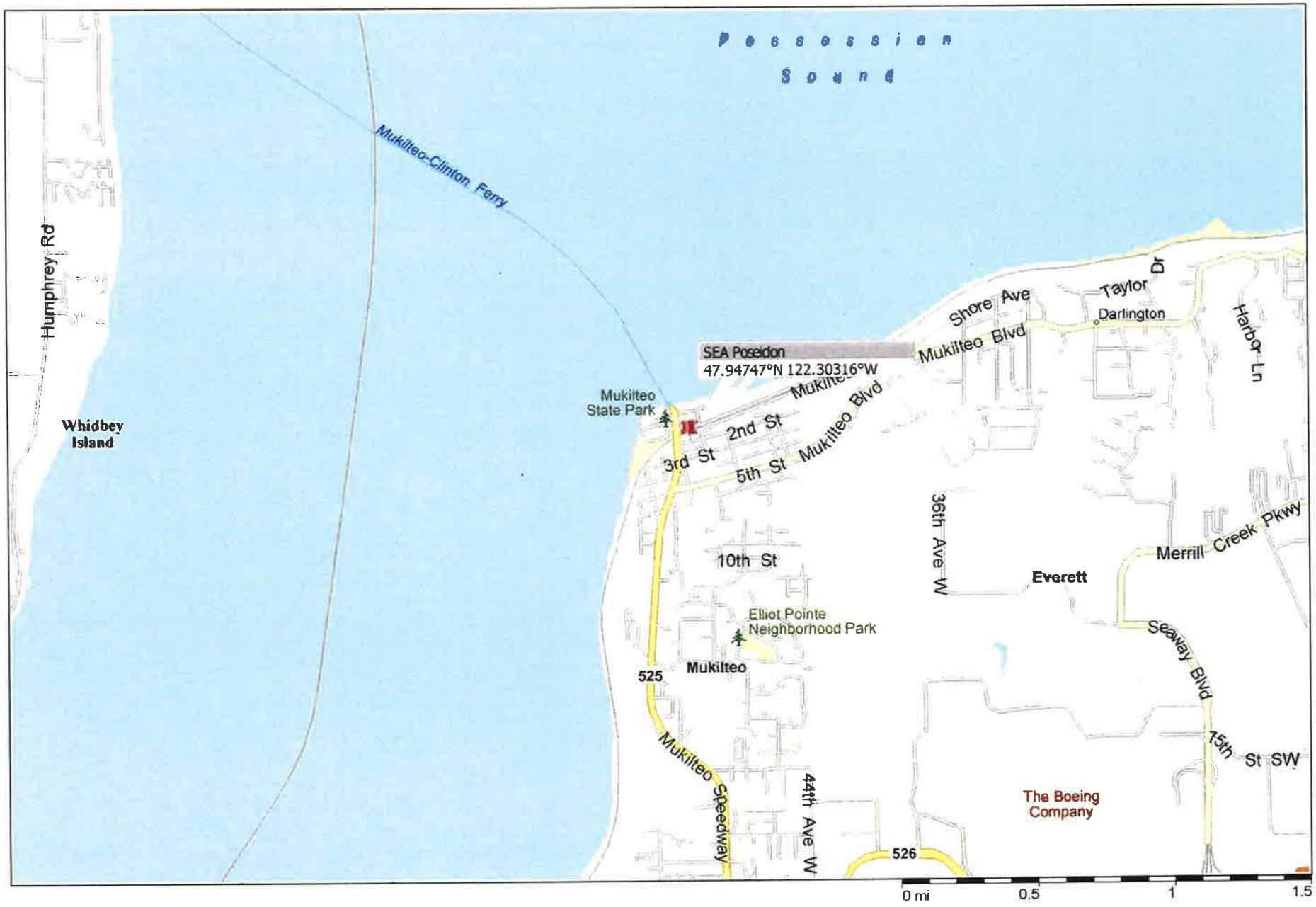
Horizontal | 2100 MHz



0° | Vertical | 2100 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

SEA Poseidon



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CODE COMPLIANCE

WASHINGTON STATE CODE COMPLIANCE:

2015 INTERNATIONAL BUILDING CODE (IBC)
2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
2015 INTERNATIONAL MECHANICAL CODE (IMC)
2015 WASHINGTON STATE ENERGY CODE COMMERCIAL (WSEC)
2015 WASHINGTON STATE ENERGY CODE APPENDIX (WSEC)
2015 UNIFORM PLUMBING CODE (UPC)
2017 WASHINGTON CITIES ELECTRICAL CODE (WCEC)
2017 NATIONAL ELECTRICAL CODE (NFPA 70)
ENVIRONMENTALLY CRITICAL AREAS REGULATIONS (ECA)

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A-2.0	ANTENNA & EQUIPMENT PLAN
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NOTE:
REFER TO ATTACHED STRUCTURAL ANALYSIS REPORT 04-03-18 FOR EXISTING BUILDING ROOFTOP MOUNT CAPACITY TO RECEIVE PROPOSED EQUIPMENT.

SIGNATURE BLOCK

TITLE	SIGNATURE	DATE
CONSTRUCTION MANAGER		
RF ENGINEER		
REAL ESTATE		
SITE ACQUISITION		
PROPERTY OWNER		
TOWER OWNER		

PROJECT SUMMARY

APPLICANT:
VERIZON WIRELESS
3245 158TH AVE SE, MS231
BELLEVUE, WA 98008

APPLICANT AGENT:
CAMP & ASSOCIATES INC.
19401 40TH AVE W SUITE 304
LYNNWOOD WA, 98036
CONTACT: MADELINE CHANEY
PHONE: 425-740-6392
EMAIL: madeline.chaney@campassoc.com

ARCHITECT/ELECTRICAL ENGINEER:
CAMP & ASSOCIATES INC.
19401 40TH AVE W SUITE 304
LYNNWOOD WA, 98036
CONTACT: ERIC CAMP
PHONE: 425-740-6392

LEGAL DESCRIPTION:
SEE SHEET A-1.0

SITE NAME:	SEA-POSEIDON
SITE ADDRESS:	714 2ND ST. MUKILTEO, WA 98275
LAND OWNER:	THOMAS & HALE, LLC 727 2ND ST, UNIT C MUKILTEO, WA 98275
STRUCTURE OWNER:	VERIZON WIRELESS
JURISDICTION:	CITY OF MUKILTEO
PARCEL NUMBER:	00450900200400
ZONING:	DB
OCCUPANCY:	U (UNOCCUPIED)
CONSTRUCTION TYPE:	V-B

PROJECT DESCRIPTION:
SCOPE OF WORK:

SCOPE OF WORK AT ANTENNAS:
-INSTALL (P) VZW ANTENNA SCREENWALL
-INSTALL (2) (P) VZW ANTENNAS

SCOPE OF WORK AT GROUND EQUIPMENT:
-INSTALL (P) GROUNDING RING
-INSTALL (P) VZW RAISED EQUIPMENT PLATFORM
-INSTALL (1) (P) VZW EQUIPMENT CABINET
-INSTALL (2) (P) VZW RRUS-32 B66A
-INSTALL (1) (P) VZW GPS ANTENNA

SCOPE OF WORK OTHER:
-REMOVE (2) (E) BOLLARDS AT (E) TRANSFORMER
-INSTALL (P) SITE METER
-INSTALL/BORE (P) CONDUIT UNDERGROUND UTILITY FROM SOURCE TO METER LOCATION
-INSTALL/BORE (P) CONDUIT UNDERGROUND FOR FIBER FROM (P) FIBER VAULT TO EQUIPMENT
-INSTALL (P) CONDUIT ABOVE GROUND FOR UTILITY FROM METER TO EQUIPMENT ALONG EAVE FASCIA
-INSTALL (P) ROOF ACCESS LADDER
-INSTALL (4) (P) 7/8"ø COAX CABLES
-INSTALL (N) 18"x24"x24" TA-25 FIBER VAULT NEAR SE OF PROPERTY
-INSTALL (2) (N) 6"ø BOLLARDS TYP. AT (E) TRANSFORMER

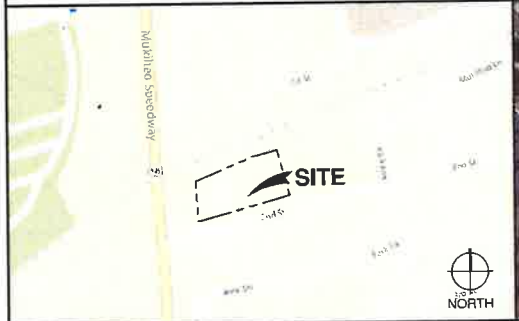
CONFIDENTIAL AND PROPRIETARY
Not for disclosure outside VERIZON WIRELESS without permission

verizon

SEA-POSEIDON
(NEW BUILD)

PROJECT NUMBER: 20171573545
714 2ND ST. MUKILTEO, WA 98275
LAT: 47° 56' 50.90" N 122° 18' 11.37" W
ELEVATION: ±42' AMSL

AREA MAP



AERIAL VIEW



DRIVING DIRECTIONS FROM VERIZON WIRELESS (3245 158TH AVE SE, BELLEVUE WA):
DEPART 158TH AVE SE TOWARD SE EASTGATE WAY, TURN RIGHT ONTO SE EASTGATE WAY, TAKE RAMP LEFT FOR I-90 W, AT EXIT 10, TAKE RAMP RIGHT FOR I-405 NORTH TOWARD BELLEVUE / EVERETT, AT EXIT 23, TAKE RAMP RIGHT FOR WA-522 EAST TOWARD WOODINVILLE, TAKE RAMP RIGHT FOR WA-9 NORTH TOWARD ARLINGTON / SNOHOMISH, TURN LEFT ONTO WA-9, TAKE RAMP RIGHT TOWARD SNOHOMISH, TURN RIGHT ONTO 2ND ST, ARRIVE AT 2ND ST, 714 2ND ST, SNOHOMISH, WA 98290

verizon

SEA-POSEIDON
(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

CAMP+ ASSOCIATES
19401 40TH AVE. W., SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-6392
FAX: (425) 224-1614
WWW.CAMPASSOC.COM

PROJECT MANAGER:	EJC
PREPARED BY:	MJA
APPROVED BY:	EJC

MJA	3/24/18 ISSUED FOR PRELIM REVIEW
MJA	3/8/18 ISSUED FOR PRELIM REVIEW
MJA	4/18/18 ISSUED FOR PRELIM REVIEW
MJA	4/13/18 ISSUED FOR PRELIM REVIEW
MJA	3/30/18 ISSUED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
TITLE SHEET

SHEET NUMBER
T-1.0

PROJECT NUMBER
20171573545

CONTRACTOR NOTES:

THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.

GENERAL NOTES:

DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, AND THIS SET OF PLANS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSES ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANYTHING ELSE DEEMED NECESSARY TO COMPLETE INSTALLATIONS AS DESCRIBED HEREIN.

PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE NEW PROJECT, WITH THE CONSTRUCTION AND CONTRACT DOCUMENTS, FIELD CONDITIONS AND CONFIRM THAT THE PROJECT MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY ERRORS, OMISSIONS, OR DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING.

THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/ VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

ALL WORK PERFORMED ON PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.

THE STRUCTURAL COMPONENTS OF THIS PROJECT SITE/FACILITY ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.

ANTENNA SUPPORTING POLE IS UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION SUB-CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PERSONNEL AND PROPERTY FROM HAZARDOUS EXPOSURE TO OVERHEAD DANGERS.

GENERAL CONTRACTOR SHALL PROVIDE AT THE PROJECT SITE A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

DETAILS INCLUDED HEREIN ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS OR SITUATIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE SCOPE OF WORK.

THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS; EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

CONTRACTOR SHALL ENSURE THE GENERAL WORK AREA IS KEPT CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES, REGULATIONS AND SAFETY REGULATIONS, ALL OSHA REGULATIONS, ALL PUBLIC AND MUNICIPAL AUTHORITIES, AND ANY UTILITY COMPANIES' REGULATIONS AND DIRECTIVES.

THE DRAWINGS AND SPECIFICATIONS ARE A GENERAL DIRECTIVE FOR THE SCOPE OF WORK. EXACT DIMENSIONS AND LOCATIONS MAY CHANGE IN THE FIELD. THE CONTRACTOR IS TO VERIFY THE DIMENSIONS AND LOCATIONS AND REPORT ANY AND ALL DISCREPANCIES TO REPRESENTATIVE. ANY MINOR ERRORS AND OMISSIONS IN THE DRAWINGS AND SPECIFICATIONS DOES NOT EXCUSE THE CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS TO CONFIRM LENGTHS OF CABLE TRAYS AND ELECTRICAL LINES AND ANTENNA MOUNTING.

VERIFICATION THAT EXISTING TOWER/POLE/STRUCTURE CAN SUPPORT THE PROPOSED ANTENNA, COAX & ADDITIONAL EQUIPMENT LOADING IS TO BE DONE BY OTHERS.

SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 110 AND 1704 SHALL BE PERFORMED (AS REQUIRED) BY QUALIFIED TESTING AGENCY APPROVED BY ARCHITECT/ENGINEER. INSPECTION AGENCY SHALL BE RETAINED BY PROJECT OWNER OR THEIR RESPONSIBLE CHARGE. ARCHITECT, ENGINEER OF RECORD, AND BUILDING DEPARTMENT SHALL RECEIVE COPIES OF ALL INSPECTION AND TEST RESULTS. REFER TO DOCUMENTS FOR SPECIFIC INFORMATION.

ITEMS TO BE INSPECTED:

1. HIGH STRENGTH BOLTS (REFER TO STRUCTURALS)
2. CONCRETE EMBEDDED BOLTS (REFER TO STRUCTURALS)
3. OTHER HIGH STRENGTH STEEL CONNECTION COMPONENTS (REFER TO STRUCTURALS)

NOTE:
SPECIAL INSPECTIONS & STRUCTURAL OBSERVATIONS SHALL ALSO BE REQUIRED FOR ALL HIGH STRENGTH BOLTED CONNECTIONS AND AS OTHERWISE REQUIRED BY 2015 IBC CHAPTER 17.

METAL NOTES:

PART 1 - GENERAL

1. SECTION INCLUDES:
   STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS AND GROUTING UNDER BASE PLATES.
2. SUBMITTALS:
   SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED SECTIONS.
3. QUALITY ASSURANCE
   A. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
   B. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

1. MATERIAL

A.	STRUCTURAL STEEL MEMBERS:	ASTM A572, GRADE 50
B.	STRUCTURAL TUBING:	ASTM A500, GRADE B
C.	PIPE:	ASTM A53, TYPE E OR S, GRADE B
D.	BOLTS, NUTS, AND WASHERS:	ASTM A325
E.	ANCHOR BOLTS:	ASTM A307
F.	WELDING MATERIALS:	AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
G.	GROUT:	NON-SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS.
H.	SHOP AND TOUCH-UP PRIMER:	SSPC 15, TYPE 1, RED OXIDE
I.	TOUCH-UP PRIMER FOR GALV.	
J.	SURFACES:	ZINC RICH TYPE

2. FABRICATION
   CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.
3. FINISH
   A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
   B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

1. EXAMINATION AND PREPARATION: VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.
2. ERECTION:
   A. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
   B. FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.
   C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
   D. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 05000,-METALS, PART 2 - PRODUCTS, H & I. SURFACES TO BE IN CONTACT WITH CONCRETE NOT INCLUDED.
3. FIELD QUALITY CONTROL:
   FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS AND TORQUING.

TELECOMMUNICATIONS WIRING COMPONENTS (COAXIAL ANTENNA CABLE)

1. GENERAL
   A. ALL MATERIALS, PRODUCTS OR PROCEDURES INCORPORATED INTO WORK SHALL BE NEW AND OF STANDARD COMMERCIAL QUALITY.
   B. CERTAIN MATERIALS AND PRODUCTS WILL BE SUPPLIED BY THE OWNER (REFER TO GENERAL CONDITIONS FOR THE LIST OF OWNER FURNISHED EQUIPMENT, MATERIALS AND SUPPLIES FOR THESE ITEMS). THE CONTRACTOR IS RESPONSIBLE FOR PICKUP AND DELIVERY OF ALL SUCH MATERIALS.
   C. ALL OTHER MATERIALS AND PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL BE SUPPLIED BY THE CONTRACTOR.
2. MATERIALS:
   A. COAXIAL CABLE:
      a. INSTALL COAXIAL CABLE AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS WITH COAXIAL CABLES SUPPORTED AT NO MORE THAN 3'-0" O.C. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURERS' REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
      b. ALL COAX RUN LENGTHS GREATER THAN 143 FEET SHALL BE 1-5/8" AND IN LENGTH LESS THAN OR EQUAL TO 143 FEET SHALL BE 7/8".
3. ANTENNA AND COAXIAL CABLE GROUNDING
   A. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
4. COAXIAL CABLE IDENTIFICATION
   A. TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, PLASTIC TAGS SHALL BE USED AT THE FOLLOWING LOCATIONS:
      a. FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
      b. SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT.
   B. USE ANDREW CABLE TIES (PT.# 27290) TO SECURE IDENTIFICATION TAGS.
5. TESTING

VERIZON WIRELESS SHALL PROVIDE AN INDEPENDENT TESTING AGENCY TO PERFORM THE COAXIAL SWEEP TEST & REPORT. THE CONTRACTOR IS TO PROVIDE CLIMBER / QUALIFIED PERSONNEL TO ASSIST IN ANY REPAIRS AND WEATHERPROOFING ONCE THE TEST IS COMPLETE. THE CONTRACTOR IS TO PROVIDE VERIZON WIRELESS A MINIMUM OF 48 HOURS NOTICE PRIOR TO THE TIME OF THE SWEEP TEST.

ELECTRICAL NOTES:

INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT, ALL LATEST ISSUE, AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S651-401, I.C.E.A. P81-570, & LOCAL PUD.

PROVIDE A METER BASE PER LOCAL UTILITY STANDARDS. MOUNT ON SIDE OF OWNER FURNISHED BACK BOARD.

UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE 1, CONFORMING TO UL ARTICLE 651: WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED 1 PIPE: SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS. (OR PVC ENCASED IN 8"X18" RED CONCRETE DUCTBANK).

CONDUIT USED INDOORS SHALL BE E.M.T., AND RIGID GALVANIZED STEEL FOR OUTDOORS COUPLINGS SHALL BE RIGID STEEL AND COMPRESSION TYPE FOR E.M.T. SET SCREW FITTINGS ARE NOT PERMITTED. FOR ALL STUBS-UPS, USE RIGID GALVANIZED STEEL CONDUIT.

WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY NEC. THERE WILL BE NO SPLICES ALLOWED. PROVIDE HOPE PULLING HAND HOLES AS NEEDED.

CONTRACTOR SHALL PROVIDE TEST OF THE GROUNDING SYSTEM BY CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS. ALL ABOVE GRADE INTERIOR GROUNDING CONNECTORS SHALL BE DOUBLE-LUG COMPRESSION TYPE. ALL BELOW GRADE AND EXPOSED EXTERIOR GROUNDING CONNECTIONS TO PERMANENT EQUIPMENT AND FIXED BUILDING ELEMENTS SHALL BE CADWELD TYPE. CARE SHALL BE TAKEN TO REVIEW CONNECTION LOCATIONS AND MATERIAL TYPES TO AVOID POSSIBLE GALVANIC CORROSION. ALL EXPOSED GROUNDING CONNECTIONS TO BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS "NO-OXY", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER. ALL BOLTS, WASHERS AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.

ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-3 OR AS PER NOTE 6 ABOVE.

ALL JUNCTION AND OUTLET BOXES TO BE LABELED WITH KROY TAPE, OR EQUAL, DESIGNATING ALL CIRCUIT NUMBERS CONTAINED IN EACH BOX.

CONTRACTOR TO ENSURE ILC PROVIDED WITH (2) INTERNAL TVSS.

CONTRACTOR SHALL COORDINATE WITH SITE SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. WHEREVER POTENTIAL CONFLICTS/ INTERFERENCES EXIST, HAND EXCAVATE TO AVOID DAMAGE. CONTACT ALL UTILITIES TO LOCATE UNDERGROUND PIPING IN PUBLIC ROW.

VERIFY THAT A.I.C. OF THE UTILITY DOES NOT EXCEED THE A.I.C. RATING OF THE PROVIDED EQUIPMENT SHELTER PACKAGE. IF OVER 10KAIC, PROVIDE FUSIBLE SERVICE ENTRANCE SWITCH AND CONFIRM LOWERING OF AIC TO ACCEPTABLE LEVELS.

UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.

CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
4. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
5. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
6. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
7. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
9. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"ø 10-FT. LONG (OR NOTED OTHERWISE ON PLANS), AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 18" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
10. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
12. GROUND RING SHALL BE LOCATED A MINIMUM OF 24" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
13. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE.
14. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING
16. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM)
17. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
18. CONTRACTOR TO VERIFY CURRENT GROUNDING STANDARDS PRIOR TO CONSTRUCTION.

CIVIL NOTES:

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND STIPULATED IN THE SPECIFICATION PROJECT SUMMARY.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE PCS EQUIPMENT, TOWER AREAS, AND ADJACENT BUILDINGS.
4. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
5. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION.

SUBGRADE AND BASE PREPARATION:

1. FOR SLAB-ON-GRADE CONSTRUCTION IT WILL BE NECESSARY TO OVER-EXCAVATE THE SITE BY 2'-0" AND IMPORT AN APPROVED GRANULAR FILL. THE FILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY UNIT WEIGHT WITH A MOISTURE CONTENT WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D-1557).COMPACTION REQUIREMENTS APPLY TO BACKFILL FOR UTILITY TRENCHES AND FOUNDATION EXCAVATIONS WITHIN STRUCTURES, DRIVEWAYS, OR PARKING LOT AREAS.
2. COMPACTION SHALL BE ACCOMPLISHED BY PLACING THE FILL IN SUCCESSIVE, HORIZONTAL, APPROXIMATELY SIX- TO EIGHT-INCH LOOSE LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO AT LEAST THE SPECIFIED MINIMUM DRY DENSITY.
3. ANY ORGANIC MATERIAL, DELETERIOUS MATERIAL, OR DISTURBED SOIL SHALL BE REMOVED FROM FLATWORK AREAS.
4. THE GROUND SURFACE SURROUNDING EXTERIOR STRUCTURES SHALL BE SLOPED TO DRAIN AWAY IN ALL DIRECTIONS.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301, A.C.I. 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 POUNDS PER SQUARE INCH AT 28 DAYS. TYPE I-II PORTLAND CEMENT WILL BE USED WITH A MAXIMUM AGGREGATE SIZE OF 3/4" AND 6% ±1% AIR ENTRAINMENT. ALL CONCRETE WILL HAVE A MAXIMUM WATER/CEMENT (W/C) RATIO OF 0.48.
3. ALL CONCRETE FLATWORK SHALL HAVE A STIFF BROOM FINISH AND HAVE A SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, DEFORMED.
5. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILING OF CONC. REINFORCEMENT" (A.C.I. 315-80, REV. 1986).
6. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE CLASS B CONFORMING TO ACI 318-95.
7. A CHAMFER OF 1" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH A.C.I. 301 SECTION 4.2.4 UNLESS OTHERWISE NOTED.
8. CONCRETE WORK SHALL BE COORDINATED WITH THE MECHANICAL, EQUIPMENT, AND ELECTRICAL WORK TO ASSURE THAT ALL AFFECTED PIPES, CONDUITS INSERTS, ETC. ARE IN PLACE AND VERIFIED BEFORE PLACING CONCRETE.
9. CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE FOLLOWING UNLESS INDICATED OTHERWISE ON THE DRAWINGS:

-CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND -	2 INCHES
-CONCRETE CAST AGAINST EARTH-	3 INCHES

10. COORDINATE LOCATION OF STEEL ANCHOR BOLTS WITH STEEL FABRICATOR PRIOR TO INSTALLATION IN FIELD.
11. CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL WALL/SLAB PENETRATIONS (PIPING, CONDUIT,ETC.) POWER, TELCO AND COAX TO ENTER SITE UNDER EQUIPMENT SLAB.

verizon

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PROJECT MANAGER:	EJC
PREPARED BY:	WJA
APPROVED BY:	EJC

WJA	3/26/18 ISSUED FOR PRELIM REVIEW
WJA	5/8/18 ISSUED FOR PRELIM REVIEW
WJA	4/18/18 ISSUED FOR PRELIM REVIEW
WJA	4/13/18 ISSUED FOR PRELIM REVIEW
WJA	3/20/18 ISSUED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

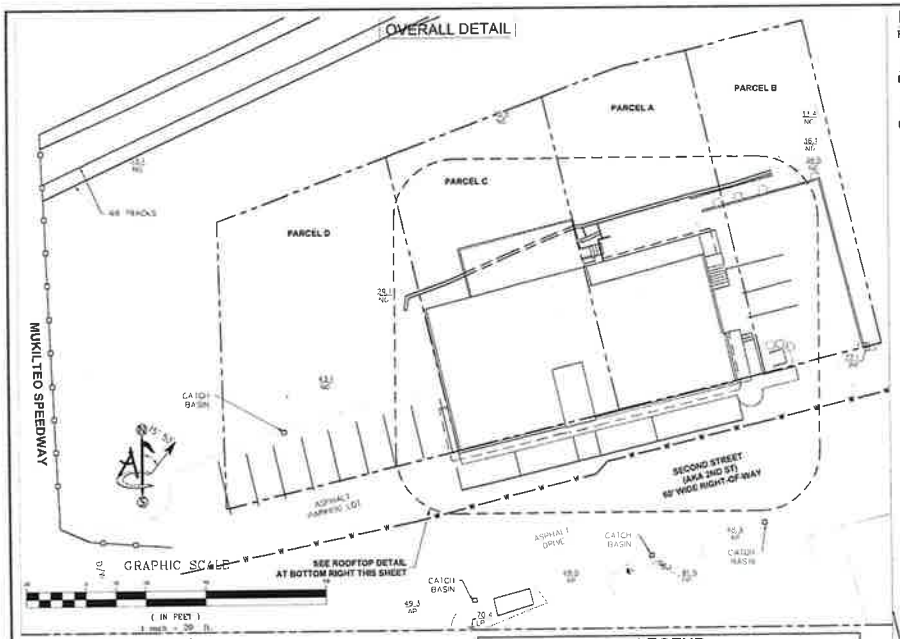
SHEET NAME
GENERAL NOTES

SHEET NUMBER
SP-1.0

PROJECT NUMBER
20171573545

1 GENERAL NOTES

OVERALL DETAIL



RECORD MATTERS

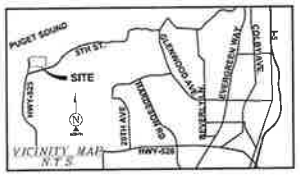
REFER TO SHEET SV-2

LEASE AREA LEGAL DESCRIPTION

REFER TO SHEET SV-2

PARENT PARCEL LEGAL DESCRIPTION

REFER TO SHEET SV-2



POSITION OF GEODETIC COORDINATES
LATITUDE 47° 56' 51.0" (47.94750) NORTH (NAD83-2011)
LONGITUDE 122° 18' 11.6" (122.303222) WEST (NAD83-2011)
GROUND ELEVATION = 41.3' (NAVD88) @ NE BLDG COR

SURVEYOR'S NOTES

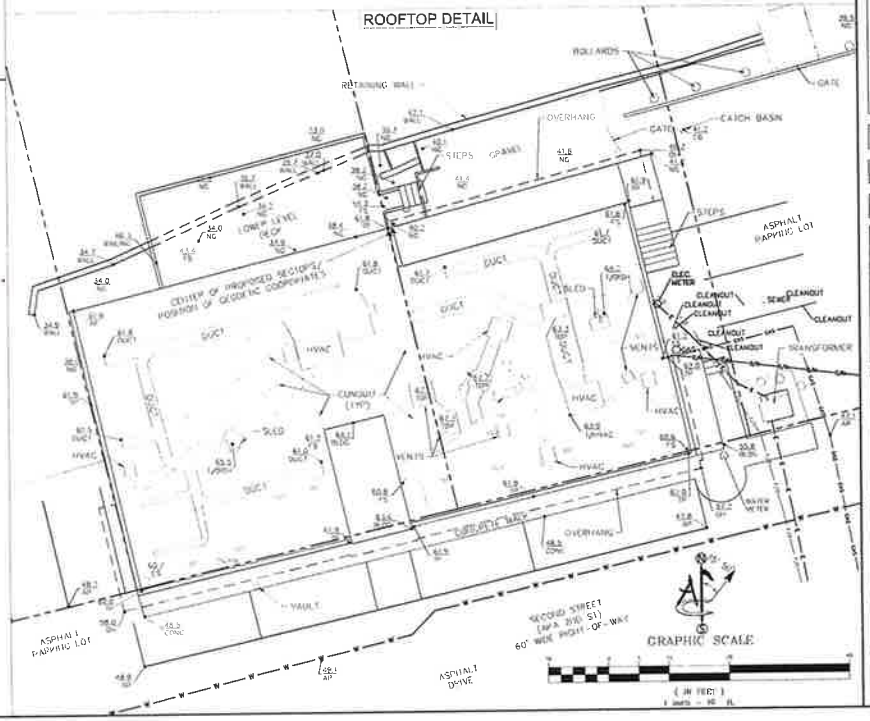
1. SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT ANY INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION, REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. BUILDING SETBACK LINES, ZONING, FLOOD AREA ZONES, AND ADDRESSES THAT MAY BE SHOWN ARE SUPPLIED BY THE GOVERNING AGENCY OR TAKEN FROM THE BEST AVAILABLE RECORDS. THE SURVEYOR WILL NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OF ANY INFORMATION SUPPLIED BY OTHERS.
3. THE DESCRIPTION OF PROPERTY BOUNDARIES AND EASEMENTS SHOWN HEREON, REPRESENT THAT INFORMATION PROVIDED IN TITLE GUARANTEE/CERTIFICATE, TITLE NO. 611152106, PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, EFFECTIVE DATE FEBRUARY 7, 2017. ANY INFORMATION SHOWN WHICH MAY VARY FROM THE CONTENTS OF THE REPORT NOTED ABOVE, REPRESENTS INFORMATION AND MEASUREMENTS FOUND DURING THE COURSE OF THE SURVEY.
4. BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 (2011) COORDINATE SYSTEM WASHINGTON STATE PLANE COORDINATE NORTH ZONE, DETERMINED BY REAL TIME KINEMATIC (RTK) GPS DATA PROCESSED/CORRECTED ON THE WASHINGTON STATE REFERENCE NETWORK (WSRN).
5. THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE X, ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #53061C1010E, MAP EFFECTIVE ON 11/08/1989.
6. PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS 'GEOID 12B' MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY REAL TIME KINEMATIC (RTK) GPS DATA PROCESSED/CORRECTED ON THE WASHINGTON STATE REFERENCE NETWORK (WSRN). ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE NAVD88 DATUM.
7. THE DATE OF SURVEY AND FIELD OBSERVATION USED FOR THIS SURVEY WERE TAKEN SEPTEMBER 9, 2017.
8. THE PURPOSE OF THIS SURVEY IS TO ESTABLISH OR DETERMINE A VERIZON WIRELESS LEASE PARCEL & ASSOCIATED EASEMENTS. THE BOUNDARY SHOWN HEREON IS PLOTTED FROM RECORD INFORMATION PROVIDED AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTY.

LEGEND

AP	ASPHALT		DISH ANTENNA
BLDG	TOP OF BUILDING		GUY WIRE
CONC	EDGE OF CONCRETE		AS NOTED
D/W	ACCESS DRIVEWAY		POWER POLE
FS	FINISHED SURFACE		LIGHT POLE
OH	OVERHANG		POSITION OF GEODETIC COORDINATES
LP	LIGHT POLE		
NG	NATURAL GRADE	123.4 NG	SPOT ELEVATION
SW	SIDEWALK		
TOP	TOP OF FEATURE		
TP	TOP OF PARAPET		
WALL	TOP OF WALL		

- WOOD FENCE
- CURBLINES
- CONCRETE LIMITS
- EXISTING BUILDINGS
- PARKING STRIPES
- WATER LINES
- GAS LINES (GAS)
- ELECTRIC LINES (E)
- FIBER OPTIC LINES (F/O)
- SUBJECT PROPERTY LINE
- EASEMENT LINES
- TIE LINES
- LEASE AREA LIMITS

ROOFTOP DETAIL



verizon

SEA - POSEIDON

(SMALL CELL BUILD)

714 2ND STREET
MUKILTEO, WA 98275

SNOHOMISH COUNTY

CAMP+ ASSOCIATES
9405 40TH AVE W, SUITE 204 LYNNWOOD, WA 98036
PHONE: (425) 740-0390
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PROJECT MANAGER:	SAR
PREPARED BY:	MI
APPROVED BY:	SAR

0 09-29-17 ADDED MLE
A 09-25-17 PRELIMINARY

ambit consulting
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TACOMA, WASHINGTON 98402
PH. (253) 573-9151

SHEET NAME
ROOFTOP SURVEY

SHEET NUMBER
SV-1

PROJECT NUMBER
20141106581

RECORD MATTERS

FIDELITY NATIONAL TITLE INSURANCE COMPANY; GUARANTEE/CERTIFICATE NO. 611152106, EFFECTIVE DATE FEBRUARY 7, 2017:

1. WAIVER OF ALL CLAIMS OR DEMAND, EITHER IN LAW OR EQUITY, AGAINST THE SEATTLE AND MONTANA RAILWAY CO., ITS SUCCESSORS OR ASSIGNS, BECAUSE OF CONSTRUCTION, OPERATION OR MAINTENANCE OF ITS RAILWAY, AS SET FORTH IN INSTRUMENT RECORDED UNDER FILE NO. 20429.
AFFECTS: PARCEL A
[NON REPORTED - NO CERTIFICATION MADE]

2. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
PURPOSE: CONCRETE SIDEWALKS
RECORDING DATE: OCTOBER 10, 1958
RECORDING NO.: 1312229
AFFECTS EASTERLY PORTION OF PARCEL B
[NO DOCUMENT PROVIDED - NO CERTIFICATION MADE]

3. NOTICE CONTAINED IN CORRECTED CONTRACT RECORDED ON MAY 7, 1968 UNDER AUDITOR'S FILE NO. 2028966, AS FOLLOWS:
SUBJECT TO ENCROACHMENT OF ROCK WALL ALONG EAST PROPERTY LINE OF PARCEL A TO A MAXIMUM EXTENT OF 1.35 FEET, AND OVERHANG OF ROOF OF BUILDING ON PARCEL B BY .55 FEET, AS DISCLOSED BY UNRECORDED SURVEY OF SUBJECT PROPERTY.
AFFECTS: PARCELS A AND B
[PARCELS A & B ARE CONTAINED IN PARENT PARCEL OVERHANG AND ENCROACHMENT NOT AN ISSUE WHILE PARCELS A & B ARE COMBINED IN OWNER DESCRIPTION - NO CERTIFICATION MADE]

4. RESTRICTIVE COVENANT AND THE TERMS AND CONDITIONS THEREOF CONTAINED IN INSTRUMENT RECORDED UNDER AUDITOR'S FILE NUMBER 7906200157, RELATING TO REQUIRED OFF-SITE PARKING.
[NOT A SURVEY MATTER - NO CERTIFICATION MADE]

5. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF MUKILTEO
PURPOSE: ACCESS EASEMENT FOR INSPECTION AND MAINTENANCE OF GREASE TRAPS AND APPURTENANCES
RECORDING NO.: 6802040286
AFFECTS: PORTION OF PARCEL C
THE DESCRIPTION CONTAINED THEREIN IS NOT SUFFICIENT TO DETERMINE ITS EXACT LOCATION WITHIN THE PROPERTY HEREIN DESCRIBED.
[ACCESS FOR INSPECTION AND MAINTENANCE OF GREASE TRAPS AND APPURTENANCES - NOT DEFINED, NOTHING SHOWN, PARENT PARCEL IS SUBJECT TO THIS EASEMENT; DOES NOT PERTAIN TO THE PROPOSED TELECOMMUNICATIONS EQUIPMENT]

6. GENERAL AND SPECIAL TAXES AND CHARGES, PAYABLE FEBRUARY 15, DELINQUENT IF FIRST HALF UNPAID ON MAY 1, SECOND HALF DELINQUENT IF UNPAID ON NOVEMBER 1 OF THE TAX YEAR (AMOUNTS DO NOT INCLUDE INTEREST AND PENALTIES):
YEAR: 2017
NOTE: TAXES REFLECT A NOTE "COMB FOR TAX PURP ONLY PER COM DEPT REQ & OWNER APPROVAL"
[NOT A SURVEY MATTER - NO CERTIFICATION MADE]

7. A LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN.
LESSOR: WASHINGTON NATURAL GAS COMPANY
LESSEE: ARNIES RESTAURANT NORTHWEST, INC.
RECORDING NO.: 9206260267
AFFECTS: COMMERCIAL WATER HEATER
[DOCUMENT PROVIDED IS ILLEGIBLE - NO CERTIFICATION MADE]

8. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AS DISCLOSED BY THE DOCUMENT
ENTITLED: MEMORANDUM OF LEASE
LESSOR: C&C ENTERPRISES, A WASHINGTON GENERAL PARTNERSHIP
LESSEE: ARNIES RESTAURANT NORTHWEST, INC. A WASHINGTON CORPORATION
RECORDING NO: 9512200019
[RESTAURANT LEASE ON PARENT PARCEL - NOT A SURVEY MATTER - NO CERTIFICATION MADE]

9. A DEED OF TRUST TO SECURE AN INDEBTEDNESS IN THE AMOUNT SHOWN BELOW,
TRUSTOR/GRANTOR: THOMAS & HALE, LLC
TRUSTEE: RECONVEYANCE PROFESSIONALS, INC.
BENEFICIARY: WHIDBEY ISLAND BANK
RECORDING NO.: 201308020517
AFFECTS: INCLUDES OTHER PROPERTY
[CONTAINS PARENT PARCEL PROPERTY - SHOWN; CONTAINS OTHER PARCEL NOT DEFINED AS PARENT PARCEL]

10. ASSIGNMENT OF RENTS AND LEASES
ASSIGNED TO: WHIDBEY ISLAND BANK
ASSIGNED BY: THOMAS & HALE, LLC
RECORDING NO: 201308020518
[BANK RENTS AND LEASES - NOT A SURVEY MATTER - NO CERTIFICATION MADE]

11. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AS DISCLOSED BY THE DOCUMENT
ENTITLED: SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT
LESSOR: THOMAS & HALE LLC, LIMITED LIABILITY COMPANY, AS SUCCESSOR IN INTEREST TO C & C ENTERPRISES, A WASHINGTON GENERAL PARTNERSHIP
LESSEE: ARNIES RESTAURANT NORTHWEST, INC.
RECORDING NO.: 201308020519
[NOT A SURVEY MATTER - NO CERTIFICATION MADE]

12. SUBORDINATION, NONDISTURBANCE AND ATTORNMENT AGREEMENT, AND THE TERMS AND CONDITIONS THEREOF:
LENDER: WHIDBEY ISLAND BANK
TENANT: ARNIES RESTAURANTS NORTHWEST INC.
LANDLORD: THOMAS & HALE LLC, LIMITED LIABILITY COMPANY, AS SUCCESSOR IN INTEREST TO C & C ENTERPRISES, A WASHINGTON GENERAL PARTNERSHIP
RECORDING NO.: 201308020519
[NOT A SURVEY MATTER - NO CERTIFICATION MADE]

PARENT PARCEL LEGAL DESCRIPTION

PARCEL A:
LOT 2, BLOCK 2, FREDERICKSENÂ€™S ADDITION TO MUKILTEO, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 9 OF PLATS, PAGE 23, RECORDS OF SNOHOMISH COUNTY, WASHINGTON;
EXCEPT THAT PORTION CONVEYED TO THE SEATTLE AND MONTANA RAILROAD COMPANY FOR RIGHT OF WAY;

THE WESTERLY 10 FEET OF LOT 10, BLOCK 2, THOMASÂ€™ ADDITION TO TOWN OF MUKILTEO ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 1 OF PLATS, PAGE 89, RECORDS OF SNOHOMISH COUNTY, WASHINGTON

PARCEL B:
LOT 10, BLOCK 2, THOMAS ADDITION TO MUKILTEO, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 1 OF PLATS, PAGE 89, RECORDS OF SNOHOMISH COUNTY, WASHINGTON;
EXCEPT THE WESTERLY 10 FEET THEREOF.

PARCEL C:
LOT 4, BLOCK 2, FOWLERÂ€™S ADDITION TO TOWN OF MUKILTEO, SNOHOMISH COUNTY, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 2 OF PLATS, PAGE 32, RECORDS OF SNOHOMISH COUNTY, WASHINGTON;
EXCEPT THAT PORTION, IF ANY, LYING WITHIN THE GREAT NORTHERN RAILROAD RIGHT OF WAY.

PARCEL D:
LOTS 5 AND 6, BLOCK 2, FOWLER'S ADDITION TO THE TOWN OF MUKILTEO, SNOHOMISH COUNTY, WASHINGTON; EXCEPT GREAT NORTHERN RAILWAY RIGHT OF WAY;
EXCEPT THAT PORTION OF LOT 6, BLOCK 2, CONVEYED TO STATE OF WASHINGTON UNDER AUDITOR'S FILE NUMBER 674157 ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 2 OF PLATS, PAGE 32, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

LEASE AREA LEGAL DESCRIPTION

TO BE DETERMINED BY CLIENT

verizon

SEA - POSEIDON

(SMALL CELL BUILD)

714 2ND STREET
MUKILTEO, WA 98275

SNOHOMISH COUNTY

CAMP+ ASSOCIATES
8402 40TH AVE W, SUITE 204 LYNNWOOD WA 98036
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FAX: (425) 224-1614 WWW.CAMPASSOC.COM

PROJECT MANAGER: SME
PREPARED BY: MF
APPROVED BY: SAR

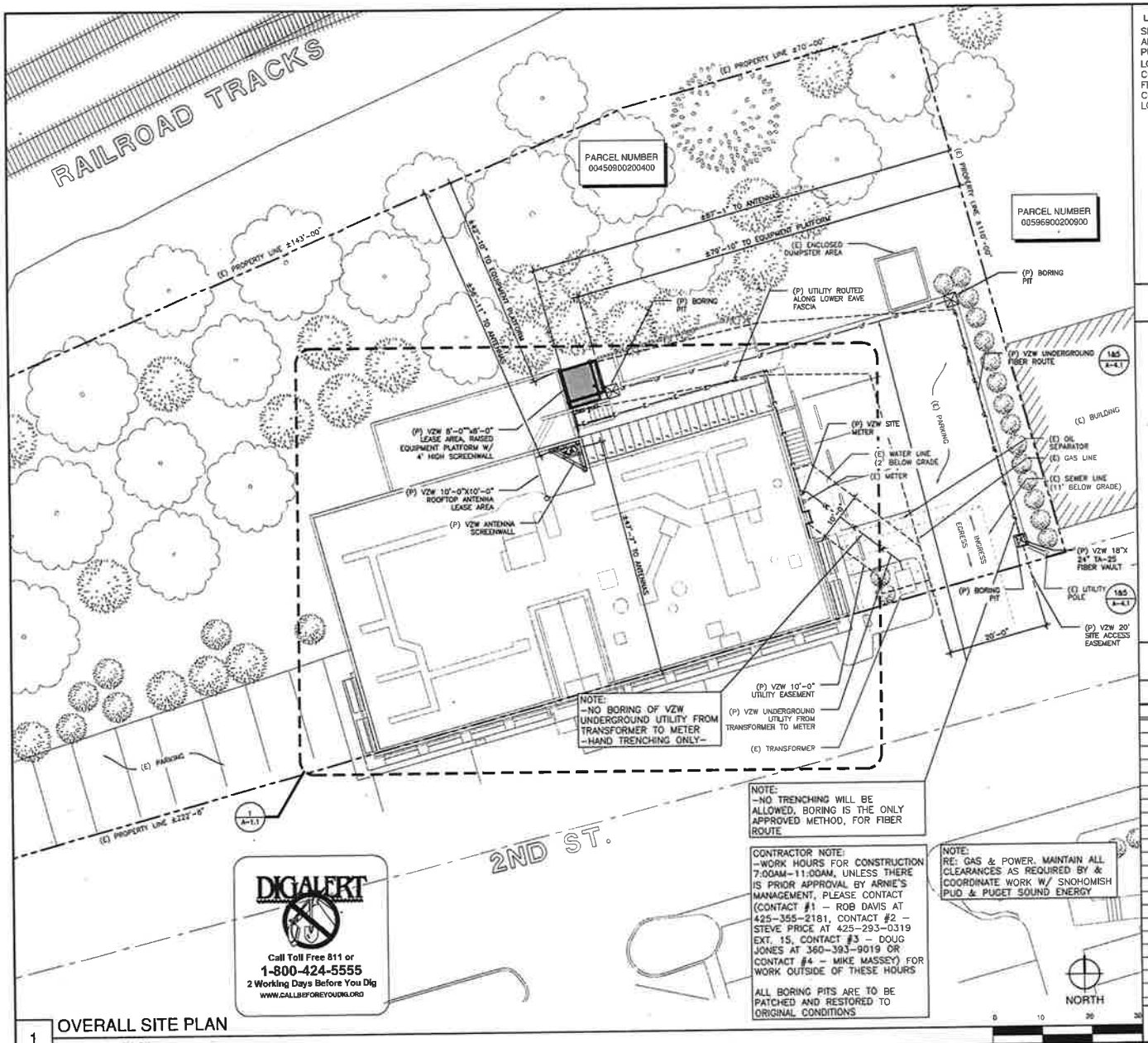
0 09-29-17 ADDED TITLE
A 09-26-17 PRELIMINARY

ambit consulting
345 SAINT HELENS AVE, SUITE 3A
TACOMA, WASHINGTON 98402
PH. (253) 573-1480

SHEET NAME
TITLE/LEGAL DESCRIPTIONS

SHEET NUMBER
SV-2

PROJECT NUMBER
20141105581



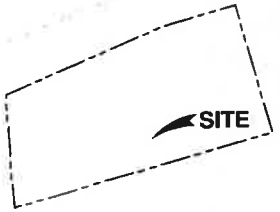
1 OVERALL SITE PLAN

SCALE: 1" = 10' (22x34), 1" = 20' (11x17)

LEGAL DESCRIPTION:

SECTION 4 TOWNSHIP 28 RANGE 4 QUARTER NE FOWLERS ADD TO MUKILTEO BLK 002 D-00 - COMB FOR TAX PURP ONLY PER COM DEPT REQ & OWNER APPROVAL - LOTS 4., 5 & 6 LESS GN R/W & LESS TH PTN LOT 6 CONVYD TOST OF WA PER AF 674157 TGW LOT 2 FREDRICKSONS ADD TO MUKILTEO BLK 2 EXC TH PTN CONVYD TO SEATTLE & MONTANA RR CO & ALSO TGW LOT 10 BLK 2 THOMAS ADD TO MUKILTEO

2 LEGAL DESCRIPTION



3 VICINITY MAP

LEGEND

EXISTING		NEW
SAS	SANITARY SEWER	SAS
STS	STORM SEWER	STS
W	WATER MAIN	W
	SANITARY MANHOLE ELEVATIONS	
	STORM STRUCTURE ELEVATIONS	
	PROPERTY LINE & R.O.W.	
	SURFACE DRAINAGE	
	LIGHT STANDARD	
	STREET LIGHT	
	SPOT ELEVATION	
	CONTOUR	
G G	GAS MAIN	G G
	MANHOLE	
	CATCH BASIN	
	FIRE HYDRANT	
	EASEMENT LINE	
	FENCE	
UE/UP	BURIED UTILITY	UE/UP
	UTILITY POLE	
OE/OT	OVERHEAD UTILITY LINE	OE/OT
	BUILDING	

4 LEGEND

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

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WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

WJA	5/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/16/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

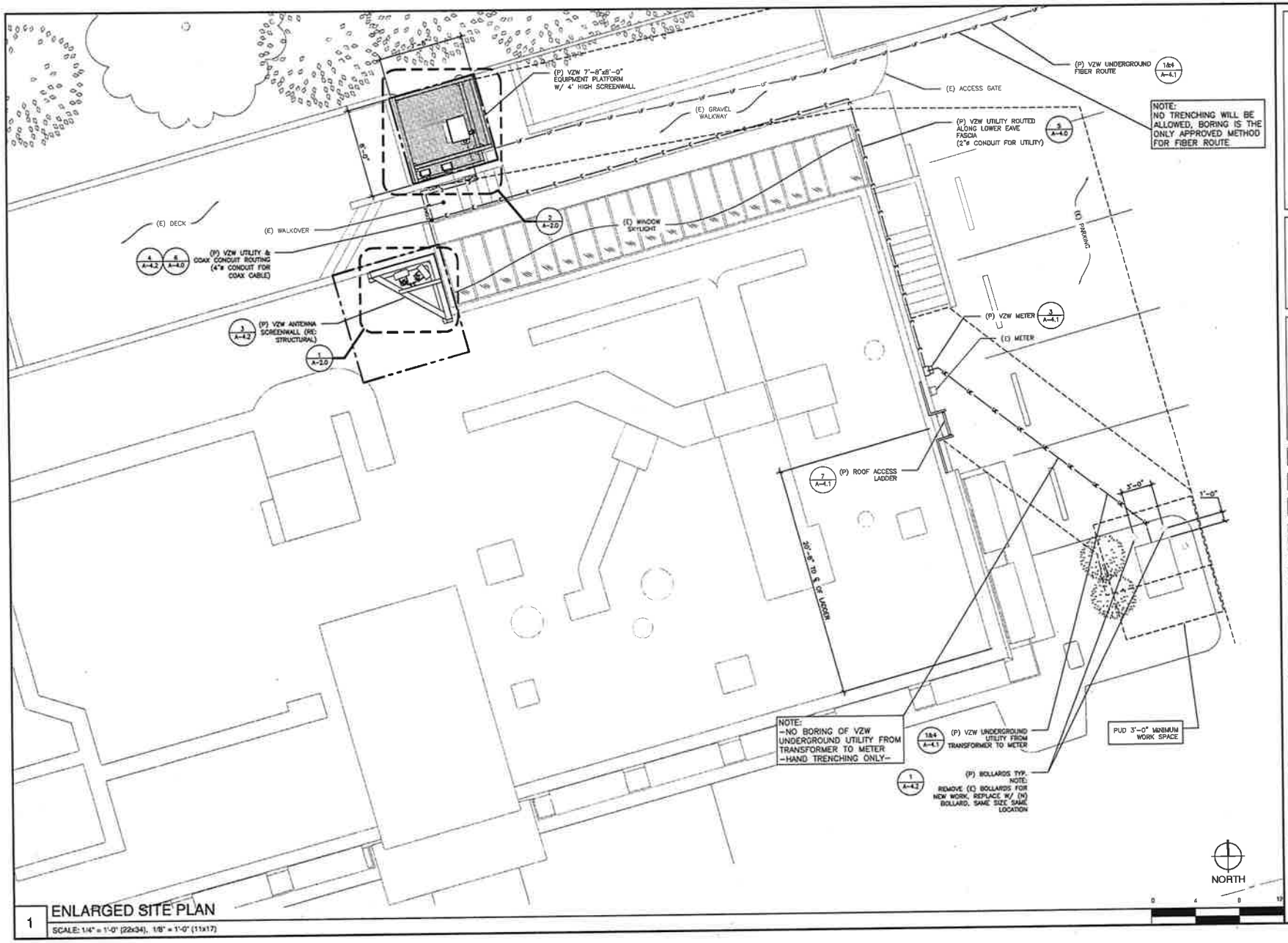
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
OVERALL SITE PLAN

SHEET NUMBER
A-1.0

PROJECT NUMBER
20171573545



1 ENLARGED SITE PLAN

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

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

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PROJECT MANAGER:	EJC
PREPARED BY:	WJA
APPROVED BY:	EJC

WJA	3/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/18/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
ENLARGED SITE PLAN

SHEET NUMBER
A-1.1

PROJECT NUMBER
20171573545

GENERAL NOTES

1. VERIFY EACH COAXIAL CABLE LENGTH, DIAMETER, ROUTING, AND ALL MOUNTING APPURTENANCES WITH OWNER PRIOR TO ORDER.
2. THE MAXIMUM COAXIAL CABLE LENGTH HAS BEEN ESTIMATED WITH CORRESPONDING CABLE DIAMETER ON THE TABLE TO THE RIGHT. THIS CABLE LENGTH IS APPROXIMATE AND IS TO BE USED FOR CONSTRUCTION. ACTUAL ANTENNA CABLE LENGTHS MAY VARY FROM ESTIMATED MAXIMUM LENGTH AND MUST BE VERIFIED.
3. TAG ALL MAIN CABLES AT TWO (2) LOCATIONS:
   A – AT ANTENNAS
   B – INSIDE EQUIPMENT ROOM / CABINET NEAR THE WAVEGUIDE ENTRY PORT.
4. EACH COAX SHALL BE SUPPORTED USING EXISTING ROUTE.
5. EACH COAX SHALL BE GROUNDED AT (3) THREE LOCATIONS: ANTENNA, BASE OF MONO POLE AND EQUIPMENT.

ANTENNA / COAX SCHEDULE

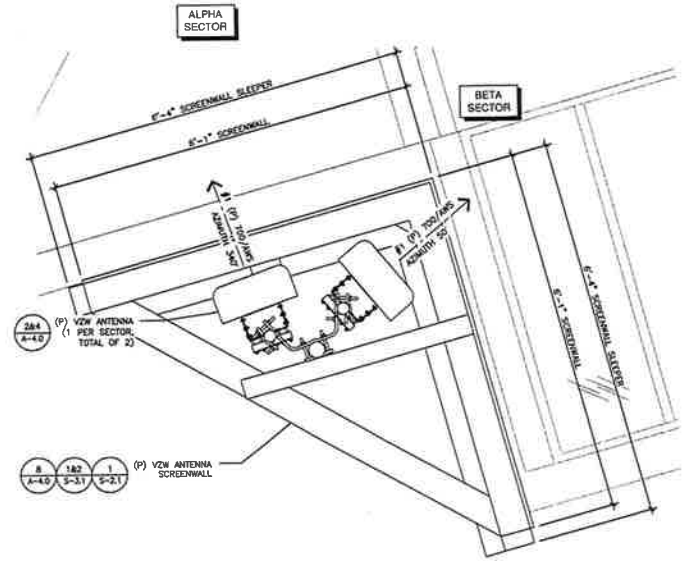
SECTOR	POSITION	ANTENNA TYPE	ANTENNA RAD CENTER (±)	ANTENNA SIZE (±)	AZIMUTH	MECHANICAL DOWNTILT	NUMBER OF COAX RUNS	COAX SIZE	COAX LENGTH
1 (ALPHA)	1	(P) 700-AWS	17'-9"	2'-0"	340°	0°	(2) (P) COAX CABLES	7/8"ø	±40'
1 (BETA)	1	(P) 700-AWS	17'-9"	2'-0"	50°	0°	(2) (P) COAX CABLES	7/8"ø	±40'

SCOPE OF WORK AT ANTENNAS:
- -INSTALL (P) VZW ANTENNA SCREENWALL
- -INSTALL (2) (P) VZW ANTENNAS

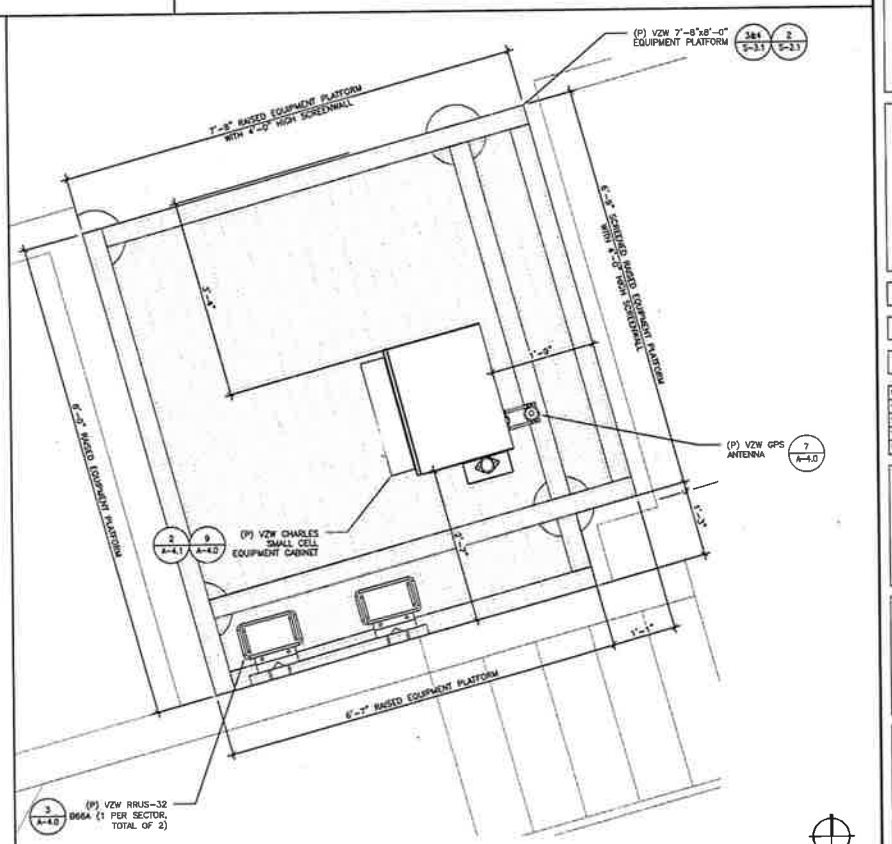
SCOPE OF WORK AT GROUND EQUIPMENT:
- -INSTALL (P) GROUNDING RING
- -INSTALL (P) VZW RAISED EQUIPMENT PLATFORM
- -INSTALL (1) (P) VZW EQUIPMENT CABINET
- -INSTALL (2) (P) VZW RRUS-32 B66A
- -INSTALL (1) (P) VZW GPS ANTENNA

SCOPE OF WORK OTHER:
- -REMOVE (2) (E) BOLLARDS AT (E) TRANSFORMER
- -INSTALL (P) SITE METER
- -INSTALL/BORE (P) CONDUIT UNDERGROUND UTILITY FROM SOURCE TO METER LOCATION
- -INSTALL/BORE (P) CONDUIT UNDERGROUND FOR FIBER FROM (P) FIBER VAULT TO EQUIPMENT
- -INSTALL (P) CONDUIT ABOVE GROUND FOR UTILITY FROM METER TO EQUIPMENT ALONG EAVE FASCIA
- -INSTALL (P) ROOF ACCESS LADDER
- -INSTALL (4) (P) 7/8"ø COAX CABLES
- -INSTALL (N) 18"x24"x24" TA-25 FIBER VAULT NEAR SE OF PROPERTY
- -INSTALL (2) (N) 6"ø BOLLARDS TYP. AT (E) TRANSFORMER

NOTE:
NEW ANTENNA SCREENWALL TO MATCH EXISTING BUILDING SITING CONDITIONS



1 PROPOSED ANTENNA PLAN
SCALE: 1" = 1'-0" (22x34), 1/2" = 1'-0" (11x17)



2 PROPOSED EQUIPMENT PLAN
SCALE: 1" = 1'-0" (22x34), 1/2" = 1'-0" (11x17)

verizon

SEA-POSEIDON

(NEW BUILD)
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PROJECT MANAGER: EJC
PREPARED BY: WJA
APPROVED BY: EJC

WJA	5/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/16/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

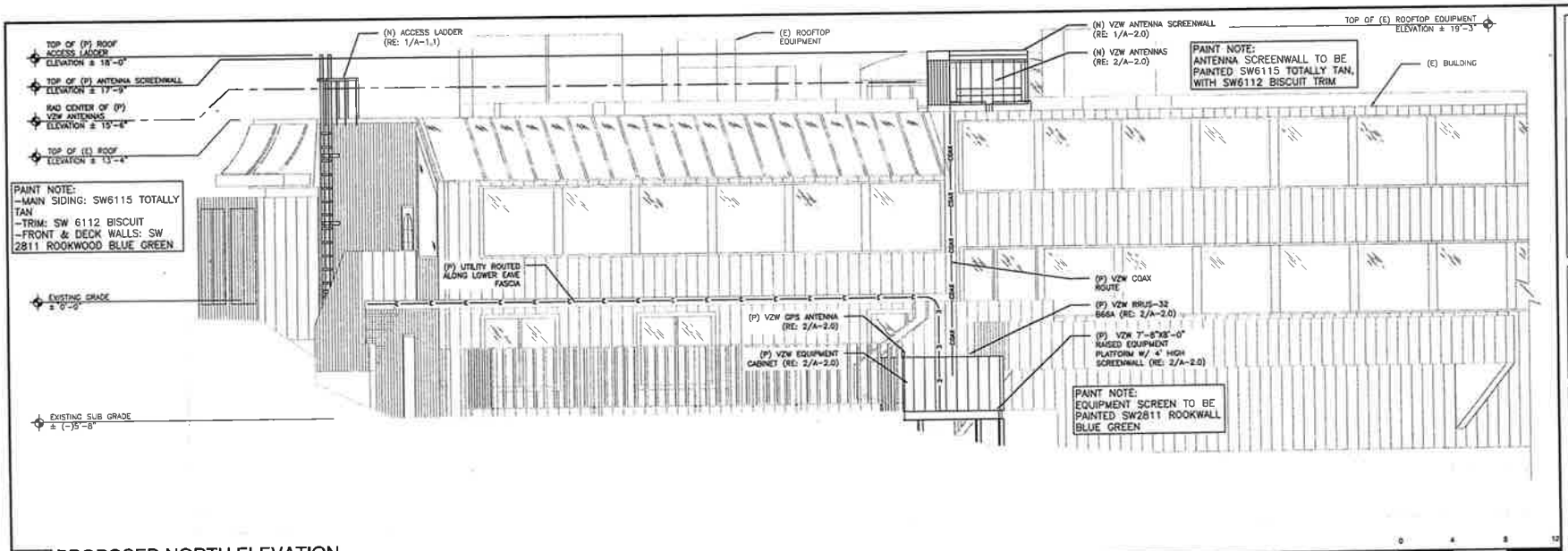
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
ANTENNA & EQUIPMENT PLAN

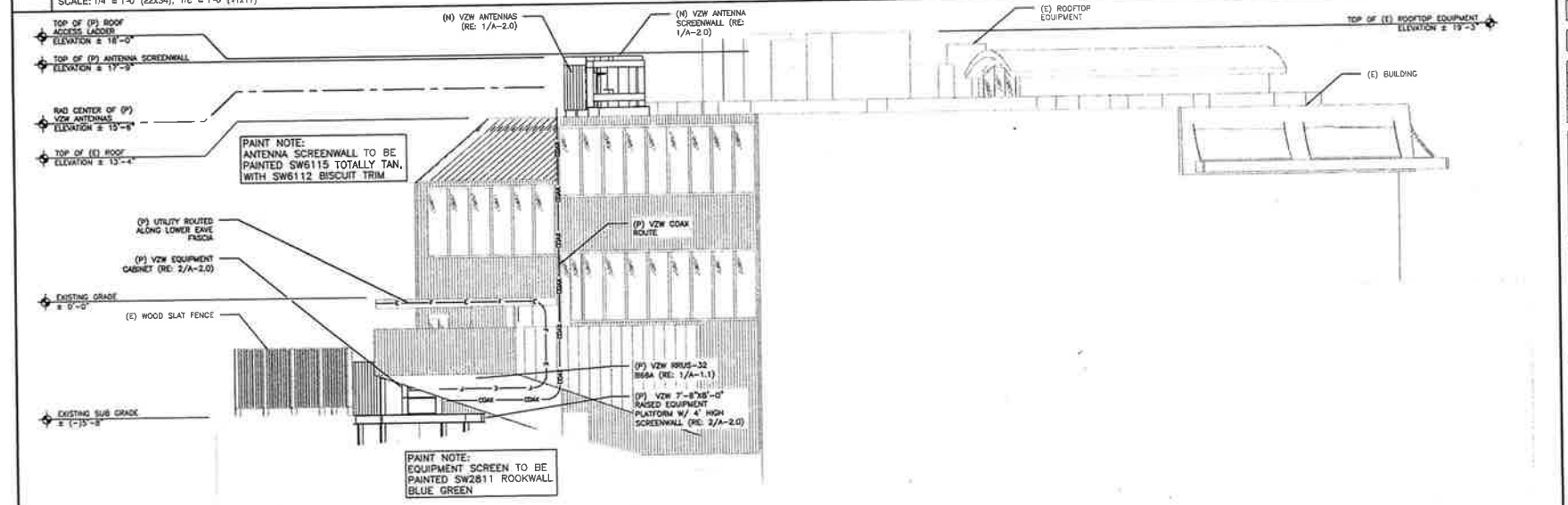
SHEET NUMBER
A-2.0

PROJECT NUMBER
20171573545



1 PROPOSED NORTH ELEVATION

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



2 PROPOSED WEST ELEVATION

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

verizon

SEA-POSEIDON

(NEW BUILD)
714 2ND ST.
MUKILTEO, WA 98275

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LYNNWOOD, WA 98036
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PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

WJA	5/24/18 ISSUED FOR PRELIM REVIEW
WJA	5/8/18 ISSUED FOR PRELIM REVIEW
WJA	4/18/18 ISSUED FOR PRELIM REVIEW
WJA	4/12/18 ISSUED FOR PRELIM REVIEW
WJA	3/30/18 ISSUED FOR PRELIM REVIEW

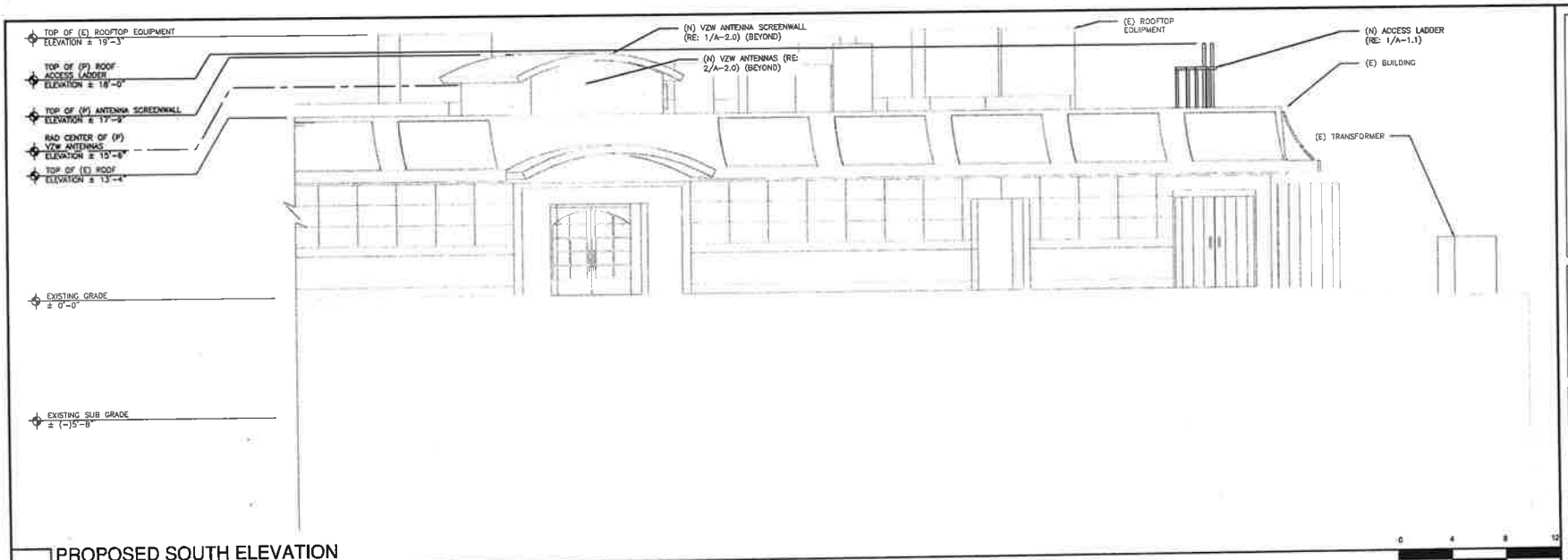
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
NORTH & WEST ELEVATIONS

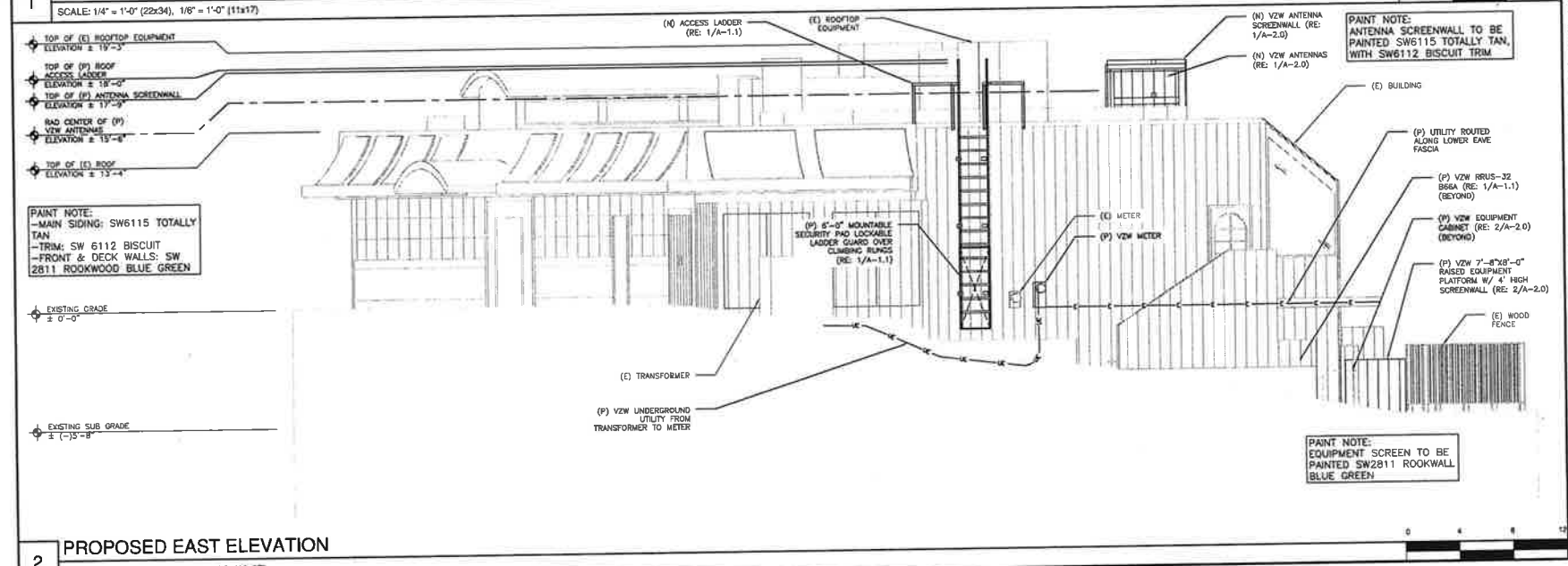
SHEET NUMBER
A-3.0

PROJECT NUMBER
20171573545



1 PROPOSED SOUTH ELEVATION

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



2 PROPOSED EAST ELEVATION

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

verizon

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PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

WJA	5/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/16/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
SOUTH & EAST ELEVATIONS

SHEET NUMBER
A-3.1

PROJECT NUMBER
20171573545

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES, REGULATIONS AND SAFETY REGULATIONS, ALL OSHA REGULATIONS, ALL PUBLIC AND MUNICIPAL AUTHORITIES, AND ANY UTILITY COMPANIES' REGULATIONS AND DIRECTIVES.

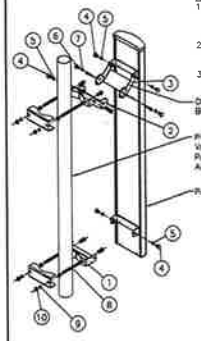
2. THE DRAWINGS AND SPECIFICATIONS ARE A GENERAL DIRECTIVE FOR THE SCOPE OF WORK. EXACT DIMENSIONS AND LOCATIONS MAY CHANGE IN THE FIELD. THE CONTRACTOR IS TO VERIFY THE DIMENSIONS AND LOCATIONS AND REPORT ANY AND ALL DISCREPANCIES TO REPRESENTATIVE. ANY MINOR ERRORS AND OMISSIONS IN THE DRAWINGS AND SPECIFICATIONS DOES NOT EXCUSE THE CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS TO CONFIRM LENGTHS OF CABLE TRAYS AND ELECTRICAL LINES AND ANTENNA MOUNTING.

4. VERIFICATION THAT EXISTING TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA, COAX & ADDITIONAL EQUIPMENT LOADING IS TO BE DONE BY OTHERS.

1 GENERAL NOTES

NOTES:
1. INSERT SCISSOR BRACKETS BETWEEN THE UPPER ANTENNA MOUNTING BRACKET AND THE UPPER POLE ADAPTER BRACKET. SECURE USING 1/2 INCH HARDWARE PROVIDED.
2. TO SET THE DEGREE OF DOWNTILT, ALIGN THE DESIRED HOLES ON THE SCISSOR BRACKETS AND SECURE USING 5/16 INCH HARDWARE PROVIDED.
3. THE NUMBER OF CONNECTORS WILL VARY BASED ON ANTENNA TYPE.

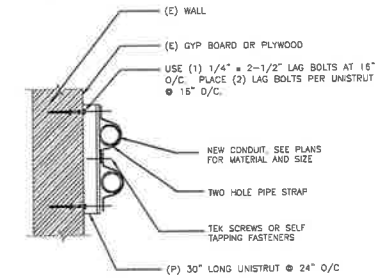


PARTS:

ITEM	QTY	DESCRIPTION
①	1	ADAPTER, POLE, LOWER
②	1	BRACKET, DOWNTILT, POLE
③	1	BRACKET, DOWNTILT, ANTENNA
④	6	1/2 X 1 HEX HEAD BOLT
⑤	6	1/2 SPLIT WASHER
⑥	2	5/16 X 1 HEX HEAD BOLT
⑦	2	5/16 SPLIT WASHER
⑧	4	1/2" THREADED ROD
⑨	8	1/2" SPLIT WASHER
⑩	12	1/2" NUT

2 ANTENNA MOUNTING DETAIL

NOT TO SCALE



5 CONDUIT SUPPORT DETAIL FOR UTILITY

NOT TO SCALE

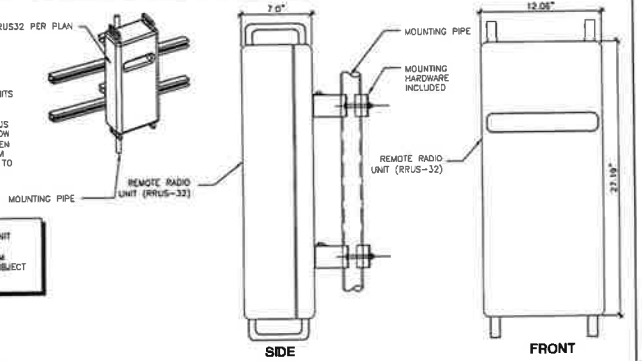
6 NOT USED

NOT TO SCALE

RRUS NOTES:
1. RRUS MOUNTED NEAR ANTENNAS.
2. CONTRACTOR TO VERIFY WITH MANUFACTURER SPEC'S FOR MOUNTING DETAILS.
3. RRUS DETAIL AS SHOWN AS A REFERENCE AND IS SUBJECT TO CHANGE.
4. MOUNTING SHOWN AS TYPICAL. VERIFY ACTUAL CONDITIONS IN FIELD.
5. TO ENSURE ADEQUATE AIRFLOW BETWEEN UNITS ALLOW A MINIMUM OF 15⅝" FREE SPACE BETWEEN RRUS INSTALLED VERTICALLY ON A POLE. ALLOW A MIN. OF 19⅝" BETWEEN RRUS AND ANTENNA, IF INSTALLED ABOVE OR BELOW ANTENNA. ALLOW A MINIMUM OF 7⅝" BETWEEN RRUS INSTALLED SIDE BY SIDE. THE MINIMUM DISTANCE FROM THE BOTTOM OF THE RRUS TO THE FLOOR IS 11⅜"

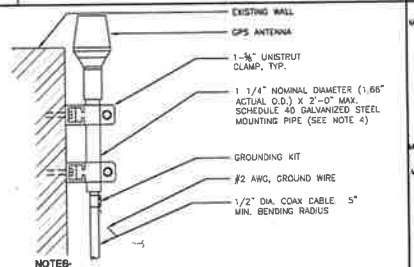
NOTES:
1) MOUNTING HARDWARE INCLUDED WITH UNIT (REUSE FROM SXX 125 0245/1)
2) EQUIPMENT INFORMATION OBTAINED FROM MANUFACTURERS PRODUCT DATA SHEET, SUBJECT TO CHANGE. CONTRACTOR TO VERIFY.

NOTE: WEIGHT OF UNIT IS 51 LBS (VERIFY)



3 RRUS-32 MOUNTING DETAIL

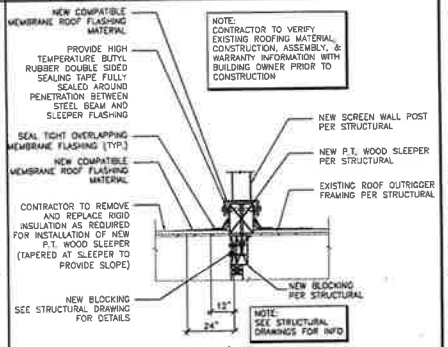
NOT TO SCALE



NOTES:
1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.
3. THE WEIGHT OF THE ANTENNA MOUNT = 6.5 LBS
4. IF ICE BRIDGE OR SIMILAR POST IS NOT GROUNDED, PROVIDE GROUNDING WITH #2 AWG TINNED BARE COPPER WIRE EXOTHERMICALLY BONDED TO LOWER PART OF POST AND CONNECTED TO GROUND RING.

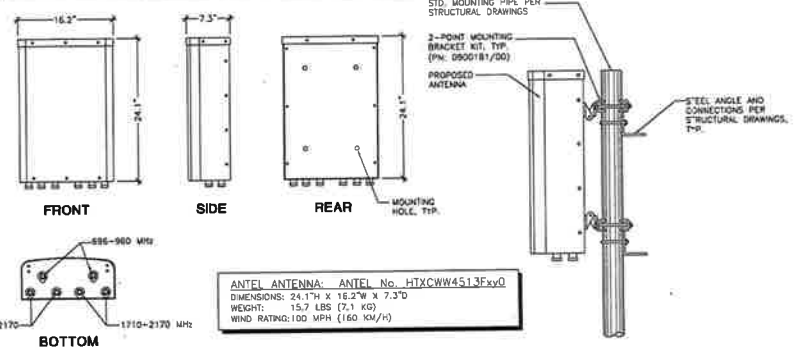
7 GPS ANTENNA MOUNTING DET.

NOT TO SCALE



8 TYPICAL ROOF SLEEPER FLASHING DET.

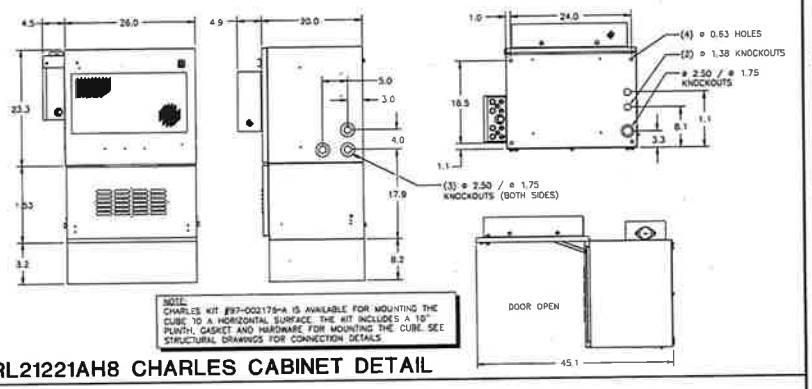
NOT TO SCALE



ANTEL ANTENNA: ANTEL No. HTXCWW4513Fxv0
DIMENSIONS: 24.1"H X 16.2"W X 7.3"D
WEIGHT: 15.7 LBS (7.1 KG)
WIND RATING: 100 MPH (160 KM/H)

4 ANTENNA AND ANTENNA MOUNTING DETAIL

NOT TO SCALE



NOTE:
CHARLES KIT #87-002175-A IS AVAILABLE FOR MOUNTING THE CUBE TO A HORIZONTAL SURFACE. THE KIT INCLUDES A 10" PUNCH, GASKET AND HARDWARE FOR MOUNTING THE CUBE. SEE STRUCTURAL DRAWINGS FOR CONNECTION DETAILS

9 RL21221AH8 CHARLES CABINET DETAIL

NOT TO SCALE

verizon

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PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

WJA	5/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/18/18	ISSUED FOR PRELIM REVIEW
WJA	4/13/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

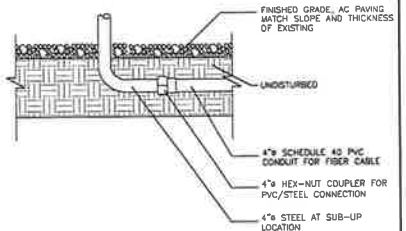
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

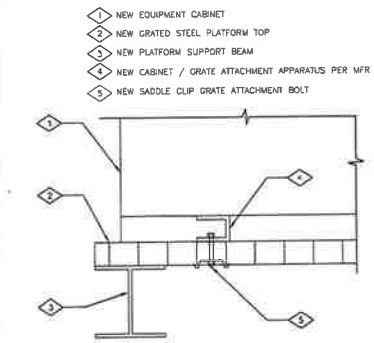
SHEET NAME
DETAILS

SHEET NUMBER
A-4.0

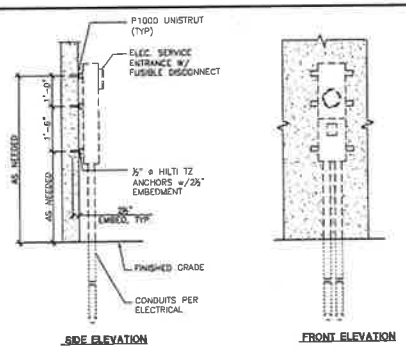
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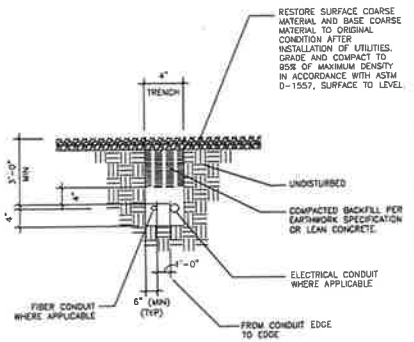
1 **FIBER CONDUIT STUB-UP DETAIL**
NOT TO SCALE



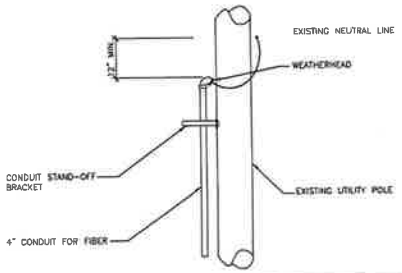
2 **CABINET ANCHOR DETAIL**
NOT TO SCALE



3 **METER TO WALL DETAIL**
NOT TO SCALE



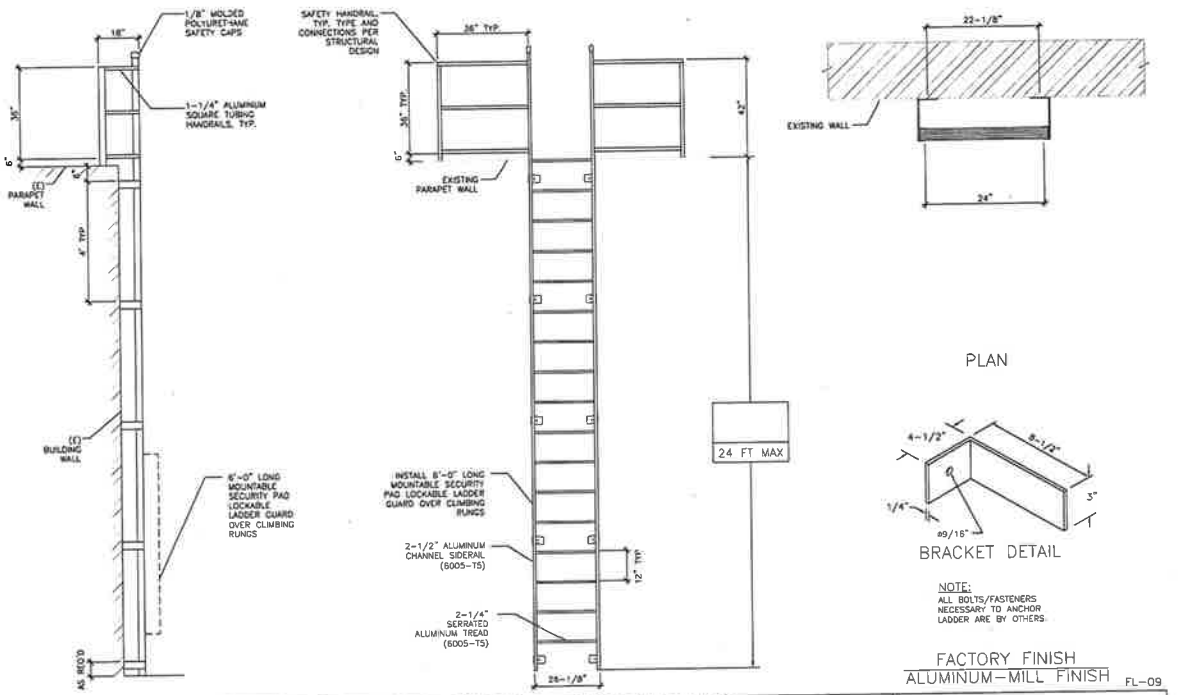
4 **UTILITY TRENCH DETAIL**
NOT TO SCALE



5 **WEATHERHEAD DETAIL**
NOT TO SCALE

6 **NOT USED**
NOT TO SCALE

FIXED LADDER w/CAGE and WALK-THRU



7 **ROOF ACCESS LADDER DETAILS**
NOT TO SCALE

verizon

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PROJECT MANAGER: EJC
PREPARED BY: WJA
APPROVED BY: EJC

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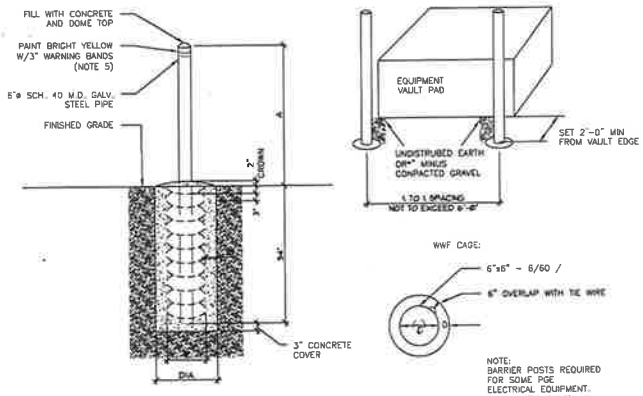
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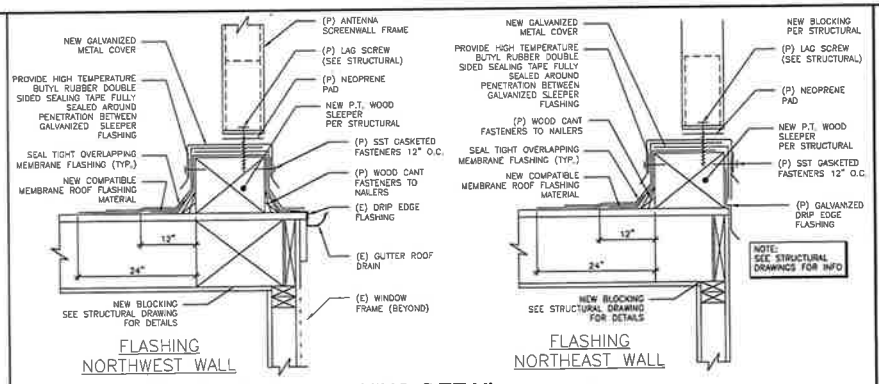


BARRIER POST DETAIL TABLE					
TYPE	DIMENSIONS	HOLE ø	HEIGHT 'A'	CONCRETE SPACE 'D'	WWF ø 'E'
PARKING LOTS	6"ø x 7.5'	24"	36"	NOT NEEDED	NOT NEEDED

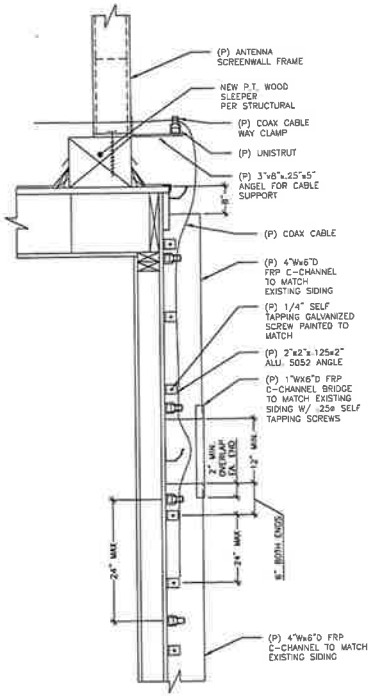
1. PLACE 6" SCHEDULE 40 M.D. GALVANIZED STEEL POST FILLED WITH CONCRETE A MAXIMUM OF 6 FEET APART ON ALL SIDE EXPOSED TO VEHICLES.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AFTER 28 DAYS.
3. BARRIER POST INSTALLATION SHALL BE IN UNDISTURBED EARTH. HOWEVER, THE AREA BETWEEN THE VAULT WALLS AND BARRIER HOLE MAY BE FILLED WITH +" MINUS COMPACTED GRAVEL IF THREE FEET OF UNDISTURBED AREA IS NOT AVAILABLE AFTER THE VAULT IS SET.
4. STEEL REINFORCEMENT SHALL BE WELDED WIRE FABRIC (WWF). 6" x 6" GRID OF 6/60 ROUND, FORMED IN A CAGE AS SHOWN ABOVE. REINFORCEMENT NOT REQUIRED FOR AREAS HAVING ONLY CAR TRAFFIC.
5. POSTS SHALL BE PAINTED BRIGHT YELLOW. MARK TOP WITH TWO 3" WARNING BANDS OF CONTRASTING COLORS.

1 BOLLARD DETAIL
NOT TO SCALE

2 NOT USED
NOT TO SCALE



3 SCREENWALL ROOF FLASHING DETAIL
NOT TO SCALE



4 VERTICAL COAX CABLE CHASE DETAIL
NOT TO SCALE

5 NOT USED
NOT TO SCALE

verizon

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APPROVED BY: EJC

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
DETAILS

SHEET NUMBER
A-4.2

PROJECT NUMBER
20171573545

STRUCTURAL NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS)

CODE

ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC), 2015 EDITION. SPECIFICATIONS AND STANDARDS WHERE REFERENCED ON THE DRAWINGS ARE TO BE THE LATEST EDITION.

DESIGN LOADS - EXISTING BUILDING

DEAD LOADS:
ROOF 15 PSF

LIVE LOADS:
ROOF (SNOW LOAD) 25 PSF

(LIVE LOADS ARE REDUCED WHERE PERMISSIBLE PER IBC SECTION 1607.10)

EARTHQUAKE LOADS:

EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-10 SECTION 12.8

SITE CLASS (ASSUMED)	D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s)	1.473
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1)	0.569
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{DS})	0.982
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{D1})	0.569
RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR (I_E)	1.0
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	WOOD SHEATHING SHEAR WALLS
RESPONSE MODIFICATION FACTOR, (R)	6.5
REDUNDANCY FACTOR (ρ)	1.0
SEISMIC RESPONSE COEFFICIENT (C_S)	0.126

W = TOTAL SEISMIC DEAD LOAD AS DEFINED PER ASCE 7-10 SECTION 12.7.2.

WIND LOADS:

BASIC WIND SPEED (3 SECOND GUST)	110 MPH
EXPOSURE	C
K_{zt}	1.0

SEE PLANS FOR ADDITIONAL DESIGN LOADS.

DESIGN LOADS - PROPOSED STRUCTURES

SCREENWALL WEIGHT:	1100 LBS (INCLUDES APPURTENANCES)
PLATFORM WEIGHT:	3000 LBS (INCLUDES CABINET)
ANTENNA MOUNT WEIGHT:	175 LBS EACH
EQUIPMENT CABINET WEIGHT:	385 LBS EACH

ROOFTOP SCREENWALL:

WIND LOAD: 110 MPH EXPOSURE C

F = qz x (GCr) x Af = 47.0 PSF = 28.2 PSF (ASD) [h<60']
qz = 24.75 PSF (Kz = 0.94, Kzt = 1.0, Kd = 0.85)
GCr = 1.9 [h<60']
RISK CATEGORY II

SEISMIC LOAD: SEISMIC DESIGN CATEGORY D, SOIL TYPE Sd

Fp = $\frac{0.4 a_p S_{DS}}{R_p/I_p}$ (1+2z/h) Wp = 0.337 Wp (ASD)
ap = 1.0 (COMM EQUIPMENT)
Rp = 2.5 (COMM EQUIPMENT)
Sds = 0.982 (Ss = 1.473 & Fa = 1.0 BASED ON LAT/LONG)
Ip = 1.0 (COMM EQUIPMENT)
z/h = 1.0

STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED AS INDICATED IN THE FOLLOWING TABLE. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND OWNER PRIOR TO COMMENCEMENT OF WORK IN ACCORDANCE WITH CHAPTER 1704.4 OF THE IBC.

STEEL CONSTRUCTION - SPECIAL INSPECTION IS REQUIRED IN CONFORMANCE WITH IBC SECTION 1705.2 AND 1705.11.1.

CONCRETE CONSTRUCTION - SPECIAL INSPECTION IS REQUIRED IN CONFORMANCE WITH IBC SECTION 1705.3 AND TABLE 1705.3.

STRUCTURAL OBSERVATION OF THE STRUCTURAL SYSTEM BY THE ENGINEER IS NOT REQUIRED.

FREQUENCY AND DISTRIBUTION OF REPORTS - INSPECTION REPORTS SHALL BE PROVIDED FOR EACH DAY ON SITE BY SPECIAL INSPECTOR. STRUCTURAL OBSERVATION REPORTS SHALL BE PROVIDED AFTER EACH OBSERVATION. REPORTS SHALL BE DISTRIBUTED TO THE CONTRACTOR, ARCHITECT, ENGINEER AND BUILDING OFFICIAL.

SPECIAL INSPECTION

OPERATION	CONT	PERIODIC	REMARKS
SOILS			
PIPE PILING INSTALLATION	X		
PILING REFUSAL VERIFICATION		X	
STRUCTURAL STEEL			
FABRICATION & ERECTION		X	
HIGH STRENGTH BOLTING		X	
SHOP & FIELD WELDING			
SINGLE PASS FILLET WELDS ≤ 5/16"		X	

NOTE:
ALL ITEMS MARKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17. SPECIAL INSPECTION SHALL BE PERFORMED BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING OFFICIAL SHALL BE FURNISHED WITH COPIES OF ALL RESULTS. ANY INSPECTION FAILING TO MEET THE PROJECT SPECIFICATIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN TEAM.

SHOP DRAWINGS

SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION:

1. STRUCTURAL STEEL 2. FRP SCREENWALLS

SHOP DRAWINGS SHALL BE REVIEWED, REVISED AS REQUIRED FOR FIELD CONDITIONS, AND DATE STAMPED BY THE CONTRACTOR PRIOR TO REVIEW BY THE ENGINEER. CONTRACTOR SHALL PROVIDE (3) SETS OF SHOP DRAWINGS FOR ENGINEER'S REVIEW. ALLOW TWO WEEKS FOR SHOP DRAWING APPROVAL BY ENGINEER.

ENGINEER'S SHOP DRAWING REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY, FOR CONFORMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, AND FOR PERFORMING THE WORK IN A SAFE MANNER.

ENGINEER'S SHOP DRAWING REVIEW OF STRUCTURAL COMPONENTS DESIGNED BY OTHERS IS FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND ALL CONNECTIONS TO THE BASIC STRUCTURE. SHOP DRAWINGS SHALL INDICATE MAGNITUDE AND DIRECTION OF THE LOADS IMPOSED ON THE BASIC STRUCTURE AND SHALL BE STAMPED & SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT.

FABRICATION SHALL BEGIN ONLY AFTER SHOP DRAWINGS BEARING THE STAMP AND SIGNATURE OF THE PROJECT ARCHITECT, ENGINEER OF RECORD, AND CONTRACTOR HAVE BEEN RECEIVED.

DEFERRED APPROVAL ITEMS

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND INDICATE THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

1. FRP SCREENWALLS

STRUCTURAL STEEL

STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.

SHAPES SHALL CONFORM TO ASTM A992, F_y = 50 KSI.

PLATES, ANGLES, AND RODS SHALL CONFORM TO ASTM A36, F_y = 36 KSI.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B, F_y = 46 KSI.

STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, F_y = 35 KSI

BOLTS CONNECTING STEEL MEMBERS SHALL CONFORM TO ASTM A325 N. BOLTS SHALL BE 3/4"Ø MINIMUM, UNO. ANCHOR BOLTS SHALL CONFORM TO ASTM A307.

CONTRACTOR SHALL PROVIDE CONNECTION ADJUSTMENT TOLERANCES TO SATISFY THE REQUIREMENTS OF AISC MANUAL OF STEEL CONSTRUCTION.

UNLESS SPECIFIED AS STAINLESS STEEL, ALL STEEL MEMBERS, SHAPES, BOLTS, AND ACCESSORIES EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED.

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITH 70 KSI LOW HYDROGEN ELECTRODES. WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE 5.8 IN AWS D1.1, LATEST EDITION.

WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED OUT ON DRAWINGS OR APPROVED BY STRUCTURAL ENGINEER. WELDING OF GRADE 60 REINFORCING BARS SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS SHALL BE PERFORMED USING E70XX ELECTRODES. SEE REINFORCING NOTES FOR MATERIAL REQUIREMENTS OF WELDED BARS. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING BARS IS NOT PERMITTED.

ALL WELDING SHALL BE DONE BY WASHINGTON ASSOCIATION OF BUILDING OFFICIALS (WABO) CERTIFIED WELDERS.

LUMBER

ALL GRADES SPECIFIED ARE MINIMUM GRADES REQUIRED. ALL LUMBER SHALL BE IN ACCORDANCE WITH WWPA GRADING RULES, KILN-DRIED TO MC 19 AND OF THE FOLLOWING MINIMUM STANDARDS:

SIZE CLASSIFICATION	SPECIES	GRADE	Fb (PSI)	Fc (PSI)
SLEEPERS	DOUG-FIR	STUD	700	
PLATES AND BLOCKING	HEM-FIR	#2	850	

REFER TO PLAN NOTES, SCHEDULES, AND DETAILS FOR MORE SPECIFIC LUMBER SIZE AND GRADE REQUIREMENTS.

UNLESS NOTED OTHERWISE IN THE PLANS, ALL WOOD AND WOOD-BASED MEMBERS EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE, MASONRY, OR WITHIN 8" OF SOIL SHALL BE PRESERVATIVE-TREATED BY VACUUM-PRESSURE IMPREGNATION IN ACCORDANCE WITH AWPA STANDARD U1.

CONCRETE

ALL CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH SECTION CHAPTER 5 OF ACI 318 AND THE AMERICAN CONCRETE INSTITUTE'S SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

ALL CONCRETE SHALL BE STONE-AGGREGATE CONCRETE HAVING A UNIT WEIGHT OF APPROXIMATELY 150 POUNDS PER CUBIC FOOT.

CONCRETE STRENGTHS AT 28 DAYS (f'_c) AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	f'_c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MINIMUM SHRINKAGE STRAIN
FOOTINGS	3000 PSI	0.55	5 1/2 SACK	N/A

THE MINIMUM AMOUNT OF CEMENT LISTED ABOVE MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER, AND ADMIXTURES AS WELL AS THE WATER-CEMENT RATIO, SLUMP, CONCRETE YIELD, AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH CHAPTER 5 OF ACI 318.

ALL CONCRETE EXPOSED TO WEATHER OR TO FREEZING TEMPERATURES SHALL BE AIR ENTRAINED IN ACCORDANCE WITH ACI 318 TABLE 4.2.1 FOR MODERATE EXPOSURE CONDITION.

CONCRETE GENERAL NOTES

SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES. PROVIDE 3/4" CHAMFER AT ALL CORNERS EXCEPT AS NOTED.

NAILS, BOLTS, AND METAL CONNECTORS FOR WOOD

ALL NAILS SHALL CONFORM TO THE STANDARDS SET FORTH BY THE NATIONAL DESIGN STANDARDS (NDS) FOR WOOD CONSTRUCTION, LATEST EDITION. NAILING NOT SPECIFIED SHALL BE PER IBC TABLE 2304.10.1 NAILING SCHEDULE. ALL NAILS CALLED OUT ON PLANS SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM GUIDELINES:

NAIL	SHANK Ø	MIN LENGTH
8d COMMON	0.1310	2 1/2" SHANK
10d COMMON	0.1480	3" SHANK
12d COMMON	0.1480	3 1/4" SHANK
16d COMMON	0.1620	3 1/2" SHANK

10d BOX NAILS MAY BE SUBSTITUTED FOR 8d COMMON NAILS WITH NO CHANGE IN NAIL SPACING. FRAMING MEMBERS MAY BE NAILED WITH 16d SINKERS (0.148"Ø x 3 1/4"), BUT ONLY 16d COMMON NAILS SHALL BE USED WHERE 16d NAILS ARE INDICATED IN THIS DRAWING SET. ENGINEER MAY APPROVE OTHER NAILS IF NAIL LABELS ARE SUBMITTED TO ENGINEER PRIOR TO START OF CONSTRUCTION.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. LEAD HOLES FOR LAG BOLTS SHALL BE BORED FOR THE SHANK AND THREADED PORTIONS PER NDS 11.1.3.

CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, CATALOG TO BE THE LATEST EDITION, OR ENGINEER APPROVED EQUAL. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND WITH THE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY THE MANUFACTURER. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS, SCREWS, OR BOLTS IN EACH MEMBER.

INSTALL SOLID BLOCKING AT ALL BEARING POINTS. ALL SHIMS SHALL BE SEASONED, DRIED, AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

GALVANIZATION

UNLESS NOTED OTHERWISE, STEEL CONNECTORS IN CONTACT WITH TREATED WOOD SHALL BE GALVANIZED ACCORDING TO THE FOLLOWING TABLE:

GALVANIZATION	UNTREATED WOOD	CCA-C	SBX	ACQ-C ACQ-D	CBA-A CA-B	OTHER BORATE	ACZA	OTHER PT WOOD
G90	X		X					
G185	X		X	X	X	X		
HDG	X		X	X	X	X		
SST300	X	X	X	X	X	X	X	X

G90 = 0.90 OZ. OF ZINC PER SQUARE FOOT OF AREA
G185 = 1.85 OZ. OF ZINC PER SQUARE FOOT OF AREA
HDG = HOT DIP GALVANIZED
SST300 = TYPE 316L STAINLESS STEEL

FIBER REINFORCED POLYMER (FRP) SHAPES AND FASTENERS

ALL FRP STRUCTURAL SHAPES SHALL BE 1625 SERIES PULTEX STANDARD PROFILES BY CREATIVE PULTRUSIONS, INC OR APPROVED EQUAL.

ALL FRP HAT PANELS SHALL BE 1500/1525 OR 1625 SERIES PULTEX STANDARD PROFILES BY CREATIVE PULTRUSIONS, INC OR APPROVED EQUAL.

BOLTS AND NUTS SHALL BE SUPERSTUD FIBER REINFORCED POLYMER FASTENER SYSTEM BY CREATIVE PULTRUSIONS, INC OR APPROVED EQUAL.

ALL FRP PRODUCTS EXPOSED TO WEATHER SHALL CONTAIN AN ULTRAVIOLET INHIBITOR.

ALL FIELD CUT, DRILLED EDGES AND HOLES SHALL BE SEALED WITH CATALYZED RESIN AS RECOMMENDED BY MANUFACTURER.

FIBER REINFORCED POLYMER PRODUCTS SHALL BE DESIGNED AND PROVIDED BY HI-TECH COMPOSITE STRUCTURES OR ENGINEER-APPROVED EQUIVALENT MANUFACTURER. SHOP DRAWINGS ARE REQUIRED PER THE STRUCTURAL NOTES AND SHALL BE DESIGNED AND STAMPED BY THE MANUFACTURER'S PROFESSIONAL ENGINEER LICENSED IN THE SAME STATE AS THE PROJECT. REFER TO THE DESIGN LOADS SECTION OF THE STRUCTURAL NOTES FOR MAXIMUM WEIGHT OF SCREENWALL AS WELL AS LATERAL FORCE REQUIREMENTS.

STEEL GRATING

PROVIDE GALVANIZED STEEL FLOOR GRATING BY GRATING PACIFIC OR APPROVED EQUAL. BAND ALL GRATING EDGES.

TYPE OF GRATING: W-19-4
SIZE OF BEARING BARS: 1 1/2" x 1/8" @ 1 3/16" OC
MAX SPAN: 7'-0"

MANUFACTURER/SUPPLIER TO PROVIDE CONNECTION OF GRATING TO STRUCTURAL STEEL WITH "G" CLIPS. SUBMIT SHOP DRAWINGS FOR APPROVAL. PROVIDE MIN. OF (1) "G" CLIP CONNECTION BETWEEN GRATING & STRUCTURAL STEEL ADJACENT TO EACH LOCATION WHERE EQUIPMENT IS ATTACHED TO THE GRATING.

MOUNT EQUIPMENT TO GRATING USING GM SERIES CLIPS WITH 1/2"Ø THREADED STUDS MANUFACTURED BY G-CLIPS GRATING FASTENERS.

EXISTING BUILDING

CONTRACTOR SHALL VERIFY ALL DIMENSIONS, MEMBER SIZES AND CONDITIONS OF THE EXISTING BUILDING DEPICTED IN THE DRAWINGS, AND NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES FOR POSSIBLE REDESIGN.

CONTRACTOR RESPONSIBLE FOR COMPLETELY SEALING ALL AREAS WHERE EXISTING ROOF MATERIAL IS PENETRATED OR REMOVED. PROVIDE WATER PROOFING AS REQUIRED BY THE ARCH.

GENERAL

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS FOR COMPATIBILITY BEFORE PROCEEDING. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING.

CONTRACTOR TO SEE ARCHITECTURAL, CIVIL, ELECTRICAL AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF PIPE, VENT, DUCT AND OTHER OPENINGS AND DETAILS NOT SHOWN ON THESE DRAWINGS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION STABILITY AND TEMPORARY SHORING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFENING ARE INSTALLED.

CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF A SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

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FAX (425) 778-5536

CG PROJECT# 17015.204

PROJECT MANAGER BTJ
PREPARED BY JCP
APPROVED BY MTM

REV	DATE	DESCRIPTION
1	01/03/18	VERIZON SUBMITTAL

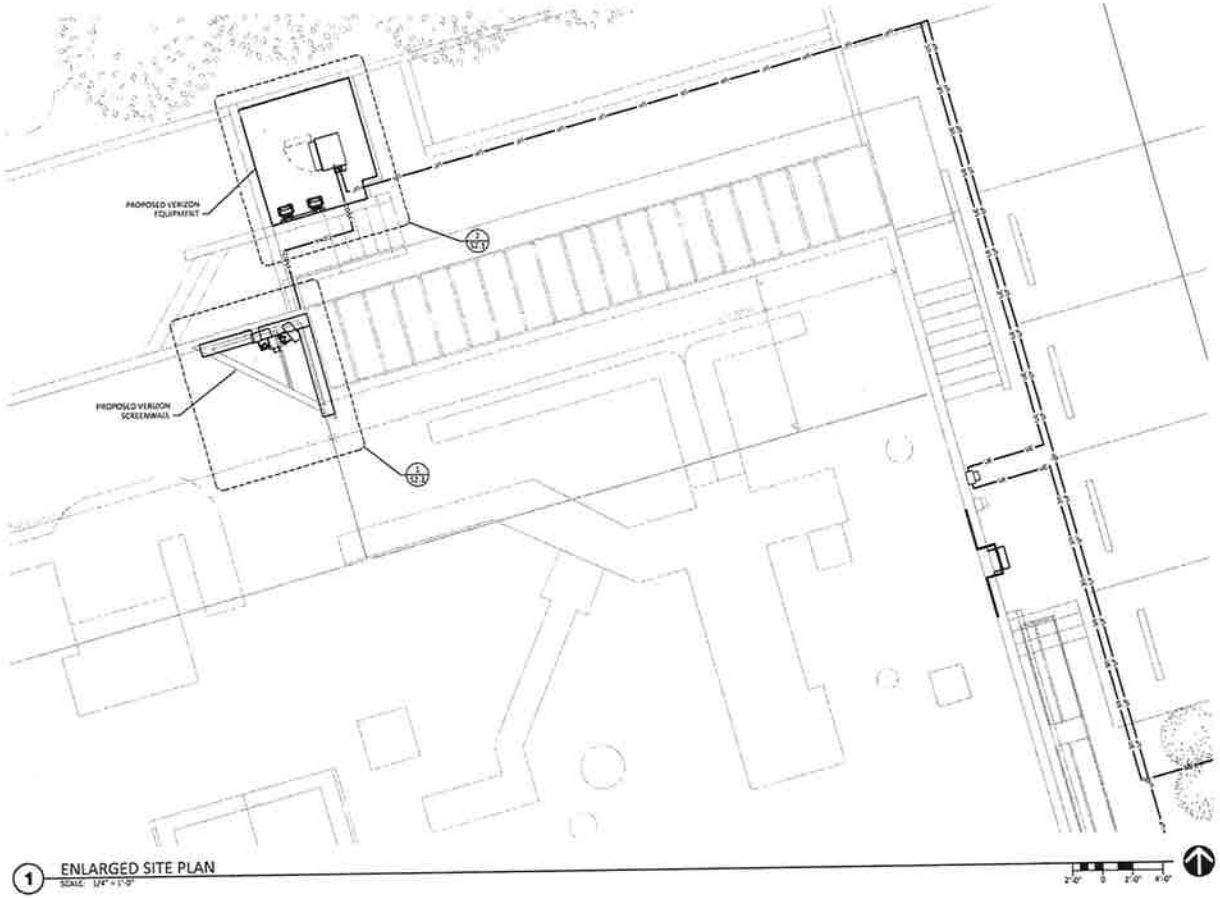
Matthew Timothy Mahoney — State of Washington — 22000 — Professional Engineer — 01/03/18

CITY APPROVAL

SHEET NAME
STRUCTURAL NOTES

SHEET NUMBER
S1.1

PROJECT NUMBER
20171573645



1 ENLARGED SITE PLAN
SCALE: 1/4" = 1'-0"

PLAN NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FRAMING SHOWN FOR COMPATIBILITY TO THE DRAWINGS PRIOR TO FABRICATION AND CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR POSSIBLE REDESIGN.
2. CONTRACTOR RESPONSIBLE FOR COMPLETELY SEALING ALL AREAS WHERE EXISTING ROOF MATERIAL IS PENETRATED OR REMOVED. PROVIDE WATER PROOFING AS REQUIRED BY THE ARCH.
3. ALL EXTERIOR STEEL SHALL BE HOT DIP GALV.

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CG PROJECT# 17015.204

PROJECT MANAGER BTJ

PREPARED BY JCP

APPROVED BY MTM

REV	DATE	DESCRIPTION
A	05/03/18	PERMIT SUBMITTAL

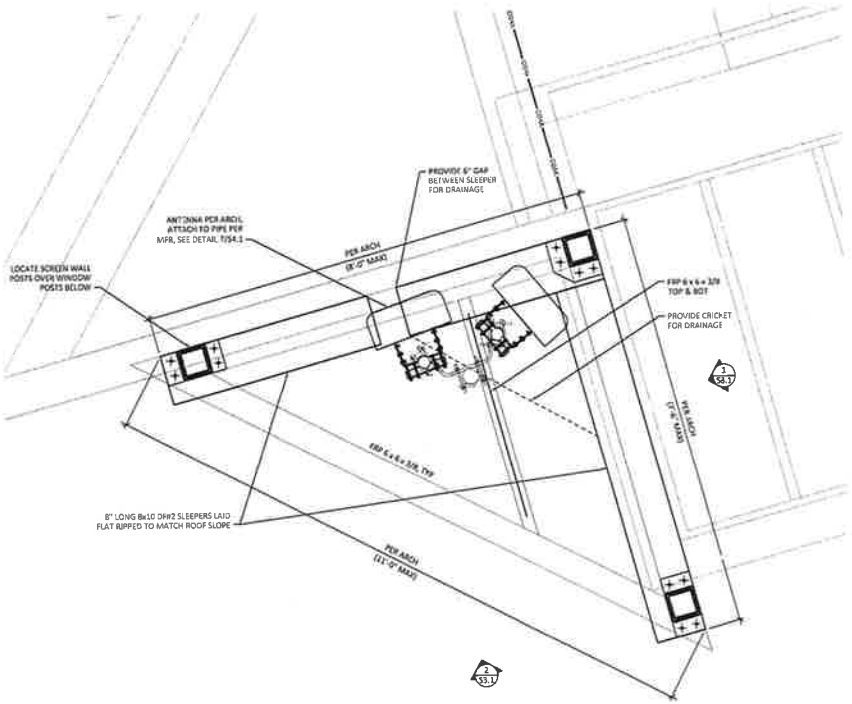
05/09/18

CITY APPROVAL

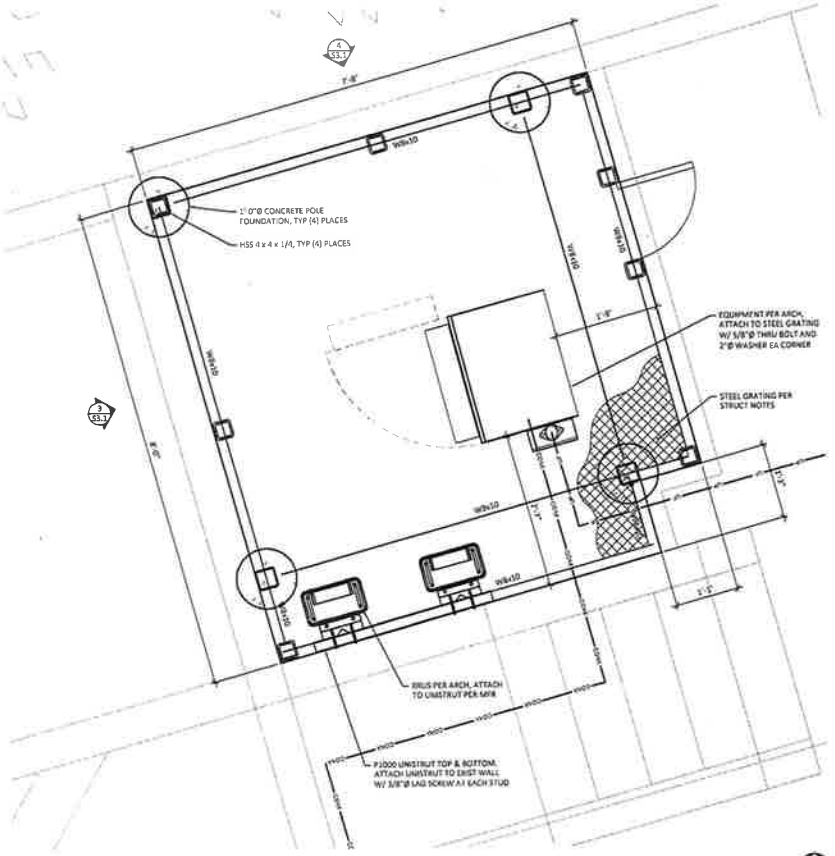
SHEET NAME
ENLARGED SITE PLAN

SHEET NUMBER
S1.2

PROJECT NUMBER
20171573645



1 PARTIAL ROOF FRAMING PLAN
SCALE: 1" = 1'-0"



2 EQUIPMENT PLAN
SCALE: 1" = 1'-0"

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CG PROJECT# 17015.204

PROJECT MANAGER	BTJ
PREPARED BY	JCP
APPROVED BY	MTM

REV	DATE	DESCRIPTION
A	01/01/18	PERMIT SUBMITTAL

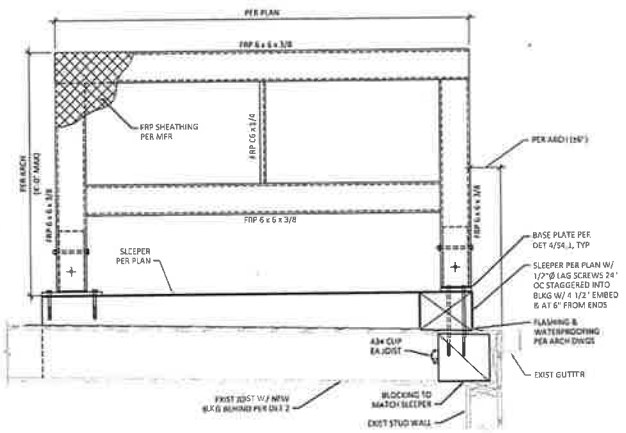
Mike Thorsett
01/29/18

CITY APPROVAL

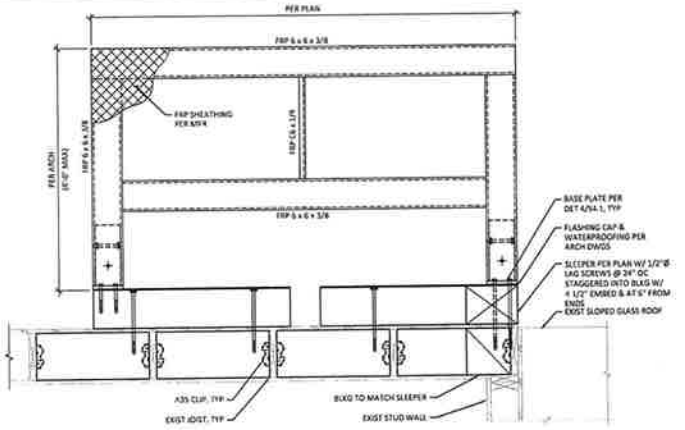
SHEET NAME
ANTENNA AND EQUIPMENT PLAN

SHEET NUMBER
S2.1

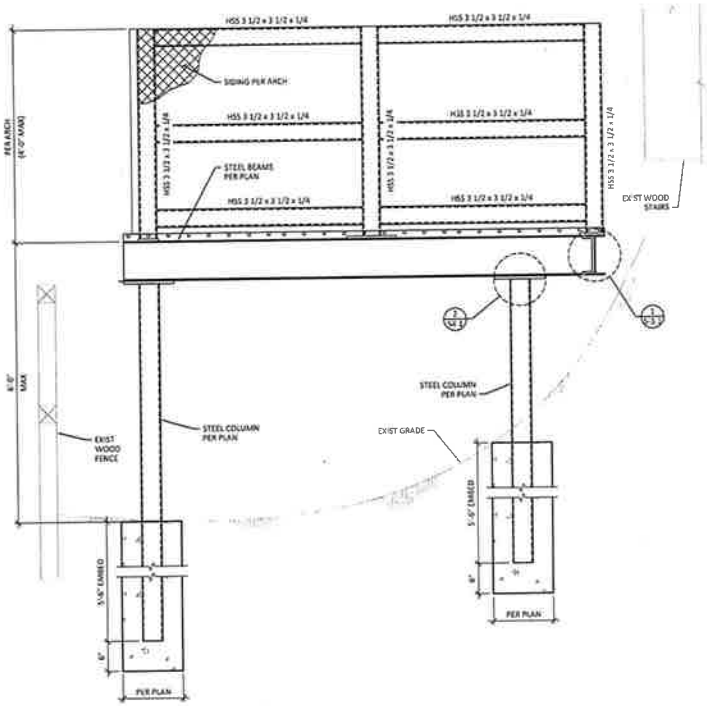
PROJECT NUMBER
20171573545



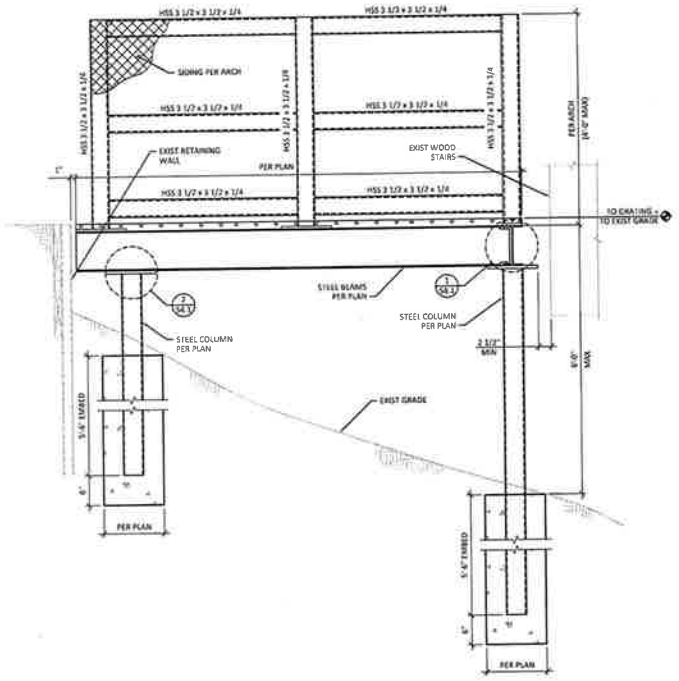
1 SCREENWALL EAST ELEVATION
SCALE: 1" = 1'-0"



2 SCREENWALL SOUTH ELEVATION
SCALE: 1" = 1'-0"



3 PLATFORM WEST ELEVATION
SCALE: 1" = 1'-0"



4 PLATFORM NORTH ELEVATION
SCALE: 1" = 1'-0"

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CG PROJECT # 17015.204

PROJECT MANAGER BTJ

PREPARED BY JCP

APPROVED BY MTM

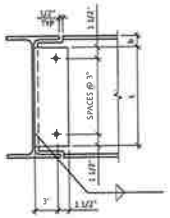
REV	DATE	DESCRIPTION
A	09/05/18	PERMIT SUBMITTAL

CITY APPROVAL

SHEET NAME
SCREEN WALL ELEVATIONS AND FOUNDATION SECTION

SHEET NUMBER
S3.1

PROJECT NUMBER
20171572545

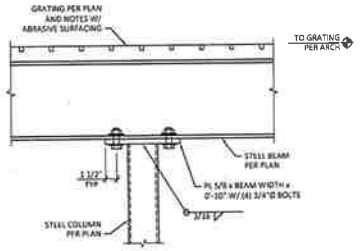


BEAM TO BEAM

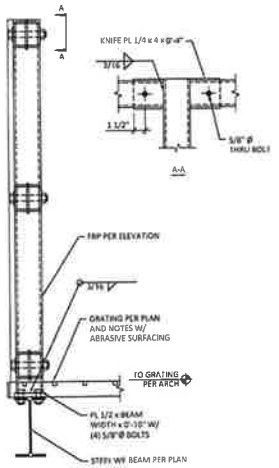
TYPE	BEAM SIZE	NO OF BOLTS	PL LENGTH (L)	PL THICKNESS	WELD SIZE	DIM (E)	ØM (D)	CAPACITY (KIPS)
⑥	W8	(2) 3/4"Ø	6"	5/16"	1/8"	1 1/4"	1"	82

NOTES:
1. ALL BOLTS SHALL BE A325N, TYP UNO. BOLT HOLES SHALL BE STANDARD SIZE, TYP UNO.
2. CONNECTIONS ARE TYPICAL FOR BEAM SIZE SHOWN EXCEPT WHERE A "TYPE" IS CALLED OUT ON PLANS.
3. BOLT INSTALLATION SHALL BE PER AISC SPECIFICATIONS, LATEST EDITION.

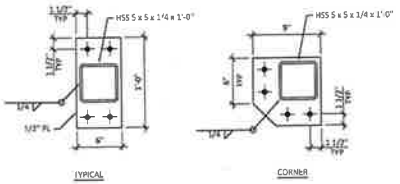
1 TYP SINGLE PLATE SHEAR CONNECTION TABLE
SCALE: NTS



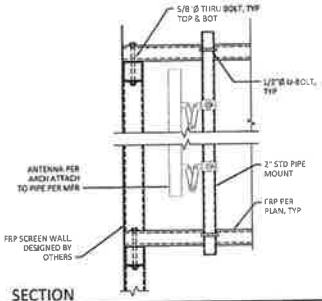
2 COLUMN CONNECTION AT CONTINUOUS WF BEAM
SCALE: 1 1/2" = 1'-0"



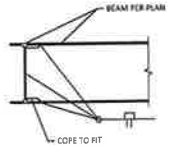
3 HANDRAIL CONNECTION TO STEEL FRAMING
SCALE: 1 1/2" = 1'-0"



4 FRP BASE PLATE DETAILS
SCALE: 1 1/2" = 1'-0"



5 SECTION
SCALE: 1" = 1'-0"



6 MOMENT CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0"

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CG PROJECT# 17015.204

PROJECT MANAGER BTJ
PREPARED BY JCP
APPROVED BY MTM

REV	DATE	DESCRIPTION
1	09/01/15	PERMIT SUBMITTAL

CITY APPROVAL

SHEET NAME
SCREEN WALL AND EQUIPMENT PLATFORM DETAILS

SHEET NUMBER
S4.1

PROJECT NUMBER
20171572645

VZW

225 A. BUS 100 A. MAIN CIRCUIT BREAKER

208 / 120 VOLT, 1 PHASE, 3 WIRE

22,000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: SQUARE D
PANEL MOUNTING: SURFACE

NOTE: PROVIDE WITH INTERNAL TVSS

DESCRIPTION	TOTAL (VA)	BREAKER A / P	CCT	PH	CCT	BREAKER A / P	TOTAL (VA)	DESCRIPTION
BATTERY HTR	100	20 / 1	1	A	2	40 /	2400	RECTIFIER 1 & 2
SPARE	–	20 / 1	3	B	4	/ 2	2400	-----
RECEPT	540	20 / 1	5	A	6	40 /	2400	RECTIFIER 3 & 4
EXHAUST FAN	180	20 / 1	7	B	8	/ 2	2400	-----
LIGHTING	128	20 / 1	9	A	10	60 /		SURGE ARRESTOR
LIGHTING	128	20 / 1	11	B	12	/ 2		-----
LIGHTING	128	20 / 1	13	A	14	/		SPACE
SPACE		/	15	B	16	/		SPACE
SPACE		/	17	A	18	/		SPACE
SPACE		/	19	B	20	/		SPACE

PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.38	KW @	100% =	0.38 @	125% =	0.48 KVA
FLUORESCENT	0.0	KW @	95% =	0.0 @	125% =	0.0 KVA
RECEPTACLES						
FIRST 10 KW	0.54	KW @	100% =	0.54 @	100% =	0.54 KVA
REMAINDER	0.0	KW @	100% =	0.0 @	50% =	0.0 KVA
MOTORS						
LARGEST	0.16	KW @	80% =	0.16 @	125% =	0.20 KVA
REMAINDER	0.0	KW @	80% =	0.0 @	100% =	0.0 KVA
OTHER						
CONTINUOUS	9.6	KW @	100% =	9.8 @	125% =	12.0 KVA
NONCONTINUOUS	0	KW @	100% =	0 @	100% =	0 KVA
TOTAL	10.78	KW		10.68 KVA		13.2 KVA
			MINIMUM PANEL AMPACITY =			63.6 AMPERES

PHASE "A" 5.7 KW PANEL A–B 89% PHASE
PHASE "B" 5.1 KW POWER BALANCE
FACTOR 100%

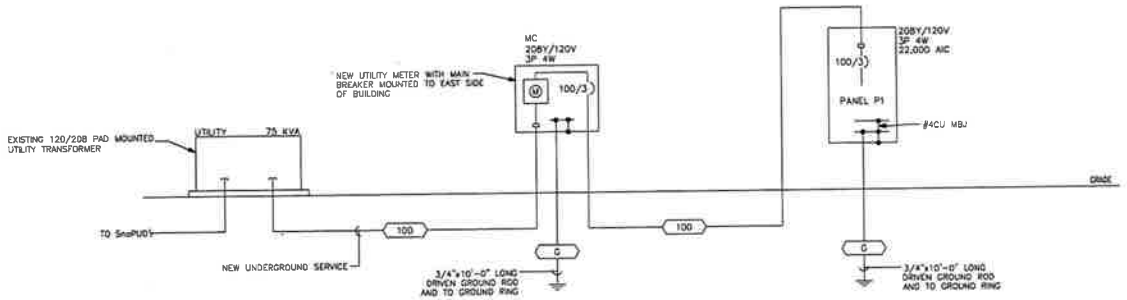
FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	FEEDER SIZE	FEEDER LENGTH
UTILITY	23,132	–	120V		
MC	12,923	22,000	120V	#1	35'
P1	5,042	22,000	120V	#1	92'

FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
100	100	1-1/2"C.,3#1,#1N.,#6G	MC, P1
G	-	3/4"C.,#6G	-

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE
ALL NEW CONDUCTORS SHALL BE COPPER WITH THHN INSULATION



3 ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE

1. INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE OF WASHINGTON LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT, ALL LATEST ISSUE, AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S[illegible]-401, I.C.E.A. P81-570, & LOCAL PUD.
2. PROVIDE A METER BASE PER LOCAL UTILITY STANDARDS. MOUNT TO NEW H-FRAME
3. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT; SCHEDULE 40, TYPE 1, CONFORMING TO UL ARTICLE 651; WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED T PIPE; SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS, (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK).
4. CONDUIT USED INDOORS SHALL BE E.M.T., AND RIGID GALVANIZED STEEL FOR OUTDOORS COUPLINGS SHALL BE RIGID STEEL AND COMPRESSION TYPE FOR E.M.T. SET SCREW FITTINGS ARE NOT PERMITTED. FOR ALL STUBS-UPS, USE RIGID GALVANIZED STEEL CONDUIT.
5. WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY NEC. THERE WILL BE NO SPLICES ALLOWED.
   PROVIDE HDPE PULLING HAND HOLES AS NEEDED.
6. CONTRACTOR SHALL PROVIDE TEST OF THE GROUNDING SYSTEM BY CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS. ALL ABOVE GRADE INTERIOR GROUNDING CONNECTORS SHALL BE DOUBLE-LUG COMPRESSION TYPE. ALL BELOW GRADE AND EXPOSED EXTERIOR GROUNDING CONNECTIONS TO PERMANENT EQUIPMENT AND FIXED BUILDING ELEMENTS SHALL BE CADWELD TYPE. CARE SHALL BE TAKEN TO REVIEW CONNECTION LOCATIONS AND MATERIAL TYPES TO AVOID POSSIBLE GALVANIC CORROSION. ALL EXPOSED GROUNDING CONNECTIONS TO BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS "NO-OXY", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER. ALL BOLTS, WASHERS AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
7. ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-3 OR AS PER NOTE 6 ABOVE.
8. ALL JUNCTION AND OUTLET BOXES TO BE LABELED WITH KROY TAPE, OR EQUAL, DESIGNATING ALL CIRCUIT NUMBERS CONTAINED IN EACH BOX.
9. CONTRACTOR TO ENSURE ILC PROVIDED WITH (2) INTERNAL TVSS.
10. CONTRACTOR SHALL COORDINATE WITH SITE SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. WHEREVER POTENTIAL CONFLICTS/ INTERFERENCES EXIST, HAND EXCAVATE TO AVOID DAMAGE. CONTACT ALL UTILITIES TO LOCATE UNDERGROUND PIPING IN PUBLIC ROW.
11. VERIFY THAT A.I.C. OF THE UTILITY DOES NOT EXCEED THE A.I.C. RATING OF THE PROVIDED EQUIPMENT SHELTER PACKAGE. IF OVER 10KAIC, PROVIDE FUSIBLE SERVICE ENTRANCE SWITCH AND CONFIRM LOWERING OF AIC TO ACCEPTABLE LEVELS.
12. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
13. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

GENERAL NOTES

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE	IMC	INTERMEDIATE METALLIC CONDUIT
BCW	BARE COPPER WIRE	MGB	MASTER GROUND BAR
DWG	DRAWING	PCS	PERSONAL COMMUNICATION SYSTEM
EMT	ELECTRICAL METALLIC TUBING	RGS	RIGID GALVANIZED STEEL
GEN	GENERATOR	RWY	RACEWAY
IGR	INTERIOR GROUND RING (HALO)	TYP	TYPICAL

- –UE– UNDERGROUND RACEWAY
- FUSED DISCONNECT
- TRANSFORMER
- FEEDER KEY
- GROUND
- PANELBOARD
- (M) METER
- ELECTRICAL EQUIPMENT ENCLOSURE
- ELECTRICAL SERVICE WEATHERHEAD
- TELEPHONE SERVICE WEATHERHEAD
- GROUND CONDUCTOR
- PANELBOARD
- FUSED DISCONNECT
- LOCAL DISCONNECT
- GROUND ROD
- EXOTHERMIC WELD
- COMPRESSION TYPE CONNECTION
- TEST WELL
- AUTOMATIC TRANSFER SWITCH
- (G) STAND-BY GENERATOR

LEGEND / ABBREVIATIONS

verizon

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PROJECT MANAGER: EJC
PREPARED BY: WJA
APPROVED BY: EJC

WJA	10/31/17	ISSUED FOR PRELIM REVIEW

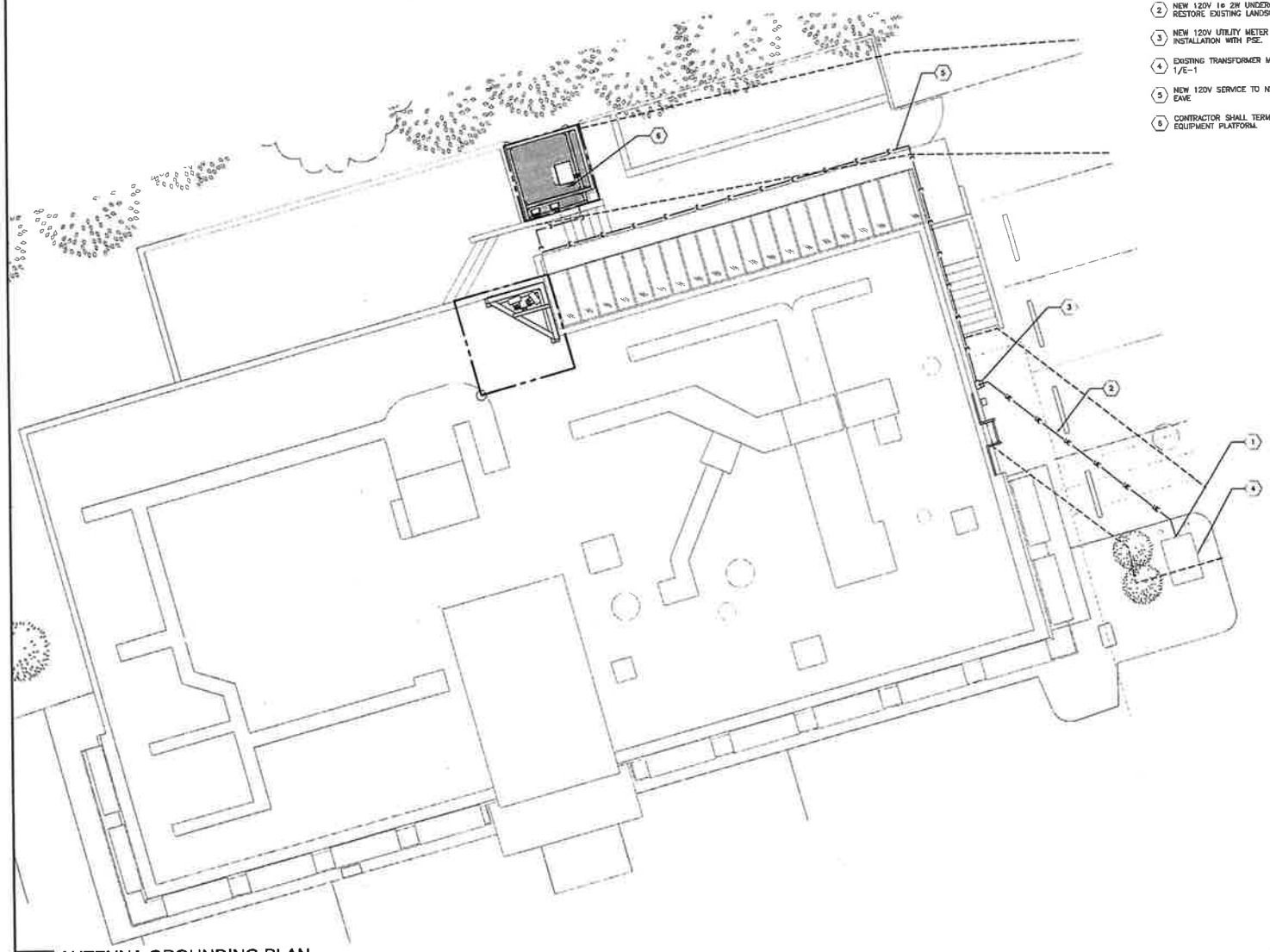
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SHEET NAME
ELECTRICAL ONE-LINE DIAGRAM & NOTES

SHEET NUMBER
E-1.0

PROJECT NUMBER



KEY NOTES:

1. CONTRACTOR SHALL TERMINATE NEW RACEWAY AT EXISTING 208/120V PAD MOUNTED UTILITY TRANSFORMER. COORDINATE INSTALLATION WITH PUGET SOUND ENERGY (PS). CONTRACTOR SHALL REMOVE EXISTING LANDSCAPING LOCATED IN PSE OF TRANSFORMER IN ACCORDANCE WITH PSE REQUIREMENTS.
2. NEW 120V 1ø 2W UNDERGROUND SERVICE MINIMUM 36" BELOW FINISH GRADE. RESTORE EXISTING LANDSCAPING TO EXISTING CONDITION.
3. NEW 120V UTILITY METER WITH MOUNTED TO EXISTING EAST WALL. COORDINATE INSTALLATION WITH PSE.
4. EXISTING TRANSFORMER MOUNTED TO CONCRETE PAD. SEE ONE LINE DIAGRAM 1/E-1
5. NEW 120V SERVICE TO NEW EQUIPMENT LOCATED ON SUB-BASEMENT EXTERIOR EAVE
6. CONTRACTOR SHALL TERMINATE AT NEW CABINET LOCATED ON NEW RAISED EQUIPMENT PLATFORM.

3 ANTENNA GROUNDING PLAN

SCALE: 3/16" = 1'-0" (22x34), 3/8" = 1'-0" (11x17)

verizon

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PROJECT MANAGER:	EJC
PREPARED BY:	WJA
APPROVED BY:	EJC

WJA	5/24/18	ISSUED FOR PRELIM REVIEW
WJA	5/8/18	ISSUED FOR PRELIM REVIEW
WJA	4/19/18	ISSUED FOR PRELIM REVIEW
WJA	4/12/18	ISSUED FOR PRELIM REVIEW
WJA	3/30/18	ISSUED FOR PRELIM REVIEW

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SHEET NAME
ELECTRICAL SITE PLAN & NOTES

SHEET NUMBER
E-2.0

PROJECT NUMBER
20171573545

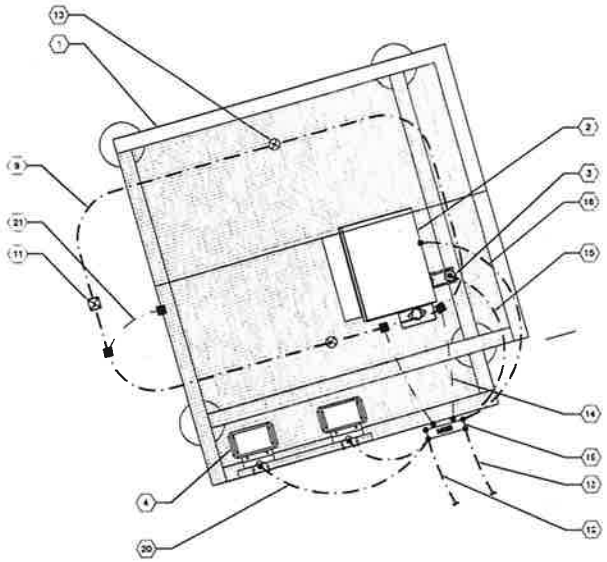
GENERAL NOTES:

1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COVERED WITH TWO (2) COATS OF SHERWIN WILLIAMS GALVANITE B350W3 OR EQUAL.
2. ALL ELECTRICAL CADWELD AND MECHANICAL GROUND CONNECTIONS WILL HAVE NON-OXIDATION COMPOUND APPLIED TO CONNECTION.
3. ANY METAL OBJECTS WITHIN 6 FEET OF THE EXTERNAL GROUND RING SHALL BE GROUNDED.
4. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
5. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALLED AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED, BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
8. OBSERVE NEC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
9. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
10. SITE TO COMPLY WITH R56 STANDARDS FOR GROUNDING.

LEGEND	
ITEM	DESCRIPTION
⊗	3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C. (HARGER #5810).
☒	CADWELD INSPECTION WELL (SEE DETAIL 3/E-4).
— —	#2 AWG TINNED SOLID BARE COPPER WIRE, MINIMUM 30" BELOW GRADE, OR 6" BELOW LOCAL FROST LINE, U.N.O.
— ■ —	CADWELD/EXOTHERMIC WELD CONNECTION.
— ● —	MECHANICAL CONNECTION.

KEY NOTES:

1. (P) 7'-8" X 8'-0" RAISED EQUIPMENT PLATFORM.
2. (P) VZW EQUIPMENT CABINET
3. (P) VZW GPS ANTENNA
4. (P) VZW RRUS
5. (P) VZW ANTENNA
6. (P) VZW ANTENNA SCREENWALL
7. (P) VZW METER
8. (E) LOCAL METER OTHER
9. (P) #2 BARE SOLID TINNED COPPER CONDUCTOR LOCATED 30" BELOW FINISH GRADE FOR EXTERIOR GROUND RING EQUIPMENT PLATFORM.
10. (P) 3/4" DIAMETER X 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C. (3 / A-3.1)
11. (P) GROUND INSPECTION AND TEST WELL. SEE DETAIL FOR CONSTRUCTION REQUIREMENTS. MIN (1) ONE PER GROUND RING. (6 / A-3.1)
12. (P) COLLECTION GROUND BAR GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT MASTER GROUND BAR TO MECHANICAL CONNECTION AT ANTENNA COLLECTION GROUND BAR, TYP. (4&5 / A-3.1)
13. (P) METER GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR CADWELDED TO NEW GROUND ROD AND PROVIDE EXOTHERMIC WELD CONNECTION TO EQUIPMENT PLATFORM GROUND RING.
14. (P) #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO MECHANICAL CONNECTION AT NEW MASTER GROUND BAR.
15. (P) GPS GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT MASTER GROUND BAR TO MECHANICAL CONNECTION AT GPS ANTENNAS, TYP.
16. (P) EQUIPMENT CABINET GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT MASTER GROUND BAR TO MECHANICAL CONNECTION AT EQUIPMENT CABINET, TYP.
17. (P) CORPORATE COLLINEAR ANTENNA GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT CORPORATE COLLINEAR ANTENNAS, TYP.
18. (P) COLLECTION GROUND BAR MOUNTED AT ANTENNA LEVEL OF TOWER. PROVIDE #2 STRANDED GREEN INSULATED COPPER CONDUCTOR TO MECHANICAL CONNECTION AT MASTER GROUND BAR AT EQUIPMENT PLATFORM.
19. (P) MASTER GROUND BAR MOUNTED AT EQUIPMENT PLATFORM. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT EXTERIOR NEW GROUND RING. (5&9 / A-3.1)
20. (P) CORPORATE COLLINEAR RRUS GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT CORPORATE COLLINEAR RRUS, TYP.
21. (P) #2 BARE SOLID TINNED COPPER CONDUCTOR FOR GROUND CONNECTION TO MASTER GROUND BAR.



3 ANTENNA GROUNDING PLAN

SCALE: 3/4" = 1'-0" (22x34), 3/8" = 1'-0" (11x17)

verizon

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PROJECT MANAGER: EJC

PREPARED BY: WJA

APPROVED BY: EJC

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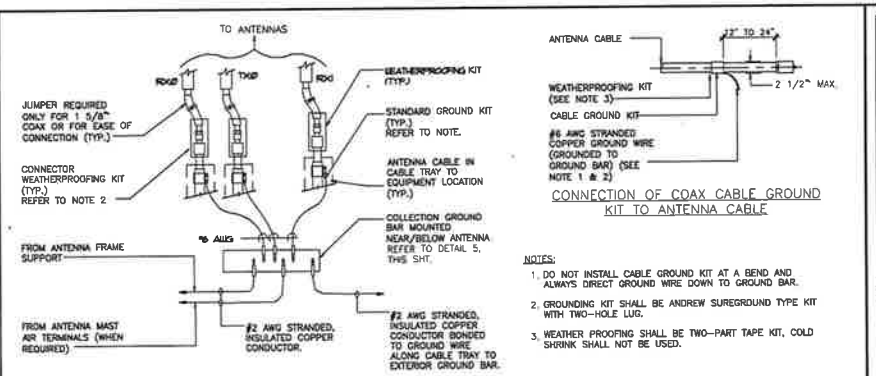
SHEET NAME
GROUNDING PLAN & NOTES

SHEET NUMBER
E-3.0

PROJECT NUMBER
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1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. ALL GROUNDING SHALL CONFORM TO THE CURRENT VERIZON WIRELESS STANDARDS.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. PREFABRICATED SHELTER WILL BE PROVIDED WITH INTERNAL WIRING AND EQUIPMENT INSTALLED. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO DRAWINGS PROVIDED BY SHELTER MANUFACTURER.
6. FOR INTERIOR EQUIPMENT LAYOUT AND LOCATION, SEE SHELTER MANUFACTURER'S DRAWINGS AND SPECIFICATION. IN CASE OF CONFLICT THE DRAWINGS GOVERN.
7. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
8. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
9. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
10. ALL GROUNDING CONNECTORS TO BE CLEAN AND FREE OF PAINT AT THEIR MATING SURFACES AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
11. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
12. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 3/4"Ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 18" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
13. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
14. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
15. GROUND RING SHALL BE LOCATED A MINIMUM OF 24" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
16. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE.
17. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.
18. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING
19. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM)
20. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
21. MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
22. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
23. ENSURE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
24. GROUND BARS SHALL NOT BE FIELD MODIFIED.
25. ALL HORIZONTAL FENCE SECTIONS TO BE GROUNDED WITH 8" SINGLE BARREL GROUND STRAPS.
26. USE PANI SCHEME FOR LOADING ON MGB AS DISCUSSED IN NSTD 119, 33 & 36.

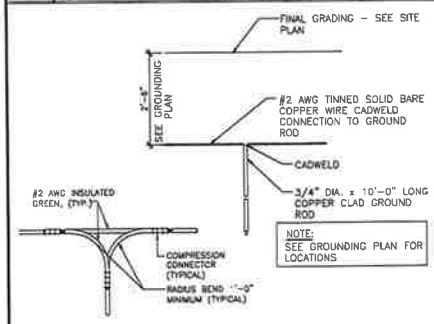
1 GENERAL NOTES
NOT TO SCALE



CONNECTION OF COAX CABLE GROUND KIT TO ANTENNA CABLE

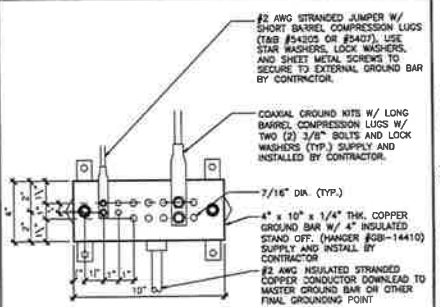
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

2 COAXIAL CABLE GROUND WIRE TO GROUND BAR CONNECTION
NOT TO SCALE

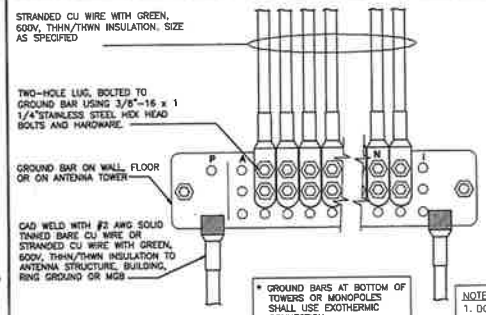


HORIZONTAL GROUND RING SPLICE

3 GROUND RING DETAIL
NOT TO SCALE



4 COLLECTION GROUND BAR
NOT TO SCALE



PANI SCHEME SPECIFICATIONS:

PRODUCER (P)
CONNECTS TO WIRELESS EQUIPMENT CABINETS, CABLE ENTRANCE GROUND BAR (CEGB), MAIN DISTRIBUTION FRAME GROUND BAR (MDFB), AND STANDBY ENGINE-GENERATOR SET FRAME AND OTHER NOISE PRODUCING EQUIPMENT

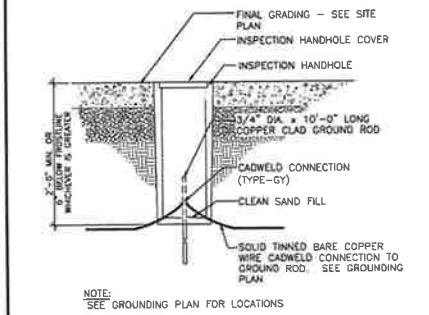
ABSORBER (A)
CONNECTS TO THE EARTH ELECTRODE SYSTEM INCLUDING CENTRAL OFFICE GROUND GRID, BUILDING STRUCTURAL GROUND, METALLIC WATER PIPE SYSTEM, ANTENNA SUPPORTING STRUCTURE GROUND SYSTEM, AND ELECTRICAL SERVICE ENTRANCE GROUND

NON-ISOLATED (N)
CONNECTS TO EQUIPMENT NOT IN AN ISOLATED GROUND ZONE (IGZ) SUCH AS CBN EQUIPMENT FRAME GROUNDS AND DC GROUND CONDUCTORS FOR DC POWER SYSTEMS THAT SERVE CBN OR BOTH CBN AND IBN EQUIPMENT

ISOLATED (I)
CONNECTS TO THE SINGLE POINT CONNECTION BAR (SPCB), FOR IBN EQUIPMENT

NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR
2. WEATHER PROOFING SHALL BE ANDREWS. (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.)

5 GROUND BAR CONNECTION DETAIL AND NOTES
NOT TO SCALE

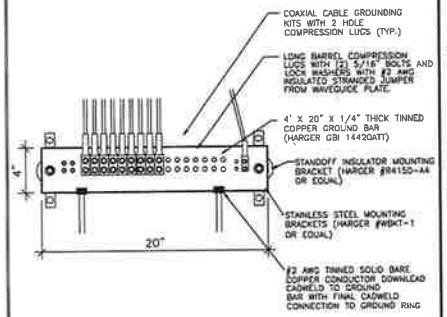


NOTE:
SEE GROUNDING PLAN FOR LOCATIONS

6 CADWELD INSPECTION WELL
NOT TO SCALE

7 NOT USED
NOT TO SCALE

8 NOT USED
NOT TO SCALE



9 MASTER GROUND BAR
NOT TO SCALE

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