



RESOLUTION NO. U-11161

1 A RESOLUTION related to the purchase of materials, supplies, equipment and
2 the furnishing of services; authorizing the City officials to enter into
3 contracts and, where specified, waive competitive bidding requirements,
4 authorize sale of surplus property, or increase or extend existing
5 agreements.

6 WHEREAS the City of Tacoma, Department of Public Utilities, requested
7 bids/proposals for the purchase of certain materials, supplies, equipment and/or
8 the furnishing of certain services, or proposes to purchase off an agreement
9 previously competitively bid and entered into by another governmental entity, or
10 for the sales of surplus, or desires to increase and/or extend an existing
11 agreement, all as explained by the attached Exhibit "A," which by this reference
12 is incorporated herein, and

13 WHEREAS in response thereto, bids/proposals (or prices from another
14 governmental agreement) were received, all as evidenced by Exhibit "A," and

15 WHEREAS the Board of Contracts and Awards and/or the requesting
16 division have heretofore made their recommendations, which may include
17 waiver of the formal competitive bid process because it was not practicable to
18 follow said process, or because the purchase is from a single source, or there is
19 an emergency that requires such waiver, and/or waiver of minor deviations, and
20 in the case of sale of surplus, a declaration of surplus has been made certifying
21 that said items are no longer essential for continued effective utility service, as
22 explained in Exhibit "A," and

23 WHEREAS the Director requests authorization, pursuant to
24 TMC 1.06.269 A, to amend contract amounts up to \$200,000 and to approve
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term extensions and renewals for all items contained in Exhibit "A;" Now,
therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

Sec. 1. That the Public Utility Board of the City of Tacoma hereby concurs and approves the recommendations of the Board of Contracts and Awards and/or the requesting division, and approves, as appropriate: (1) the purchase and/or furnishing of those materials, supplies, equipment or services recommended for acceptance; (2) the sale of surplus materials, supplies or equipment recommended for acceptance; (3) the Interlocal agreement that authorizes purchase off another governmental entity's contract; (4) the increase and/or extension of an existing agreement, and said matters may include waiver of the formal competitive bid process and/or waiver of minor deviations, all as set forth on Exhibit "A," and authorizes the execution, delivery and implementation of appropriate notices, contracts and documents by the proper officers of the City for said transactions, and (5) the administrative authority of the Director, per TMC 1.06.269 A., to amend contract amounts up to \$200,000 and to approve term extensions and contract renewals for all items in Exhibit "A."

Sec. 2. That the Public Utility Board finds that this Resolution is necessary, routine, and consistent with Governor Inslee's emergency proclamation issued March 24, 2020 and recently extended, suspending portions of the Open Public Meetings Act through May 31, 2020.

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Approved as to form:

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/s/

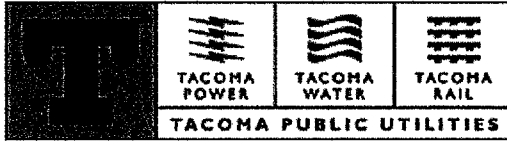
Chief Deputy City Attorney

Clerk

Chair

Secretary

Adopted



RESOLUTION NO.: U-11161
ITEM NO.: 1
MEETING DATE: MAY 13, 2020

TO: Board of Contracts and Awards
FROM: Scott Dewhirst, Utilities Dir Dep Wtr Supt
Corey Bedient, Water Assistant Division Manager
COPY: Public Utility Board, Director of Utilities, Board Clerk, SBE Coordinator, LEAP
Coordinator, and Alex Clark, Finance/Purchasing
SUBJECT: AMI Meter Box Lid Procurement
Request for Bids Specification No. WA20-0115F, Contract No. CW2235998 –
May 13, 2020
DATE: 5/01/2020

RECOMMENDATION SUMMARY:

Tacoma Public Utilities (TPU) – Water Division (Tacoma Water), recommends a contract be awarded to HD Fowler Company, Lacey, WA, for purchase of 91,800 water meter box lids comprising of three unique sizes and types which will accommodate Sensus meter radio probes in conjunction with TPU Automated Meter Infrastructure (AMI) program, in the amount of \$ 2,190,976.56, plus applicable taxes. The contract duration is for the length of the A.M.I. project, estimated to be 18 months.

BACKGROUND:

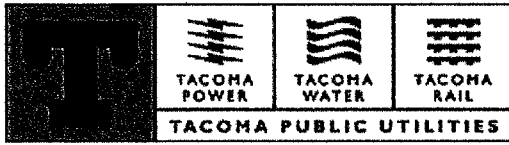
In 2019 -2020 Tacoma Water, in preparation for the (AMI) program, instigated a field survey program of over 105,000 water meters, boxes and lids. It was determined that the vast majority of water meter boxes were in good condition and did not need to be replaced. The meter box lids however, do need to be replaced to accomidate the new Sensus meter transmitter. Drilling the existing lids to accommodate the transmitters functionality is not an option as the structural integrity of the lids would be compromised. Due to the results of our meter survey, we were able to determine what types of meter box lids would need to be replaced.

On March 11, 2020 Tacoma Water solicited proposals for the replacement of 91,800 meter box lids which would allow for the installation of the AMI Sensus 520M Transmitter. Without these meter lid the AMI program for our water system cannot be realized.

This contract will last for the duration of the AMI project, estimated at 18 months, these meter box lids will be installed along with new water meters and transmitters in existing water meter boxes by Tacoma's Automated Meter Infrastructure (A.M.I.) installers. Timeline for estimated quantities and delivery dates for product was included in the proposal.

COMPETITIVE SOLICITATION:

Request for Bid Specification No. WA20-0115F was opened on April 7th, 2020. Three companies were invited to bid in addition to normal advertising of the project. Six submittals were received. HD Fowler Company submitted a bid that resulted in the lowest evaluated submittal. The table below reflects the amount of the total bids by respondents.



<u>Respondent</u>	<u>Location</u>	<u>Submittal Amount</u>
HD Fowler Company	Lacey, WA	\$2,190,976.56
H2 Pre-Cast Inc.	E. Wenatchee, WA	\$2,278,385.00
Oldcastle Infrastructure	Atlanta, GA	\$2,283,385.80
Nicor, Inc.	Dripping Springs, TX	\$2,561,973.68
General Pacific, Inc.	Fairview, OR	\$2,797,914.08
Armocast Products Company	Chatsworth, CA	\$2,800,618.39

Pre-bid Estimate: \$3,100,000 was pre-bid estimate amount.
The recommended award is 29.5 percent below the pre-bid estimate.

CONTRACT HISTORY:
New Contract

FISCAL IMPACT:



EXPENDITURES:

FUND NUMBER & FUND NAME *	COST OBJECT (CC/WBS/ORDER)	COST ELEMENT	TOTAL AMOUNT
4600 – Water Fund	WTR-00627	Various	\$2,190,976.56
TOTAL			

REVENUES:

FUNDING SOURCE	COST OBJECT (CC/WBS/ORDER)	COST ELEMENT	TOTAL AMOUNT
4600 Water Operating Fund	581200	6311140	2,190,976.56
TOTAL			2,190,976.56

FISCAL IMPACT TO CURRENT BIENNIAL BUDGET: \$ 240,000.00 for 2019/2020

ARE THE EXPENDITURES AND REVENUES PLANNED AND BUDGETED? Yes, the expenditures have been planned and budgeted for 2019/2020 biennium. Expenditures for 2021/2022 are included in the biennium 2021/2022 budget request.

IF EXPENSE IS NOT BUDGETED, PLEASE EXPLAIN HOW THEY ARE TO BE COVERED.

NA

APPROVED:

Jackie Flowers, Director of Utilities



RESOLUTION NO. U-11162

1 A RESOLUTION relating to Tacoma Water; authorizing execution of the
2 Memorandum of Agreement with the Information Technology Department,
3 replacing and superseding the January of 2002 Memorandum of Agreement
4 between Tacoma Public Utilities and the former General Services
5 Department.

6 WHEREAS the Information Technology Department (IT Department) of
7 the City of Tacoma owns and operates a public safety antenna tower,
8 communications equipment, generator and a communications building
9 (collectively the "Antenna Tower Facilities") located at the site of the Tacoma
10 Water Indian Hills Reservoir, 5225 NE Tower Drive in Tacoma (Reservoir Site),
11 and

12 WHEREAS the Antenna Tower Facilities occupy the Reservoir Site under
13 a memorandum of agreement between the former General Services Department
14 and Tacoma Public Utilities dated January 14, 2002, and

15 WHEREAS Tacoma Water and the IT Department desire to replace and
16 supersede the current memorandum of agreement with a new and updated
17 Memorandum of Agreement (MOA) that will, accommodate the King County
18 Telecommunications Site License Agreement and other additional uses and
19 occupancies of the Antenna Tower Facilities, provide for revenue sharing, update
20 the annual transfer fees charged to the IT Department for use and occupancy of
21 the Reservoir Site, and provide for a new term of 30 years, provided that,
22 Tacoma Water shall retain the right to require relocation or removal of the
23 Antenna Tower in the event that Tacoma Water requires the use of the site for
24 public utility purposes, and
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WHEREAS Tacoma Water and the IT Department recommend that the Tacoma Public Utility Board approve the MOA in substantially the form of the agreement on file with the Clerk; Now Therefore,

BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

Sec. 1. That the proper officers of Tacoma Public Utilities are authorized to execute the memorandum of agreement in substantially the form of the agreement on file with the Clerk of the Public Utility Board.

Sec. 2. That the Public Utility Board finds that this Resolution is necessary, routine, and consistent with Governor Inslee's emergency proclamation issued March 24, 2020 and recently extended, suspending portions of the Open Public Meetings Act through May 31, 2020.

Approved as to form:

Chair

/s/
Chief Deputy City Attorney

Secretary

Clerk

Adopted _____



Board Action Memorandum

TO: Jackie Flowers, Director of Utilities
COPY: Charleen Jacobs, Director and Board Offices
FROM:
MEETING DATE: May 13, 2020
DATE: May 1, 2020

SUMMARY: A resolution recommending approval of a new Memorandum of Agreement (MOA) between Tacoma Water and the Information Technology Department to replace and supersede the existing agreement.

BACKGROUND: Tacoma Water and Tacoma General Government executed an MOA dated January 14, 2002, for General Government to occupy a portion of the Tacoma Water Indian Hill reservoir property for use as a radio communications building and tower site for the General Government 800 MHz radio system

At the request of the Information Technology Department (ITD) on behalf of General Government, the ITD and Tacoma Water desire to replace and supersede the current MOA with a new and updated MOA. This MOA is submitted for Board consideration. The new MOA provides for continued use of the building and tower premises for the General Government radio system together with provisions for additional occupancies by other governmental or quasi-governmental agencies and non-governmental entities.

The new MOA provides for continuation of the existing General Government annual fee schedule, annual increases based on the regional CPI and a revenue sharing formula with Tacoma Water for any occupancy fees collected by ITD. Provisions are also included for a new single revenue sharing Water and ITD agreement with Sprint to replace and supersede currently separate Water and ITD agreements for Sprint's use of the tower.

King County has requested use of the building and tower premises for their new Public Safety Emergency Radio Network (PSERN) currently under construction and crucial for interoperability between King County and Pierce County first responders. A separate Site License Agreement between Tacoma Water, ITD and King County is included as an attachment to the MOA.

The MOA term is 30 years with provisions for three additional thirty year renewal terms. Tacoma Water cancellation provisions are included in the event use of the premises is reasonably necessary for Tacoma Water facilities.

If applicable, outline all public and stakeholder outreach efforts undertaken.
Not applicable.

ARE THE EXPENDITURES AND REVENUES PLANNED AND BUDGETED?

There are no Tacoma Water expenditures. Revenues for 2021-2022 will be budgeted.

IF THE EXPENSE IS NOT BUDGETED, PLEASE EXPLAIN HOW THEY ARE TO BE COVERED.

Not applicable.



Board Action Memorandum

IF THE ACTION REQUESTED IS APPROVAL OF A CONTRACT, INCLUDE LANGUAGE IN RESOLUTION AUTHORIZING \$200,000 INCREASE IN ADMINISTRATIVE AUTHORITY TO DIRECTOR?

Not applicable.

ATTACHMENTS: List any attachments (contracts, policies, agreements, etc.).

1. Memorandum of Agreement between Tacoma Water and Information Technology Department

CONTACT: Provide name, title, and phone number of primary contact for this Board action item.

Greg Volkhardt, Water Division Manager. Phone: (253) 502-8533

Provide supervisor's name.

Scott Dewhurst

Provide name of presenter at podium if different from primary contact.

Greg Volkhardt

MEMORANDUM OF AGREEMENT

Between

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

AND

CITY OF TACOMA
INFORMATION TECHNOLOGY DEPARTMENT

This Memorandum of Agreement ("**MOA**"), dated as of the ____ day of _____, 2020, is entered into by and between the City of Tacoma Department of Public Utilities, ("**Tacoma Water**") and the City of Tacoma Information Technology Department ("**ITD**") for the purposes set forth herein; Tacoma Water and ITD may be referred to where appropriate individually as a "**Party**" or collectively as the "**Parties**".

RECITALS

WHEREAS Tacoma Water owns or has other legal rights to certain property including land, improvements to that land, and structures on that land, all as more specifically described in Exhibit "A", legal description (hereafter the "**Property**"), and

WHEREAS ITD owns, manages and operates certain radio communication facilities, more specifically described in Exhibit "B", (Facilities Description), attached hereto (hereafter the "**Facilities**"), which Facilities are located upon that portion of the Property as depicted in Exhibit "C", (Depiction of Premises), attached hereto (hereafter the "**Premises**"), and

WHEREAS the use and occupancy of the Premises for the initial installation and the ongoing management and operation of the Facilities are authorized and subject to that certain memorandum of agreement entered into by and between the Parties and dated the 11th day of January, 2002 (hereafter the "**2002 MOA**"), and

WHEREAS Tacoma Water and ITD desire to replace and supersede the 2002 MOA with this MOA and further desire to provide for additional occupancies of the Premises and Property for installation, maintenance and operation of emergency communications equipment by other governmental or quasi-governmental agencies, and for occupancies by non-governmental entities for installation, maintenance and operation of communications equipment, upon such terms and conditions as are acceptable to Tacoma Water and not inconsistent with or incompatible with the primary water utility purpose of the Property;

NOW THEREFORE, in furtherance of the above stated purposes, and subject to the terms and conditions hereof, Tacoma Water and ITD enter into this Memorandum of Agreement regarding ITD's use and occupancy of the Premises and additional occupancies by other governmental, quasi-governmental and non-governmental parties:

1. **PURPOSE.** This MOA contains the terms and conditions upon which ITD is authorized by Tacoma Water, at IT's sole cost and expense, to use and occupy the Premises for installation, construction, maintenance, repair, replacement, expansion, removal, and operation of its Facilities together with ingress and egress to and from the Premises over and across the Property. This MOA further contains the terms and conditions upon which Tacoma Water, at the request of ITD, has authorized and may in the future authorize, additional occupancies of the Facilities upon the Premises by other governmental, quasi-governmental and non-governmental entities (hereafter "**Additional Occupancies**") for installation, construction, maintenance, repair, replacement, expansion, removal, and operation of emergency and non-emergency communications facilities pursuant to site license agreements (hereafter individually "**Site License Agreement**" or "**SLA**").
2. **TERM.** This MOA will have an Initial Term of thirty (30) years commencing on the ____ day of _____, 2020 (hereafter the "**Effective Date**"). The term of this MOA will be automatically renewed for three (3) additional thirty (30) year Renewal Terms, unless either Party provides written notice to the other Party of its intention not to renew, no less than one hundred and eighty (180) days prior to the expiration of the Initial Term or any Renewal Term. The term of an SLA shall begin on its Commencement Date and will terminate concurrent with the expiration or termination of this MOA without extension thereof, unless otherwise terminated as provided in the MOA or SLA.
3. **TERMINATION.**
 - a. Tacoma Water. Tacoma Water shall have the right to terminate this MOA upon twenty-four (24) months prior notice to ITD, upon Tacoma Water's determination that use of the Premises is reasonably necessary for the installation or construction of Tacoma Water facilities. Prior to giving such notice, Tacoma Water shall make a good faith effort to consider alternatives that would meet the operational needs of Tacoma Water and ITD; provided that, nothing herein shall require Tacoma Water to incur additional costs to undertake such an alternative. Tacoma Water shall further have the right to terminate this agreement in the event that the Property becomes surplus to Tacoma Water and will be disposed of by conveyance to a third party; provided that, in such event Tacoma Water shall provide ITD twenty-four (24) months prior notice of its intent to surplus the property and shall, in a manner consistent with applicable law, make the property available for acquisition by ITD.

- b. ITD. ITD shall have the right to terminate the MOA upon written notice given to Tacoma Water no less than ninety (90) days prior to the effective date of termination. Unless otherwise agreed to by Tacoma Water, ITD shall prior to the effective date of termination, remove its Facilities from the Premises, and cause all other additional occupancies to be removed from the Premises and the Premises restored to its condition prior to the occupancy or to the reasonable satisfaction of Tacoma Water.

4. RIGHT OF ACCESS.

- a. Tacoma Water. Tacoma Water retains the right to unaccompanied access to the Premises to inspect the Premises and Facilities at reasonable times to ensure compliance with this MOA; provided that, Tacoma Water shall provide reasonable advance notice to ITD prior to such entry and inspection except in the event of an emergency, and Tacoma Water shall not have a right to unaccompanied access within the equipment shelter.
- b. ITD. ITD shall have ingress and egress to and from the Premises over and upon the Property twenty-four (24) hours per day, seven (7) days per week; provided that, except in cases of emergency, ITD shall provide advance notice to Tacoma Water Control Center prior to entry and upon exit. Tacoma Water may from time to time adopt reasonable rules of access not inconsistent with this MOA, to ensure the safe, secure and continued operation of its utility facilities located on the Property. Prior to adopting such rules, Tacoma Water shall consult with ITD to ensure that the rules of access are not inconsistent with this MOA and will not unreasonably interfere with ITD's use and operation of its Facilities.

5. INTERFERENCE. Use and occupancy of the Premises by ITD or others granted occupancy pursuant to a SLA or other interlocal agreement (hereafter "**Additional Occupancies**"), and related ingress and egress to and from the Premises over and across the Property, shall not unreasonably interfere with Tacoma Water operations or Tacoma Water's use and occupancy of the Property. Tacoma Water and ITD are responsible for rapidly correcting radio or other electrical interference (hereafter, "**Interference**") caused by their own equipment to the other Party's equipment or equipment of the Additional Occupancies. In the event Interference occurs, Tacoma Water and ITD will participate in solving the problem by providing technical personnel and test equipment to locate the source of the specific problem within a reasonable amount of time and will work collaboratively with one another to resolve the Interference. Interference caused by equipment of Additional Occupancies shall be resolved in accordance with the provisions of the applicable SLA or interlocal agreement; provided that, in the event that such agreement does not provide for resolution of Interference, the Additional Occupancies shall be responsible for rapidly correcting Interference caused by their own equipment to the equipment of Tacoma Water, ITD or other Additional Occupancies. ITD shall take all reasonable precautions which are necessary to prevent bodily injury (including

death) to persons and damage to any property or environment arising in connection with its use and occupancy of the Premises. All of Tacoma Water's property damaged, altered or removed in connection with the ITD's use and occupancy of the Premises shall be promptly repaired, replaced or otherwise restored by ITD to at least as good quality and condition as existed prior to such damage, alteration or removal.

6. **FACILITIES MODIFICATIONS.** Work to complete modifications to the Facilities that would substantially change the physical dimensions or location of the antenna support structure, communications building, fuel storage tanks or base station (a "**Substantial Change**"), shall be subject to the prior approval of Tacoma Water, which approval shall not be unreasonably withheld or delayed. Tacoma Water and ITD agree that maintenance, repairs, modifications, upgrades, updates and like-kind replacements that do not require structural work to the Facilities, do not constitute a substantial change. Tacoma Power may, as a condition of its approval, impose reasonable conditions to ensure that such work does not unreasonably interfere with Tacoma Water's use and occupancy of the Property.
7. **COOPERATION.** Each Party agrees to promptly furnish the other Party with such information reasonably related to the Facilities, Additional Occupancies, Property and Premises as may from time to time be reasonably requested by the other Party. Each Party shall take such prompt action (including, but not limited to, the execution, acknowledgment and delivery of documents) as may reasonably be requested by the other Party for the implementation of continuing performance of this Agreement. ITD and Tacoma Water acknowledge and anticipate that the Work may be interfered with and delayed from time to time on account of the concurrent performance of work by Tacoma Water and ITD. In such event, Tacoma Water and ITD shall provide ten (10) days written notice to the other parties of such work; provided that, if emergency work is involved, verbal notice shall be given as soon as practicable. The Parties shall coordinate their respective Work in such a manner that will cause the least interference and delay with the work of the other Parties.
8. **ADDITIONAL OCCUPANCIES:**
 - a. King County. The Puget Sound Emergency Radio Network System (hereafter "**PSERN System**") serve police, fire and emergency medical service personnel in primarily in King County. The planning, procurement, financing and implementation of the PSERN System is being managed by King County as the lead agency pursuant to an interlocal cooperation agreement between and among King County and the cities of Auburn, Bellevue, Federal Way, Issaquah, Kent, Kirkland, Mercer Island, Redmond, Renton, Seattle and Tukwila (hereafter the "**PSERN Interlocal Agreement**"). The parties to the PSERN Interlocal Agreement anticipate that a non-profit public agency will be formed which entity will assume the ownership and control of the PSERN System following its full acceptance.

King County has, in its role as lead agency for the implementation of the PSERN System, identified the Facilities as a location for construction and operation of emergency communications equipment as part of the PSERN System and has requested that ITD and Tacoma Water consent to use and occupancy of the Facilities and Premises for the construction, installation, maintenance, repair, replacement, expansion, and operation of improvements to the Facilities and Premises for the PSERN System. Such occupancy will include the expansion of the existing antenna support structure, installation of a wireless communications antenna and related facilities and installation of a diesel fuel tank adjacent to the existing communications building (hereafter the "**Communications Building**") located on the Premises. Tacoma Water and ITD have consented to such use and occupancy in accordance with the terms and conditions of the SLA attached hereto as Exhibit "D", (hereafter the "**King County SLA**"). King County has further requested that ITD and Tacoma Water consent to the assumption of the rights, responsibilities and liabilities of King County under the King County SLA by the non-profit public agency formed pursuant to the PSERN Interlocal Agreement to assume ownership and operation of the PSERN System. Tacoma Water and ITD have agreed to such assumption upon the terms and conditions as are set forth in the King County SLA.

Tacoma Water and ITD agree that for the term of the King County SLA, ITD will share with Tacoma Water, 50% of the revenues received by ITD under the King County SLA.

- b. Washington State Patrol. ITD and the Washington State Patrol (hereafter, WSP) have previously entered into an interlocal agreement pursuant to the Interlocal Cooperation Act (RCW Ch. 39.34) (hereafter the "**WSP ILA**") pursuant to which WSP has installed, maintains and operates emergency communications equipment located on the Facilities and Premises. Tacoma Water has agreed to allow WSP to continue its use and occupancy of the Facilities and Premises pursuant to the WSP ILA for the purposes of maintaining and operating its existing emergency communication equipment; provided that, (i) such use and occupancy will terminate upon the expiration or termination of this MOA, (ii) such use and occupancy does not unreasonably interfere with Tacoma Water's use and occupancy of the Property, (iii) WSP complies with the reasonable rules implemented by Tacoma Water to ensure the safe, secure and continued operation of its utility facilities located on the Property, and (iv) all amendments to the WSP ILA must be approved by Tacoma Water, which approval will not be unreasonably withheld or delay. In the event that amendments to the WSP ILA are approved that provide for monetary compensation to ITD for use and occupancy of the Facilities, ITD agrees that such amendments are conditioned upon an amendment to the MOA pursuant to which ITD agrees to share with Tacoma Water 50% of the revenue received and to an annual

adjustment of the rent based upon a mutually agreed (Tacoma Water and ITD) Consumer Price Index formula.

- c. Other Governmental or Quasi-Governmental Occupancies: Tacoma Water and ITD agree that additional occupancies of the Facilities and Premises by governmental or quasi-governmental entities are subject to the approval of Tacoma Water, which approval will not be unreasonably withheld or delay. Any such occupancies will be subject to the terms and conditions of a SLA approved by Tacoma Water and ITD.
- d. Sprint Wireless Lease. Sprint Communications currently occupies the Facilities under an agreement with ITD and the Premises under an agreement with Tacoma Water. ITD agrees to prepare a SLA to replace and supersede the current agreements with Sprint in form and content approved by Tacoma Water. ITD agrees that it will share with Tacoma Water, 20% of the fees collected by ITD under the terms of the Sprint SLA.
- e. Other Wireless Occupancies. Tacoma Water and ITD agree that additional occupancies of the Facilities and Premises installation and operation of for commercial communications systems shall be subject to the approval of Tacoma Water, which approval will not be unreasonably withheld or delay. ITD agrees that it will share with Tacoma Water, 35% of the fees collected by ITD .

9. **ENVIRONMENTAL HAZARDS.** ITD will not bring, keep or transport any environmental hazards to, on or across the Property without Tacoma Water's prior written approval which approval will not be unreasonably withheld, conditioned or delayed, except that ITD may keep on the Premises substances used in back up power units such as batteries and diesel generators commonly used in the wireless telecommunications industry. ITD's use, storage, and handling of any approved substances constituting Environmental Hazards must comply with all applicable laws, ordinances, regulations, Tacoma Water's requirements, and other provisions of this Agreement governing such use, storage, and handling. Under no circumstances will ITD dispose of any Environmental Hazard on the Premises. Environmental Hazard means hazardous substances, hazardous wastes, pollutants, asbestos, polychlorinated biphenyl (PCB), petroleum or other fuels (including crude oil or any fraction or derivative thereof) and underground storage tanks. The term "hazardous substances" shall be defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), and any regulations promulgated pursuant thereto. The term "pollutants" shall be as defined in the Clean Water Act, and any regulations promulgated pursuant thereto. The term "remediate" shall be defined as all actions necessary to satisfy the requirements of the Model Toxics Control Act (WAC 173-340) or CERCLA and any regulations promulgated pursuant thereto.

10. UTILITIES FOR THE SITE. ITD shall have the right, at its sole cost and expense, to obtain electrical and telephone service from any utility company that provides such service to the Premises. ITD may arrange for the installation of a separate meter and main breaker.

11. ANNUAL TRANSFERS.

- a. Initial Transfer. Within 30 days following the Effective Date, ITD agrees to transfer to Tacoma Water, as the true and full value for its use of the Premises for the first year of the initial term of this MOA, the amount of \$32,372.00 (hereafter the “**Initial Transfer**”), plus any and all applicable state and local taxes, including, but not limited to, a leasehold excise tax for which there is no applicable exemption. Provided that, this amount may be offset by a pro-rated amount of the advance payment already made by ITD for use of the Premises under the 2002 MOA. The pro-rated credit shall be calculated by dividing the total annual payment, including applicable taxes by 365 and multiplying that number by the number of days in the annual pre-payment period remaining on the Effective Date.
- b. Annual Transfers. Within 30 days following each annual anniversary of the Effective Date, ITD agrees to transfer to Tacoma Water, as the true and full value for its annual use of the Premises for the ensuing year, the amount of the Initial Transfer, as adjusted pursuant to Subsection 11.c below, plus any and all applicable state and local taxes.
- c. Adjustments. ITD agrees that the Initial Transfer shall be adjusted annually based upon the increase in the annual CPI-U for the Seattle-Tacoma-Bellevue, Washington region.

12. EMERGENCIES. In the event of an emergency relating to the Facilities, ITD shall immediately contact Tacoma Water at the emergency phone number below and take immediate action to correct any safety or use problems, in order to protect persons and property or to allow use of the Property.

13. ENTIRE AGREEMENT. This MOA supersedes the 2002 MOA. There are no representations or understandings of any kind not set forth in this MOA. Any amendments to this MOA or any SLA must be in writing and executed by both parties.

(Remainder of page left intentionally blank)

IN WITNESS WHEREOF, the parties have executed this MOA as of the date first above written.

**CITY OF TACOMA,
DEPARTMENT OF PUBLIC UTILITIES**

BY: _____
Scott Dewhirst,
Superintendent, Tacoma Water

Approved as to form:

Date: _____

Mike Smith, Deputy City Attorney

Date: _____

**INFORMATION TECHNOLOGY
DEPARTMENT**

Daniel Key,
Information Technology Director

Approved as to form:

Date: _____

Chris Bacha, Chief Deputy City
Attorney

Date: _____

Exhibit A, Legal description of the Property
Exhibit B, Facilities Description
Exhibit C, Depiction of Premises
Exhibit D, King County SLA

Exhibit A

(Property and Premises Description)

Property Name: Indian Hill Reservoir

Address of Property: 5225 Tower Drive NE, Tacoma, Washington

Legal Description of Premises, on which the Facilities are located:

THAT PORTION OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 21 NORTH, RANGE 3 EAST, W.M., RECORDS OF PIERCE COUNTY, WASHINGTON, LYING SOUTHEASTERLY OF THE SOUTHEASTERLY MARGIN OF GALLEON DR. NE AND EASTERLY OF THE EASTERLY MARGIN OF TOWNER DR. NE AS SHOWN ON THE PLAT OF HARBOR RIDGE ESTATES DIV. I, AS RECORDED UNDER RECORDING NO. 8902080319, AND SOUTHWESTERLY OF THE WEST MARGIN OF ORCA DR. NE AS SHOWN ON THE PLATS OF HARBOR RIDGE ESTATES DIV. II, AS RECORDED UNDER RECORDING NO. 8911290425, AND HARBOR RIDGE ESTATES DIV. V, AS RECORDED UNDER RECORDING NO. 9107150224, AND NORTHWESTERLY OF THE NORTHERLY LINES OF LOTS 24 AND 31 OF SAID PLAT OF HARBOR RIDGE DIV. II;
EXCEPT THOSE PORTIONS CONVEYED UNDER QUIT CLAIM DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 8804130278;
AND TOGETHER WITH THOSE PORTIONS CONVEYED UNDER STATUTORY WARRANTY DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 8804130277.
SITUATE IN THE COUNTY OF PIERCE, STATE OF WASHINGTON.
APN: 032115 3026

Exhibit B

(Facilities Description)

The Facilities consist of the existing ITD tower, the existing ITD communications building and space adjacent to the communications building for a new 1,000-gallon fuel tank as depicted in the Exhibit C drawings.

Exhibit C

(Depiction of Premises)





RESOLUTION NO. U-11163

1 A RESOLUTION relating to Tacoma Water; authorizing execution of the
2 Telecommunication Site License agreement with King County for installation,
3 operation and maintenance of emergency communication equipment for the
4 Puget Sound Emergency Radio Network system.

5 WHEREAS the Information Technology Department (IT Department) of
6 the City of Tacoma owns and operates a public safety antenna tower,
7 communications equipment, generator and a communications building
8 (collectively the "Antenna Tower Facilities") located at the site of the Tacoma
9 Water Indian Hills Reservoir, 5225 NE Tower Drive in Tacoma (Reservoir Site)
10 and operating under a memorandum of agreement (MOA) between the IT
11 Department and Tacoma Water, and

12 WHEREAS King County, pursuant to an Interlocal agreement with the
13 cities of Auburn, Bellevue, Federal Way, Issaquah, Kent, Kirkland, Mercer Island,
14 Redmond, Renton, Seattle and Tukwila, has been in the process of funding and
15 procuring sites for communication facilities to establish the Puget Sound
16 Emergency Radio Network ("PSERN System") for the purpose of providing public
17 emergency communications services in King County, as authorized by King
18 County Proposition 1 and King County Ordinances 17993, 18074 and 18075, and

19 WHEREAS King County has identified the Reservoir Site and Antenna
20 Tower Facilities as a location for installation of public emergency
21 communications equipment as part of the PSERN System, and

22 WHEREAS King County has proposed that it enter into an agreement with
23 the IT Department and Tacoma Water to extend the height of the Antenna Tower
24
25
26



for installation, maintenance and operations of an emergency communication
1 antenna and appurtenances, to install a 1000 gallon fuel tank for the emergency
2 generator, and to install related communications equipment in the
3 communications building serving the antenna tower, and
4

5 WHEREAS a proposed Telecommunication Site License Agreement
6 (SLA) has been prepared that would authorize King County, and its successor
7 quasi-governmental corporation, to enter into and upon the Reservoir Site, make
8 improvements to the Antenna Tower Facilities in accordance with plans approved
9 by Tacoma Water and the IT Department, and thereafter test, operate, maintain
10 and from time to time replace the communications equipment, in accordance with
11 the terms and conditions of the SLA, and
12

13 WHEREAS the term of the SLA will be coextensive with the 30-year term
14 of a proposed new MOA between Tacoma Water and ITD to be considered
15 contemporaneously with the SLA, provided that, Tacoma Water shall retain the
16 right to require relocation or removal of the Antenna Tower in the event that
17 Tacoma Water requires the use of the site for public utility purposes, and
18

19 WHEREAS King County intends to transfer the PSERN System to a
20 quasi-governmental corporation formed by King County and the participating
21 King County cities, to manage, maintain and operate the PSERN System,
22 accordingly, the proposed SLA provides for the notice of such transfer, and
23

24 WHEREAS Tacoma Water and the IT Department recommend approval of
25 the SLA in substantially the form of the agreement on file with the Clerk; Now,
26 Therefore,



BE IT RESOLVED BY THE PUBLIC UTILITY BOARD OF THE CITY OF TACOMA:

1 Sec. 1. That the proper officers of Tacoma Public Utilities are authorized to
2 execute the Site License Agreement in substantially the form of the agreement on
3 file with the Clerk of the Public Utility Board.
4

5 Sec. 2. That the Public Utility Board finds that this Resolution is
6 necessary, routine, and consistent with Governor Inslee's emergency
7 proclamation issued March 24, 2020 and recently extended, suspending
8 portions of the Open Public Meetings Act through May 31, 2020.
9

10 Approved as to form:

Chair

11 /s/
12 _____
Chief Deputy City Attorney

Secretary

13
14 _____
Clerk

Adopted _____
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Board Action Memorandum

TO: Jackie Flowers, Director of Utilities
COPY: Charleen Jacobs, Director and Board Offices
FROM:
MEETING DATE: May 13, 2020
DATE: May 1, 2020

SUMMARY: A resolution recommending approval of a Site License Agreement (SLA) between Tacoma Water, the Information Technology Department (ITD) and King County for new King County radio equipment at the Indian Hills reservoir.

BACKGROUND: A General Government 800 MHz public safety radio system building and tower currently occupies a portion of the Indian Hill reservoir under a 2002 Memorandum of Agreement (MOA). Terms and conditions of this occupancy have been updated in a new MOA that is currently under consideration for Utility Board approval. The new MOA includes provisions for other governmental and quasi-governmental agencies to occupy the building, tower and same portion of the property.

King County is managing implementation of a new Public Safety Emergency Radio Network (PSERN) in King County and has requested occupancy of the building, tower and property as a site for this radio system. The SLA under consideration for Utility Board approval governs the terms and conditions of this occupancy.

Terms of the SLA provide for existing building and tower space for PSERN radio equipment, space for a new diesel fuel tank adjacent to the building and a 30 feet tower height increase. The SLA term is thirty years with two automatic five year renewals. Tacoma Water cancellation provisions are included in the event use of the property is reasonably necessary by Tacoma Water.

ITD will collect rent in the amount of \$20,000 per year, plus annual increases based on the current CPI. ITD will share 50% of rent collected with Water. Water will be reimbursed for any Water administrative costs incurred during the term of the agreement.

Planning, procurement, financing and implementation of the PSERN system is being managed by King County under an interlocal agreement between King County and the cities of Auburn, Bellevue, Federal Way, Issaquah, Kent, Kirkland, Mercer Island, Redmond, Renton, Seattle and Tukwila. These parties anticipate formation of a PSERN Operator, a quasi-governmental public agency that will assume ownership and control of the PSERN system following its full acceptance. Under specific terms of the SLA, King County may assign the SLA to the PSERN Operator which will be fully responsible for fulfilling SLA terms.

If applicable, outline all public and stakeholder outreach efforts undertaken.

Not applicable.

ARE THE EXPENDITURES AND REVENUES PLANNED AND BUDGETED?

There are no Tacoma Water expenditures. Revenues for 2021-2022 will be budgeted.

IF THE EXPENSE IS NOT BUDGETED, PLEASE EXPLAIN HOW THEY ARE TO BE COVERED.

Not applicable.



Board Action Memorandum

IF THE ACTION REQUESTED IS APPROVAL OF A CONTRACT, INCLUDE LANGUAGE IN RESOLUTION AUTHORIZING \$200,000 INCREASE IN ADMINISTRATIVE AUTHORITY TO DIRECTOR?

Not applicable.

ATTACHMENTS: List any attachments (contracts, policies, agreements, etc.).

1. Site License Agreement between Tacoma Water, Information Technology Department and King County
2. Memorandum of Agreement between Tacoma Water and Information Technology Department

CONTACT: Provide name, title, and phone number of primary contact for this Board action item.

Greg Volkhardt, Water Division Manager. Phone: (253) 502-8533

Provide supervisor's name.

Scott Dewhurst

Provide name of presenter at podium if different from primary contact.

Greg Volkhardt

TELECOMMUNICATION SITE LICENSE AGREEMENT

THIS TELECOMMUNICATION SITE LICENSE AGREEMENT ("Agreement") is made by and between the City of Tacoma, a municipal corporation, ("**Licensor**") and King County, a political subdivision of the State of Washington ("**Licensee**"). Licensor and Licensee may be referred to where appropriate individually as a "**Party**" or collectively as "**Parties.**"

BACKGROUND

- A. Licensor owns or has legal rights to the Wireless Communications Facilities and Property (as defined in Sections 1.S and 1.X, and described in **Exhibit A**, attached hereto), which rights are more particularly described in that certain MOU (as defined in Section 1.P), a copy of which is attached hereto as **Exhibit F**.
- B. Licensee is funding, procuring sites for communication facilities, and along with other municipalities in King County, establishing the Puget Sound Emergency Radio Network ("**PSERN System**") to provide emergency communications services in King County, as authorized by Proposition 1 and King County Ordinances 17993, 18074, and 18075.
- C. Licensee has requested that Licensor consent to Licensee's use and occupancy of the Site (as defined in Section 1.V) for the installation, maintenance, repair, replacement, expansion, update, removal, and operation of Equipment (as defined in Section 1.H) as part of the PSERN System, all as more specifically described in **Exhibit B**, attached hereto.
- D. The Licensor desires to facilitate Licensee's request by providing Licensee access to and use of the Site and Property for the purposes of installing specified Equipment in furtherance of emergency communication services provided through the PSERN System.

NOW THEREFORE, in consideration of the mutual covenants contained in this Agreement and other good and valuable consideration, the Parties agree as follows:

1. DEFINITIONS

A. "Annual Use Fee" means the annual fee for Licensee's use of the Site, as specified in the "Fee Schedule" set forth in **Exhibit C**.

B. "Antenna Support Structure" means Licensor's lattice tower located on the Property, which is designed for the express purpose of accommodating antennas and other communications equipment at a desired height thereon.

C. "Applicable Standards" means:

- (1) those laws, ordinances, rules, regulations, orders, licenses, permits, franchises and other requirements, now or hereafter in effect, of any Governmental Authority; and
- (2) all applicable engineering, industry, and safety standards and codes governing the installation, maintenance, and operation of telecommunications

facilities, water utility facilities, electric utility facilities, the performance of work in and around telecommunications facilities, and electric and water utility facilities. This includes, without limitation, the most current versions of the National Electric Safety Code ("**NESC**"), the National Electric Code ("**NEC**"), and the regulations of the Occupational Safety and Health Administration ("**OSHA**").

D. "Capacity" means the ability of the Wireless Communications Facilities and Site to accommodate additional or replacement Equipment based on Applicable Standards including space, loading, and power consumption considerations.

E. "Communications Building" means Licensor's approximately 12' by 38' structure located on the Premises that houses, among other things, base station and related equipment, power supply, HVAC system and equipment, and a back-up power generator, supporting radio and other wireless communications equipment located on the Antenna Support Structure.

F. "Effective Date" is the date this Agreement is fully executed by both Parties' authorized representatives.

G. "Emergency" means a sudden and unexpected occurrence which presents an imminent threat of harm to persons or property and which requires immediate action to prevent and/or protect from such harm.

H. "Equipment" means Licensee's unmanned radio and/or wireless communications equipment, facilities, and direct support equipment necessary for transmission and reception of radio frequency signals and other communications, as part of the PSERN System. "Equipment" may include Licensee's antennas, microwave dishes, feed lines, base station radios and supporting equipment, fuel tanks, equipment cabinets, backup power batteries, and shelters; provided that, the replacement fuel tank, fuel lines and structures and equipment ancillary thereto, shall become property of the City Information Technology Department, as provided in Section 22.A of this Agreement.

I. "Event of Default" has the same meaning as defined in Section 21 "Default and Remedies."

J. "Force Majeure" means an event or circumstance which materially adversely affects the ability of a Party to perform its obligations under this Agreement, which event or circumstance was not reasonably anticipated and which is not within the reasonable control of, or the result of the negligence of, the Party claiming a Force Majeure event, and which said Party is unable to overcome or avoid or cause to be avoided, by the exercise of due diligence.

K. "Governmental Authority" means any national, federal, state, municipal, county, regional or local government, administrative, judicial or regulatory entity operating under any applicable laws, and includes any department, commission, bureau, board, administrative agency or regulatory body of any government.

L. "Hazardous Substances" means any substance or material defined or designated as hazardous, toxic, toxic waste, dangerous, harmful, hazardous or toxic material, or hazardous or toxic or radioactive substance, or other similar term pursuant to any

federal, state, or local environmental law, regulation, or rule presently in effect or promulgated in the future, as such laws, regulations or rules may be amended from time to time; and it shall be interpreted to include, but not limited to, any substance which after release into the environment will or may reasonably be anticipated to cause sickness, death, or disease.

M. "Hold-Over Period" has the meaning as defined in Section 22 "Surrender of Site; Holding Over."

N. "Initial Term" has the same meaning as defined in Section 4 "Term."

O. "Instrument" means an underlying easement, license, franchise, permit, or other instrument of authorization or conveyance and the MOU.

P. "MOU" shall mean and refer to that certain Memorandum of Agreement entered into by and between the City of Tacoma Department of Public Utilities ("**Tacoma Water**") and the City of Tacoma Information Technology Department ("**ITD**") on or about the _____ day of _____, 2020, setting forth the understanding of Tacoma Water and ITD, regarding ITD's use and occupancy of the Property, together with any amendments thereto, a copy of which is attached hereto as **Exhibit F**.

Q. "Permitted Use" means that use by Licensee of the Site authorized by this Agreement, as specified in Section 3 "Permitted Use" and Exhibit B.

R. "Premises" means that portion of the Property (as defined below) that ITD has been granted use of by Tacoma Water for installation and operation of the Wireless Communications Facilities, which ground space is more specifically described in Exhibit C of the MOU and Exhibit A of this Agreement.

S. "Property" means the Licensor's real property located at 5225 Tower Drive NE, Tacoma, Washington, as more specifically described in Exhibit A attached to the MOU and Exhibit A attached hereto.

T. "Proposal" has the meaning described in Section 16 "Construction; Changes to Site."

U. "Renewal Term" means a five (5) year term after the Initial Term.

V. "Site" means the specified portion of Licensor's Property and Wireless Communications Facilities licensed to Licensee, pursuant to the terms and conditions of this Agreement, as described and depicted in Exhibit B attached hereto.

W. "Termination Date" is the effective expiration or earlier termination date of this Agreement, subject to any applicable Hold-Over Period, in accordance with the terms of this Agreement.

X. "Wireless Communications Facilities" shall mean and refer to the Antenna Support Structure, Communications Building, base station equipment, antennas, antenna arrays, coax cables and feed lines, cable trays and routes, utilities, back-up power generator, fuel storage tanks, and related equipment located on the Premises, now or in the future, that are owned or controlled by Licensor and managed and operated by ITD, or its

successor, for the reception and transmission of radio frequency signals for emergency communications, and other wireless communications.

Y. "Work" means the construction, installation, operation, maintenance, repair, relocation, upgrading, update, replacement, and/or removal of Equipment, and any other work, performed or completed by Licensee in connection with this Agreement.

2. LICENSE

A. License. Subject to the terms and conditions contained in this Agreement, Licensor grants an irrevocable (except as set forth in Sections 4, 14.D, 20, 21, 24, 27 and Exhibit E of this Agreement) license to Licensee to use the Site for the Permitted Use, including but not limited to the exclusive right to use approximately forty (40) square feet of space in the Communications Building and space on the Tower, as more specifically identified on Exhibit B, and the non-exclusive right of ingress and egress over and across the Property to the Equipment from a public right-of-way, as provided for in Section 12 and more specifically described and/or depicted in Exhibit B.

B. No Other Rights Granted. This Agreement shall constitute a license with respect to the Site and does not convey any right, title, or interest in Property or in the Site. The permission granted to use the Site is an irrevocable license (except as set forth in Sections 4, 14.D, 20, 21, 24, 27 and Exhibit E of this Agreement) to do the acts specified in this Agreement, or any applicable amendment, and may only be assigned as set forth in Section 33 "Assignment." Further, no use of the Site, regardless of duration, or payment of any fees or charges required under this Agreement, shall create or vest in Licensee any easement, lease, or other ownership or real property right of any nature in any portion of the Site.

C. Conflict; Order of Precedence. This Agreement is subject and subordinate to the terms and conditions of the MOU. In the event of a conflict between this Agreement and the MOU, the terms and conditions of the MOU shall prevail to the extent of the conflict.

3. PERMITTED USE

A. Permitted Use. The Site may be used by Licensee only for the construction, installation, operation, repair, maintenance, and removal of Equipment and related communications activities as described and depicted in Exhibit B attached ("**Permitted Use**"), and for the upgrade, updating, and replacement of such Equipment as provided at Section 16 of this Agreement. Licensee's Permitted Use and Equipment are subject to the terms and conditions of this Agreement and limited to those uses and Equipment specified in this Agreement. No other use shall be allowed without Licensor's express written consent.

B. Minimum Standards. Licensee shall comply with the minimum standards and specifications described under "**Minimum Standards**" attached at Exhibit D and incorporated into this Agreement.

C. Interference Policy. Licensee shall comply with Licensor's "**Interference Policy Statement**" attached at Exhibit E and incorporated into this Agreement.

D. Restrictions on Permitted Use. Licensee shall not use or permit any use of the Site that will in any way:

- (1) conflict with any applicable law, statute, regulation, ordinance, rule, order or other requirement, now or hereafter in effect, of any Governmental Authority;
- (2) cause or constitute any nuisance, noxious odors, unsafe condition, or environmental hazards in or about the Site;
- (3) interfere with the rights, operations, or disturb the quiet enjoyment of Licensor, other users of the Site, or any other person lawfully on the Site.

E. License to Use Site Is Secondary. Licensee acknowledges that this Agreement and the Permitted Use is secondary to Licensor's utility system operations, maintenance, and related activities which are the primary uses of the Property and Licensor's Wireless Communications Facilities operations, maintenance and related activities.

F. Nonexclusive. All privileges of use granted under this Agreement are non-exclusive, except for the space within the Communications Building and on the Antenna Support Structure that Licensee installs its Equipment in accordance with the terms of this Agreement, which space Licensee has exclusive use of for the Initial Term and all applicable Renewal Terms of this Agreement. Nothing in this Agreement shall be deemed to prohibit or limit the rights of the Licensor to grant leases, additional licenses, or other rights of use and occupancy to any third party, excluding that space Licensee has exclusive use of; provided the use by such third party does not unreasonably interfere with the use and occupancy of the Site by the Licensee.

4. TERM

A. Initial Term. The "Initial Term" of this Agreement will commence on the Effective Date, and shall terminate upon expiration of the Initial Term of the MOU (as defined in Section 2 of the MOU), unless otherwise terminated as provided in this Agreement.

B. Renewal Term. In the event that the MOU is renewed for an additional term of ten (10) years or more, the term of this Agreement shall be automatically renewed for two (2) additional five (5) year "Renewal Terms," unless either Party provides written notice to the other Party of its intention not to renew this Agreement at least one hundred eighty (180) days prior to the expiration of the Initial Term or then current Renewal Term, unless otherwise terminated as provided in this Agreement.

5. FEES

A. Annual Use Fee. Licensee shall pay the Annual Use Fee specified in the "Fee Schedule" attached at Exhibit C. The Annual Use Fee will be paid and adjusted in accordance with the terms provided in Exhibit C.

B. Hold Over. In the event Licensor permits Licensee to remain at the Site past expiration or termination of this Agreement, as provided for in Section 22 "Surrender of Site; Holding Over," Licensee shall pay the monthly license fee in accordance with Section 22.

C. Administrative Cost Reimbursement. Licensee shall reimburse Licensors for any and all costs and expenses incurred by Licensors during the term of this Agreement, arising out of the Work or the use and occupancy of the Site or Wireless Communications Facilities by Licensee ("Administrative Costs"). Examples of reimbursable Administrative Costs include, but are not limited to, costs incurred by the Licensors in the event that the Water Control Center is not contacted by the Licensee or its contractors prior to entry; costs of engineering, design review, inspection, supervision, safety escorts, and transportation, together with administrative overhead, arising out of the Work; and, costs of engineering, design review, inspection, construction, maintenance, supervision, and/or transportation, employee expenses, reproduction and/or graphic services, supplies, telephone service, safety escorts, and other expenses, including administrative overhead, incurred during the term of this Agreement and arising out of the use and occupancy of the Site or Wireless Communications Facilities by Licensee. Such cost reimbursement is in addition to any regulatory fees associated with permitting Licensee's activities on the Property.

6. ADDITIONAL FEES AND TAXES

A. Responsibility to Pay Any Additional Fees including Taxes. Licensee is responsible for paying any and all additional fees and taxes, including but not limited to the "Leasehold Excise Tax" pursuant to Chapter 82.29A RCW (if applicable). Licensee shall have the right to appeal or contest at its sole expense (except as otherwise required by law) all personal property fees and taxes applicable to or incurred in connection with the Work, or the Equipment.

B. Leasehold Excise Tax. Leasehold Excise Tax is calculated by the State of Washington, and assessed against a variety of interests in real property, including, without limitation, permits, licenses and facility use agreements (none of which are leases) using a percentage multiplier of either the use fee/permit fee/license fee required hereunder or an imputed fair market value of the same, and as a result, unless otherwise exempt therefrom, Licensee shall be responsible for any increases in Leasehold Excise Tax that result from an increase in use fee/permit fee/license fee for the Site over the term, or for increases due to an increase in the statutory rate, during the term of this Agreement. If Licensee provides Licensors with a proof of exemption from payment of Leasehold Excise Tax issued by the Washington State Department of Revenue, then Licensee shall not be required to pay Leasehold Excise Tax for the period that such exemption is effective. If the exemption is of limited duration, Licensee shall be required to obtain documented renewal of such exemption and provide such to Licensors in order to claim continued exemption under this Agreement.

7. BILLING

A. Billing Procedure.

(1) First Year: The first year Annual Use Fee for Licensee's use of the Site shall be prorated to cover the period beginning on the Effective Date and ending on December 31st of that same year. This first year Annual Use Fee shall be paid to Licensors within thirty (30) days of receipt of an invoice therefor, after the Effective Date.

(2) Subsequent Years: In subsequent years, the Annual Use Fee for Licensee's use of the Site will cover a period of January 1 – December 31, billed in advance.

(3) Annual Use Fees: Annual Use Fees will be invoiced by the Licensor with an effective date of January 1st and is due on or before February 1st of each year. Licensor will invoice Licensee for reimbursement of Administrative Costs as they arise.

(4) Final Year: Licensor shall invoice or credit Licensee on a prorated basis as appropriate.

B. Payment. Licensee shall pay all invoices within thirty (30) calendar days of receipt, or if the Annual Use Fee then on or before February 1st of the current calendar year. All payments shall be made in immediately available funds payable to Licensor (City of Tacoma), or by wire transfer to a bank named by Licensor. If Licensor does not receive payment for any fees or other amount owed within thirty (30) calendar days (or February 1st, as the case may be) after it becomes due, the Licensee shall pay interest to Licensor at the lesser rate of one percent (1%) per month, or the maximum interest allowed by law, on the amount past due.

C. Preservation of Payment Obligations. All payment obligations incurred under this Agreement shall be preserved until satisfied.

8. EQUIPMENT AND WORK

A. Licensee Cost and Expense. Work will be undertaken at Licensee's sole cost and expense, and, unless otherwise agreed to in writing by the Parties, Licensee shall furnish all personnel, supervision, labor, transportation, tools, equipment and materials for the Work.

B. Licensor Employees. Licensee shall not independently hire any employee of Licensor to perform any of the Work (e.g., other than in the course of his or her employment with Licensor with respect to Work that Licensor agrees to perform for Licensee).

C. Equipment. Equipment shall be of high quality, safe, and used only in conformance with manufacturers' and installers' guidelines.

D. Performance of Work. Licensee shall perform Work in a workmanlike and skillful manner. Licensee shall ensure that all personnel who perform the Work shall be fully experienced and properly qualified. Licensee shall, if so requested by Licensor, remove from the Site any personnel whom Licensor finds to be incompetent, careless or unsafe.

E. Work Correction or Replacement / Refusal to Perform Work. Licensee shall promptly and satisfactorily correct or replace any Work or Equipment found to be defective or not in conformity with the requirements of this Agreement. If Licensee fails or refuses to perform any Work required by this Agreement or to make any such corrections or replacements, Licensor may, after ten (10) business days' notice to Licensee or sooner, upon Licensor's determination of an Emergency, perform such Work and make such corrections and replacements in coordination with Licensee at

Licensee's sole risk and expense and Licensee shall reimburse Licensor for the entire expense thereby incurred.

F. Adverse Impact; Interruption. Work or Equipment must not adversely affect the structural integrity of the Wireless Communications Facilities or any structure or improvement on the Site or the maintenance of the Site or maintenance of any structure or improvement of the Site, except in ways approved in advance by the Licensor. Licensee will use best efforts to minimize the aesthetic impact of its Equipment.

G. Disruption; Indemnity. Licensee warrants that the Work will not disrupt Licensor's, or its licensee's, use or operation of the Wireless Communications Facilities or Property, except in ways approved in advance by the Licensor. In the event of such disruption or interruption, Licensee shall immediately upon becoming aware of such disruption, give notice of such disruption to Licensor and suspend all such Work giving rise to the disruption or interruption until such time as the Licensor authorizes Work to continue, which authorization shall not be unreasonably delayed.

To the fullest extent allowed by law, the Licensee agrees to indemnify, defend and hold harmless the Licensor, its officers and employees, from and against any and all claims for damages, litigation or loss, including but not limited to property damage, personal injury (including death), service interruption, taxes, special charges by others, penalties, punitive damages, or expenses (including reasonable attorney's fees and all other costs and expenses of litigation)(hereafter "Losses"), to the Licensor arising in connection with the Licensee's, its employees', agents', or contractors' disruption to use or operation of Licensor's Wireless Communications Facilities or Property, or the use or operation of wireless communications facilities of third party licensees occupying the Wireless Communications Facilities; provided that, such duty shall not apply to Losses caused by the gross negligence of the Licensor or the gross negligence of its employees or officers occurring within the scope of their employment.

H. Labor. Licensee hereby acknowledges that Licensor employs workers covered by one or more collective bargaining agreements. In the event of any actual or potential labor dispute between Licensor and its workers that is, in whole or in part, based upon or otherwise arises out of the performance of the Work or this Agreement, Licensee will cooperate with Licensor as is reasonable.

9. COMPLIANCE AND APPLICABLE STANDARDS

A. Compliance. Licensee shall, at its expense, comply with all Applicable Standards in connection with Licensee's use of the Site.

B. Compliance Obligations of Contractors. Licensee shall ensure that all contractors hired by or acting on behalf of Licensee comply with all Applicable Standards.

C. Licensor Regulations. Licensor's policies, rules, and regulations pertaining to use of its Property, the Site, and the Wireless Communications Facilities shall be provided by Licensor to Licensee (i) on or prior to the Effective Date, and (ii) on request; which may from time to time be reasonably modified, updated, and prescribed by Licensor only after at least thirty (30) days' prior written notice to Licensee.

D. Compliance Evidence. Licensee shall furnish to Licensor such documents that it may reasonably require to effect or evidence compliance. All laws, regulations and orders required to be incorporated in agreements of this character are hereby incorporated herein by this reference. Compliance with this Section 9, "Compliance and Applicable Standards" shall be the sole responsibility of Licensee and a continuing condition of the use of the Site by Licensee.

E. Applicable Law. Unless expressly and affirmatively pre-empted by federal law and/or regulation specifically applicable to the subject matter identified, this Agreement shall be governed by and construed in accordance with the laws of the State of Washington, which shall include all Applicable Standards.

F. Compliance. With respect to any and all Equipment pursuant to this Agreement, and in the performance of Work related thereto and/or the operation or maintenance of Equipment associated therewith, the Licensee shall fully comply with Applicable Standards and the Equipment manufacturers' specifications. The Licensee shall be responsible for, and shall make best efforts to ensure compliance with Applicable Standards by Licensee, its employees, agents, contractors, subcontractors, suppliers, and/or sublicensees of any tier.

(1) If Licensee's Equipment violates or is not in compliance with any Applicable Standards now or hereafter in effect, or if a Governmental Authority with jurisdictional authority requires any change to Licensee's Equipment, then Licensee shall complete said changes and bring its Equipment into compliance within a reasonable period of time.

(2) The Licensee shall, if and as requested by the Licensor, furnish such documents as may be required to effect or evidence compliance in accordance with this Section 9.

10. INSPECTION

A. Due Diligence by Licensee. At any time after the Effective Date of this Agreement, subject to the terms of Section 12 "Site Access," Licensee shall have the right to obtain, at its sole cost and expense, a title report or commitment for a title policy from a title insurance company of its choice and to have the Site surveyed by a surveyor of its choice.

B. Visual Inspection by Licensor. As this Agreement conveys no possessory interests whatsoever in the Property or Wireless Communications Facilities, the Licensor may enter and access the Site at any time and may visually inspect the Licensee's Work and Equipment at any time to ensure compliance with this Agreement, Licensor's policies and/or standards presently in effect or as may be amended. No inspection, delay or failure to inspect, or failure to discover any defect or non-compliance by Licensor shall relieve Licensee of any of its obligations under this Agreement.

C. Testing. Upon twenty-four (24) hour prior notice to Licensee, Licensor may require the Licensee to test the Licensee's Work and Equipment or conduct studies as provided for in Exhibits D and E. Licensor may have a representative present at any testing of the Work and/or the Equipment.

D. Licensor No Duty or Warranty. This section shall not be construed as a duty by Licensor to inspect. Licensor's inspection shall not constitute a representation or warranty, express or implied, as to the adequacy of the construction, design, reconstruction, and/or maintenance of the Equipment, Work, or the Permitted Use.

11. SITE UTILITIES; EMERGENCY POWER

A. Electric and Back-up Power Service to Site. Licensor, by and through ITD, hereby grants Licensee the non-exclusive right to use the existing electrical service and back-up power generator on the Premises for operation of the Equipment. In the event that the Licensor determines, in its sole and reasonable discretion, that Licensee's use and operation of Licensee Equipment exceeds existing available electrical or back-up power capacity, Licensee will reimburse the Licensor for the costs incurred to add additional capacity needed to accommodate the Licensee Equipment. Available electrical or back-up power capacity shall mean the electrical or back-up power capacity available at the Site in excess of that amount used by Licensor and third-party operator equipment at the Site during peak use. Third-party shall mean and refer to an entity with equipment located at the Site prior to commencement of the Work. Licensor is responsible for payment of all electricity costs incurred during day to day operation of the Equipment at the Site. Licensee will provide and pay for generator fuel and fuel tank maintenance, and assure fuel quality is suitable for emergency use.

B. Utility Location. The exact location of any utility routes to be used by Licensee shall be part of the drawings included with **Exhibit B**.

C. Licensor Acknowledgements Regarding Utilities. Licensor understands and acknowledges that, to the best of its knowledge, the Site includes such non-exclusive easement rights for electricity as are necessary to connect utility wires, cables, fibers and conduits to the Equipment.

D. Emergency Power. Emergency power to the Equipment will be available through a generator located in the Communications Building.

12. SITE ACCESS

A. Site Access Provisions. The following provisions shall govern access to the Site by Licensee:

(1) **Access.** Licensee, and its contractors, shall have ingress and egress to and from the Site over and upon the Property and Wireless Communications Facilities twenty-four (24) hours per day, seven (7) days per week; provided that Licensee shall provide a list of Licensee and contractor personnel, and provide advance telephonic and/or e-mail notice to the following Licensor contacts (both ITD and Tacoma Water) prior to entry and upon exit.

a. **Tacoma Water:** Water Control Center – 253-502-8344

b. **ITD:** Radio Communications Manager – 253-404-3790
staylor2@cityoftacoma.org

(2) **Foot or Motor Vehicle Access.** Access to the Site may be by foot or motor vehicle.

(3) Additional Access Conditions. Licensor may from time to time adopt reasonable rules of access not inconsistent with the MOU, to ensure the safe, secure and continued operation of its utility facilities located on the Property. Such additional conditions shall be in effect only after at least thirty (30) days' prior written notice to Licensee.

(4) Access Secondary to Licensor Operations. Licensee's access to the Site is secondary to Tacoma Water's power and water system operations and maintenance at the Property.

(5) Additional Access Requirements. Any additional access limitations and/or instructions applicable to the Site are included in **Exhibit B**.

13. PROTECTION OF PROPERTY AND PERSONS

A. Clean and Safe Site. At all times, including without limitation, upon completion of any portion of any Work, Licensee shall keep the Site reasonably cleared of all rubbish, refuse, surplus materials and other debris and keep the Site in a neat, clean and safe condition.

B. Precautions. Licensee shall take all reasonable precautions necessary to prevent bodily injury (including death) to persons and damage to any property or environment arising in connection with performance of the Work or the operation of the Equipment. Without limiting the generality of the foregoing, Licensee shall erect and maintain such barricades, signs, flags, flashers and other safeguards as are required by applicable law or regulations or as reasonably required from time to time by Licensor. Licensee shall reasonably inspect all goods, materials, tools, Equipment and other items in an attempt to discover any conditions which involve a risk of bodily injury (including death) to persons or a risk of damage to any property or the environment.

C. Obligation to Restore, Repair, or Replace. All of Licensor's or third party's property damaged, altered or removed in connection with the performance of the Work or the operation of the Equipment shall be promptly repaired, replaced or otherwise restored by Licensee to at least as good quality and condition as existed prior to such damage, alteration or removal.

14. COORDINATION AND SUSPENSION

A. Level of Coordination. Licensor has the right to define the level of reasonable coordination required for the Work at the Site. Except for Emergency repairs performed pursuant to Section 15.A.4, Licensor will respond to Licensee's request regarding coordination of any Equipment installation within twenty (20) days after receiving Licensee's request. For purposes of this subsection A, coordination shall mean Licensee's submittal of Work schedules to Licensor for prior review to determine if conflicts exist with other activities on the Property, and making adjustments to the Work schedule to resolve any identified conflicts.

B. Interference/ Delay. Licensee acknowledges and anticipates that any Work may be interfered with and delayed from time to time on account of the concurrent performance of work by Licensor or others under contract with Licensor. Upon the occurrence of any interference, Licensor shall have the right to suspend Work pursuant to Section 14.D

"Suspension." Licensee shall fully cooperate and coordinate the Work with such other work so as to minimize any delay or hindrance of any work.

C. Conflicts, Deficiencies, or Defects. If any part of the Work depends upon the results of other work by Licensor or others, Licensee shall, prior to commencing the Work, notify Licensor in writing of any actual or apparent conflicts, deficiencies or defects in such other work that render it unsuitable for performance of the Work. Failure of Licensee to so notify Licensor shall constitute an acceptance by Licensee of such other work as suitable for performance of the Work.

D. Suspension. The Work or Permitted Use is subject to suspension by Licensor due to an Emergency or occurrence of interference, as determined by Licensor, and with reasonable notice to Licensee (within twenty-four (24) hours of an Emergency). Upon the occurrence of a suspension, the Annual Use Fee shall be abated on a prorated basis for the duration of the suspension or Licensee may terminate this Agreement upon fifteen (15) days' notice to Licensor.

E. Complaints. Licensee shall give immediate attention to, and shall use reasonable efforts to promptly, courteously and equitably respond to, adjust and settle (without obligating Licensor in any way), all complaints received from third parties arising out of or in connection with performance of the Work. Licensee shall promptly notify Licensor of all such complaints and any action taken (or to be taken) in connection therewith. In handling any complaints, Licensee shall use its best efforts to maintain and promote good public relations for Licensor and Licensee.

15. MAINTENANCE AND REPAIRS

A. Licensee's Obligations. Licensee shall have the following maintenance and repair obligations:

(1) Equipment Maintenance. Licensee must, at all times during the term of this Agreement and at Licensee's sole cost and expense, keep and maintain the Equipment located by Licensee upon the Site in a structurally safe and sound condition and in good repair.

(2) Licensor Option to Repair. If Licensee does not make repairs within thirty (30) days after receipt of notice from Licensor requesting such repairs, then Licensor may, at its option, make the repairs. Licensee upon receipt of satisfactory documentation shall pay Licensor on demand Licensor's actual direct costs in making the repairs, plus Licensor's actual overhead.

(3) Extension of Cure Period. If Licensee commences to make requested repairs within thirty (30) days after any written notice from Licensor requesting such repairs and thereafter continuously and diligently pursues completion of such repairs, then the thirty (30) day cure period will extend for an additional sixty (60) days to permit the Licensee to complete said repairs.

(4) Emergency Repairs. If repairs to Licensee's Equipment are needed due to an Emergency, Licensee must immediately make repairs. If Licensee fails to do so, Licensor may choose to make such repairs at Licensee's expense. In accordance with Section 12, "Site Access," Licensee shall obtain approval of the

Licensor to access the Site and coordinate with Licensor's emergency operations and maintenance activities in relation to making said repairs.

B. Temporary Equipment. If Licensee is unable to use Equipment because of repairs required on the Site or Wireless Communications Facilities, or for any other reason not caused by the fault of Licensee, then Licensee may, upon written notification to Licensor, immediately erect on the Site or an unused portion of the Property as approved by Licensor, temporary Equipment, while Licensor makes repairs to the Site or Wireless Communications Facilities, provided that such temporary Equipment will be removed within fifteen (15) days of completion of repairs or replacement of the Site or Wireless Communications Facilities.

16. CONSTRUCTION; CHANGES TO SITE

A. Licensee Improvements. Licensee desires to make certain "**Improvements**" to the Wireless Communications Facilities that include: (1) modifying the Antenna Support Structure to extend the height, (2) attaching radio transmission equipment, feed lines and related equipment to the Antenna Support Structure, (3) installing base station equipment in the Communications Building, (4) connecting the base station equipment to the radio transmission equipment, and (5) installing a diesel fuel tank and fuel lines that will connect to the generator in the Communications Building. Licensee's approved design and calculations are set forth in **Exhibit B**. Any material modification to such approved design and calculations must be approved by the Licensor, which approval shall not be unreasonably withheld, delayed or conditioned. All Work performed to commence and complete the Licensee Improvements shall conform to the approved design and calculations and Work Plan (defined in Section 16.B).

B. Approval of Work Plan. Licensee shall, prior to commencement of Work related to the Licensee Improvements or a substantial change thereto, submit a work plan ("**Work Plan**") to the Licensor for its review and approval. The Work Plan shall identify the proposed Work, the schedule and anticipated progress of all Work, the critical path Work, and the means and methods pursuant to which Licensee shall ensure that the Work does not interfere with or interrupt Tacoma Water's utility operations on the Property or ITD's use and operation of the Wireless Communications Facilities. Licensee shall not commence Work related to the Licensee Improvements or a substantial change thereto on the Site until the Work Plan has been approved by the Licensor.

C. Authorization for Changes. Prior to making any material alteration to the Equipment constructed or installed by Licensee, or to the Site, including installation, modifications, upgrades, removal, or replacement of Equipment or utilities, Licensee must: (i) submit a Proposal to revise Exhibit B, (ii) obtain Licensor's written approval of the Proposal, and (iii) execute a revised Exhibit **B** acceptable to Licensor pursuant to the requirements of this Section. Revised **Exhibits A** and **C** may also be necessary and will be executed concurrently with **Exhibit B** modifications. Removal of Equipment must be approved in writing and an amendment to this Agreement executed, **Exhibit B** revised, or this Agreement terminated, as applicable. Notwithstanding anything to the contrary contained in this Agreement, maintenance, repairs, modifications, upgrades, updates and like-kind replacements that the Licensor reasonably agrees do not increase the amount of Capacity Licensee is using at the Site or require structural work to the

Licensor's Wireless Communication Facilities, do not constitute material alterations and do not require Licensor's prior written approval and amendment to this Agreement.

D. Proposal. Prior to making any material alterations described in Section 16.C above, Licensee shall submit to Licensor a "**Proposal**" that shall contain the following information:

- (1) A description of the Equipment to be installed or modified, including as applicable:
 - Antenna physical description and location
 - Electronic cabinet physical description and location
 - Transmitter description to include frequencies
 - Complete Intermodulation study
 - Plan for minimizing visual impact of Equipment at the Site;
- (2) Construction and relevant drawings; and
- (3) A narrative description outlining the proposed project, including an inventory of all of Licensee's Equipment that will be located on the Site.

E. Structural Engineer Design and Analysis. Any structural work on the Wireless Communications Facilities or other structure on the Property, or any work involving a material alteration of any portion of the Wireless Communications Facilities or the Property, must be designed by a licensed structural engineer licensed in the State of Washington. Licensor may, in its sole discretion, require an analysis of the Proposal from a licensed structural engineer.

- (1) **Final Design Approval.** Final designs and all calculations must be submitted to the Licensor as part of the Proposal for final approval.
- (2) **Design and Analysis Costs.** The cost of all structural design and analysis, including Licensor review fees in accordance with **Exhibit C**, shall be at the Licensee's sole cost and expense.

F. Approval

- (1) **Notice.** Licensor will use reasonable efforts to notify Licensee of its approval or disapproval of the Proposal within thirty (30) business days after receipt of the Proposal.
- (2) **Approval Contingent on Available Space and Safety.** Licensor may refuse to approve a Proposal where, in Licensor's sole opinion, there is insufficient space or Capacity on the Wireless Communications Facilities or the Property or for reasons relating to safety, reliability, generally applicable engineering purposes, and/or any other Applicable Standards.
- (3) **Approval.** Licensor may approve a Proposal if, in its sole judgment, exercised reasonably, Licensor determines that it: (a) has sufficient space or Capacity, including planned future uses, to accommodate the proposed material alteration, (b) Licensee meets all the requirements set forth in this Agreement,

and (c) the material alterations set forth in the Proposal comply with all Applicable Standards.

(4) Purpose of Licensors Approval. Licensors review and/or approval provided for in this Agreement, including, but not limited to review and approval of any designs, drawings, calculations, and/or construction is for the sole purpose of protecting Licensors ability to maintain its utility and Wireless Communications Facilities operations and rights in the Property and to assure Licensors that Licensees uses of the Property and Wireless Communications Facilities are in accordance with the provisions and limitations of this Agreement and Licensors policies and procedures. Licensors review and/or approval provided in this Agreement is not intended nor to be construed as:

- a comprehensive engineering review or analysis of the request and its associated implications;
- consent, authorization, or acknowledgment that Licensee has obtained all required authorizations with respect to Equipment and/or Work; or
- any representation or warranty, express or implied, as to: (i) the adequacy of the design, drawings, calculations, construction, and/or reconstruction of the Equipment, Work, or Permitted Use; (ii) the suitability of the Property for construction and/or reconstruction of the Permitted Use; or (iii) any obligation on the part of Licensors to ensure that work or materials are in compliance with any requirements imposed by a Governmental Authority.

G. Exhibit Revisions

Upon approval of the Proposal, Licensors shall send Licensee a revised **Exhibit B** (and revised **Exhibits A** and **C**, if applicable) that must be acknowledged and approved by both Parties before any Work set forth in the Proposal may commence. This Agreement shall not in itself constitute any such consent, except as provided in Subsection A of this Section 16 and in regard to the Improvements, Equipment and Work identified in the Exhibits attached hereto.

H. Acceptance of Improvements. No right, title or interest in and to any Improvements installed or constructed by the Licensee on the Premises shall vest with the Licensors unless and until: (1) the Licensee has provided notice to the Licensors requesting acceptance of the Improvements and warranting that the Improvements were constructed and installed in accordance with the terms and conditions of this Agreement, and (2) the Licensors has provided notice to Licensee that it has accepted such Improvements, which acceptance shall not be unreasonably withheld or delayed.

17. EQUIPMENT INSTALLATION

A. Installation. Upon execution of this Agreement or execution of an amendment to this Agreement after approval of Licensees Proposal, Licensee shall construct and install the Equipment in strict accordance with:

- (1) The Licensee Proposal approved by Licensors,

- (2) The provisions of this Agreement, to the extent it is not inconsistent with any amendment to this Agreement, and
- (3) Any executed amendments to this Agreement, if applicable, including any conditions or qualifications specified by Licensor in any consent or approval.

B. Applications for Licensee's Licenses, Permits, or Approvals. Licensor may not unreasonably refuse to execute appropriate documents and applications as may be required (i.e., by virtue of Licensor's ownership of or rights in the Site) by any Governmental Authority with jurisdiction in order for Licensee to obtain the necessary licenses, permits or other approvals from such Governmental Authority to use the Site as contemplated by this Agreement or applicable amendment. Provided, however, that Licensor shall not under any circumstances be obligated to execute any application or other document that, in Licensor's reasonable judgment, will in any way impair, limit or adversely affect Licensor's rights in, ownership of, or use of the Property and the Wireless Communications Facilities, or which creates an unjustifiable liability to Licensor. Any necessary licenses, permits and other approvals sought by Licensee for its Permitted Use of the Site as provided by this Agreement from a Governmental Authority shall be at Licensee's sole expense.

C. Failure to Install Equipment. Licensee must commence Work within one (1) year of the Effective Date of this Agreement, approval of a Proposal or Amendment, or such other time as the Licensor and Licensee may agree to in writing. If Licensee fails to commence Work to install its Equipment within said one (1) year period, Licensee will relinquish any permissions authorized and forfeit any fees paid.

D. As-Built Drawings. Licensee shall provide as-built drawings of the Site and Licensee's Equipment and/or Work within sixty (60) days of completion.

18. UNAUTHORIZED IMPROVEMENTS

A. Unauthorized Improvements. Licensee shall not construct or place any Equipment or improvements on the Wireless Communications Facilities that constitutes a material alteration, or materially deviates from the design approved pursuant to this Agreement, unless authorized in this Agreement, an applicable amendment to this Agreement, or written approval by Licensor. All such activities on the Property without the written authorization of Licensor shall be deemed unauthorized and Licensor shall have the option, but not the obligation:

- (1) to demand that such unauthorized improvements or Equipment be removed by Licensee at Licensee's expense,
- (2) to remove or cause to be removed such unauthorized improvements or Equipment on behalf of the Licensee, in which case Licensee shall reimburse Licensor for all costs incurred by Licensor in connection with such removal immediately upon demand, or
- (3) to allow such unauthorized improvements or Equipment to remain in place at the Site pursuant to the terms of this Agreement and/or such other terms as specified in writing to Licensee by Licensor.

If Licensee fails to remove any unauthorized improvements or Equipment within a reasonable period of time upon receipt of written demand from Licensor, but in any case no later than 30 days thereafter, such shall become the property of ITD without the payment of any consideration to the applicable Licensee therefor.

B. Licensee Inventory. The Licensee shall submit inventories to Licensor within thirty (30) days of receipt of Licensor's written request, during the term of this Agreement, which request shall not be made by Licensor more than one (1) time per calendar year. Said inventory shall be a general list of Licensee's Equipment on the Site, including the type, number and dimensions of antennas on the Antenna Support Structure and the size, number and dimensions of equipment cabinets located within the Communications Building, which list need not be more detailed than the general list of Equipment attached to this Agreement at Exhibit B. The inventory may not be used in lieu of an amendment to this Agreement or a Proposal. If Licensee fails to submit an inventory when due, Licensor may at its sole discretion and with fifteen (15) business days written notice, and at Licensee's sole expense, perform an inventory of the Licensee's Equipment located on the Site and invoice Licensee for the full cost of the inventory. Licensee shall pay such invoice within thirty (30) days of receipt.

C. Licensor Inventory. Notwithstanding Section 18.B above, Licensor reserves the right to conduct its own inventory of the Licensee's Equipment at any time, but not more than once per year, at Licensor's sole expense, a copy of which shall be provided to Licensee within thirty (30) days of its completion.

D. Unauthorized Equipment / Improvements Identified through Inventory. Equipment not previously approved and authorized in writing by Licensor shall be deemed to be an unauthorized improvement.

19. INTENTIONALLY OMITTED

20. TERMINATION

A. Licensee. In addition to any other rights Licensee has to terminate this Agreement as set forth herein, including by way of example and not limitation Section 24.C, Licensee shall have the right to terminate this Agreement as follows:

(1) Termination for Site Unsuitability. Upon thirty (30) days prior written notice if Licensee determines, in its sole discretion, that for technical, design, interference, environmental, economic or title reasons, the Site is not necessary or suitable for the Equipment or operation of the PSERN System; provided that, if Licensee has commenced but not completed Work pursuant to Section 16 of this Agreement, at the election of Licensor, Licensee shall at its own cost and expense, restore the Wireless Communications Facilities to its prior or better condition or complete the Work to the reasonable satisfaction of the Licensor.

(2) License, Permit, or Certificate Rejection, Expiration, or Cancellation. Upon thirty (30) days prior written notice upon the occurrence of any of the following:

(a) any certificate, permit, license or approval affecting Licensee's ability to use the Site in the manner originally intended by Licensee is rejected, or

(b) if any previously issued certificate, permit, license, or approval is canceled, expires, lapses, or is otherwise withdrawn or terminated by the applicable Governmental Authority.

(3) Upon ninety (90) days written notice for any other or no reason whatsoever; provided that, if Licensee has commenced Work pursuant to Section 16 of this Agreement, at the election of Licensor, Licensee shall at its own cost and expense, restore the Wireless Communications Facilities to its prior or better condition or complete the Work to the reasonable satisfaction of the Licensor.

B. Licensor Termination. In addition to the rights set forth in Section 21 of this Agreement (Default; Remedies) the Licensor shall have the right to terminate this Agreement upon twenty-four (24) months prior notice to Licensee, upon the Licensor's determination that use of the Premises is reasonably necessary for the installation or construction of Tacoma Water facilities. The Licensor shall further have the right to terminate this Agreement in the event that the Property becomes surplus to the Licensor; provided that, in such event the Licensor shall provide Licensee twenty-four (24) months prior notice of its intent to surplus the Property.

21. DEFAULT AND REMEDIES

A. Licensee Default. The occurrence of any one or more of the following events constitutes an "Event of Default" by Licensee under this Agreement:

(1) **Failure to Pay.** If Licensee fails to pay after thirty (30) days' notice from Licensor, the full amount of any fee or other payment due under this Agreement.

(2) **Interference.** If any Equipment placed on the Site by Licensee unreasonably interferes with any equipment located on the Property; provided such equipment was located on the Property prior to the installation date of Licensee's Equipment on the Site and is operating in compliance with all Applicable Standards and manufacturers' specifications, and Licensee:

(a) fails to immediately cease operation of said interfering Equipment, and

(b) fails to resolve the interference within thirty (30) days.

(3) **Failure to Perform an Obligation.** If Licensee fails to perform or observe any term of this Agreement, and such failure continues for more than thirty (30) days after receipt of written notice from Licensor specifying such default. However, such thirty (30) day cure period will be extended as reasonably necessary to permit Licensee to complete cure so long as Licensee commences cure within such thirty (30) day cure period and thereafter continuously and diligently pursues and completes such cure.

(4) **Site Abandonment.** If Licensee deserts, abandons, or vacates any portion of the Site after the Effective Date for a continuous period of one (1) year or more,

including failure to maintain any and all Equipment remaining at the Site during such time.

(5) Bankruptcy. If any petition is filed by or against Licensee, under any section or chapter of the present or any future federal Bankruptcy Code or under any similar law or statute of the United States or any state thereof (and with respect to any petition filed against Licensee, such petition is not dismissed within ninety (90) days after the filing thereof), or Licensee is adjudged bankrupt or insolvent in proceedings filed under any section or chapter of the present or any future federal Bankruptcy Code or under any similar law or statute of the United States or any state thereof.

(6) Appointment of Receiver or Trustee. If a receiver, custodian, or trustee is appointed for Licensee or for any of the assets of Licensee and such appointment is not vacated within sixty (60) days of the date of the appointment.

(7) Insolvency or Fraud. If Licensee becomes insolvent or makes a transfer in fraud of creditors.

(8) Unauthorized Equipment. If Licensee places any Equipment on the Site without prior approval from Licensor.

B. Licensor's Remedies

(1) Termination. If an Event of Default by Licensee occurs pursuant to this Section 21 "Default and Remedies," and while Licensee remains in Default, Licensor, upon written notice to Licensee, may terminate this Agreement, in which event Licensee will, within forty-five (45) days after such Termination Date, vacate and surrender the Site to Licensor.

(2) Liability. Upon termination of this Agreement by Licensor for an Event of Default by Licensee, Licensee will become liable for damages equal to the total of:

(a) the actual costs incurred by Licensor for removing Licensee's Equipment and/or restoring the Site, if Licensee fails to do so within forty-five (45) days after the Termination Date,

(b) the Annual Use Fee earned as of the Termination Date, plus interest thereon, as specified in Section 5 "Fees" from the date due until paid; and

(c) all other sums of money and damages, if any, owing by Licensee to Licensor.

C. Licensor Default and Licensee Remedies. If Licensor defaults in the performance of any of its obligations with respect to this Agreement, which default:

(1) continues for a period of more than thirty (30) days after receipt of written notice from Licensee specifying such default, or

(2) is of a nature to require more than thirty (30) days for remedy and continues beyond such time reasonably necessary to cure (and Licensors has not undertaken procedures to cure the default within such thirty (30) day period, and diligently and continuously thereafter pursued such efforts to complete cure),

then Licensee may, as its sole and exclusive remedy, upon written notice terminate this Agreement; provided, however, Licensors shall remain potentially liable for its sole negligence or the sole negligence of its employees and officers, as set forth in Section 29 "Indemnification."

22. SURRENDER OF SITE; HOLDING OVER

A. Vacation and Removal; Licensee's personal property. Upon the expiration or termination of this Agreement for any cause whatsoever, Licensee shall vacate the Site and restore it to as good or better condition as existed at the Effective Date, except for reasonable use, wear and tear, casualty (if no fault of Licensee), or condemnation. Licensee shall remove its Equipment within forty-five (45) days after the Termination Date of this Agreement. Licensee will repair any damage to the Property and Wireless Communications Facilities caused during the removal of the Equipment, normal wear and tear excepted. Licensee's Equipment shall be and remain the personal property of the Licensee; provided that, any and all improvements to the Antenna Support Structure together with the replacement diesel fuel tank and associated fuel lines and ancillary structure(s) and equipment, shall be and become the property of the ITD upon completion of the initial Work to construct/install the Equipment and Improvements, and acceptance of the same by the Licensors.

B. Holding Over. If Licensee fails to remove its personal property at the end of the forty-five (45) day period and no extension has been granted, or if Licensee's personal property remains on the Site at the end of any extended period authorized by Licensors, such personal property shall be deemed unauthorized improvements.

C. Hold Over Period / Monthly License Fee. In the event that the Licensors, in its sole discretion, permits any Licensee-owned Equipment to remain past the expiration of such forty-five (45) day period, the Licensee shall pay to Licensors a monthly license fee equal to 1/12th of 125% of the Annual Use Fee and Licensee Equipment shall be subject to all of the other terms of this Agreement then in effect with respect to the applicable Site during the Hold-Over Period. The "**Hold-Over Period**" means the time from the Termination Date until the Equipment or other improvements are removed from the Property.

D. Termination of Hold-Over Period. Licensors shall have the option to require Licensee's removal of all of Licensee's personal property upon giving ten (10) business days written (second) notice of termination of the Hold-Over Period. If not so removed, at Licensors's option such personal property shall become the property of the Licensors. Licensors may choose to remove said Equipment and charge Licensee for all costs related to such removal.

23. ENVIRONMENTAL HAZARDS

A. Hazardous Substances. Licensee will not bring, keep or transport any Hazardous Substances to, on or across the Site or Property without Licensors's prior written

approval. Licensee may keep on the Site substances used in back up power units such as batteries, and fuel and/or diesel for back-up power generators commonly used in the wireless communications industry. Licensee's use, storage, and handling of any approved substances constituting Hazardous Substances must comply with all applicable laws, ordinances, regulations, Licensor's requirements, and other provisions of this Agreement governing such use, storage, and handling. Under no circumstances will Licensee dispose of any Hazardous Substances on the Site. This provision shall survive termination of this Agreement.

B. Notification. Licensee shall promptly notify Licensor of any of the following, when resulting from Licensee's acts or omissions, or otherwise reasonably known to Licensee:

- (1) all spills or releases of any Hazardous Substances in, on, or adjacent to the Site,
- (2) all failures to comply with any federal, state, or local law, regulation, or ordinance, as now enacted or as subsequently enacted or amended,
- (3) all inspections of the Site or Property by, or any correspondence, orders, citations, or notifications from any regulatory entity concerning Hazardous Substances affecting the Site or Property,
- (4) all regulatory orders or fines, or all response or interim cleanup actions taken by or proposed to be taken by any Governmental Authority or private party concerning the Site or Property.

C. Provision of Correspondence or Reports. On request, Licensee shall provide copies to Licensor of any and all correspondence, pleadings, and/or reports received by or required of Licensee or issued or written by Licensee or on Licensee's behalf with respect to the use, presence, transportation, or generation of Hazardous Substances in, on, about, or adjacent to the Site.

D. Environmental Hazard Indemnity. Licensee and its agents, contractors, and subcontractors shall defend, indemnify, hold harmless Licensor and its officials, officers, board members, council members, representatives, employees, and agents against any and all liability, costs, damages, fines, taxes, special charges by others, penalties, punitive damages, or expenses (including reasonable attorney's fees and all other costs and expenses of litigation) to the extent arising from or due to the release, threatened release, storage, or discovery of any Hazardous Substances on, under, or adjacent to Property or the Site attributable to Licensee's use of Licensor's Property and/or the Site.

24. CASUALTY, REPLACEMENT, RELOCATION, OR CONDEMNATION OF SITE

A. Casualty. If there is a casualty to any structure upon which the Licensee's Equipment is located, Licensor may elect to repair or restore the structure and, to the extent Licensee has the necessary rights or permissions to do so, Licensee may, upon written notification to Licensor, immediately erect on the Site or an unused portion of the Property as approved by Licensor, temporary Equipment, while Licensor makes repairs to the Site, provided that such temporary Equipment will be removed within fifteen (15) days of completion of repairs or replacement of the Site. Permissions to install temporary Equipment are at the sole discretion of the Licensor, but will not be unduly

withheld, delayed or conditioned as long as the temporary Equipment and associated Work does not interfere with Licensor's own restoration. Licensor will provide Licensee with reasonable notice of its plans to repair or restore such damaged structures. Licensor has the right to remove Licensee's Equipment prior to the start of such repair or restoration if Licensee fails to do so within a reasonable period of time. Upon completion of such repair or restoration, Licensee will be notified when the Site is available for reinstallation of their Equipment. In the event such repairs or restoration will, in Licensor's reasonable estimation, require more than sixty (60) days to complete or if Licensor elects not to repair and restore the damaged structures, Licensee will be entitled to terminate this Agreement upon thirty (30) days prior written notice.

B. Replacement. If Licensor, after thirty (30) days prior notice to Licensee, replaces any improvement on the Site that the Licensee has attached Equipment to, Licensee is solely responsible for the cost of the transfer of said Equipment to the new improvement.

C. Relocation. If Licensor is required or requested to substantially relocate all or any part of the Wireless Communications Facilities on which the Site is located and/or make related improvements by a competent Governmental Authority, Licensor shall provide Licensee reasonable notice prior to such relocation or making improvements and Licensee at its option may terminate this Agreement. In the event Licensee does not desire to terminate this Agreement and agrees to relocate its Equipment to the new Site, Licensee must secure an amendment to this Agreement or a new agreement acceptable to both Parties, at no additional cost to Licensee. Notwithstanding the forgoing, Licensee shall be solely responsible for the cost of the relocation of said Equipment to the new Site.

D. Condemnation. If there is a condemnation of the Site including, without limitation, a transfer of the Site by consensual deed in lieu of condemnation, then this Agreement will terminate upon transfer of title to the condemning authority, without further liability to either Party. Licensee may pursue a separate condemnation award for the cost of removal or relocation of the Equipment on the Site from the condemning authority provided that such award does not reduce the amount of Licensor's award.

25. WARRANTIES

A. Mutual Warranties. Each Party mutually represents and warrants to the other:

- (1) that it has the full right, power, and authority to enter into this Agreement;
- (2) that entering into this Agreement and the performance thereof will not violate any laws, ordinances, restriction, covenants, or other agreements under which said Party is bound; provided, however, that the foregoing is subject to, and will not limit in any way, the rights and obligations of Licensor and Licensee under Section 20 "Termination" and Section 21, "Default and Remedies;" and provided further that, to the extent the foregoing warranty is made by Licensor, such warranty will not apply to any violation or breach that is caused by Licensee's failure to obtain and comply with all permits, licenses, franchises, rights-of-way, easements and other rights required to perform the Work and operate the Equipment in accordance with this Agreement;

- (3) that each of the persons executing this Agreement on behalf of each Party represents and warrants that said Party is a duly organized and existing legal entity;
- (4) that the persons signing on behalf of the municipal corporation, corporation, company, limited liability company, or limited partnership were authorized to do so;
- (5) that the Party is qualified to do business in Washington State or will be qualified prior to undertaking any activities at the Property that would require the Party to be qualified to do business in such State;
- (6) that the Party will be solely responsible for payment of any fees associated with any dealings with any real estate brokers or agents such Party has on its behalf in connection with the negotiation of this Agreement.

B. Licensee Warranties. Licensee represents and warrants:

- (1) that it is, and at all times during the Initial Term and any applicable Renewal Terms shall be, properly authorized, licensed, organized, equipped and financed to perform the Work and to operate the Equipment and the PSERN System, of which the Equipment is a part;
- (2) that it shall be, and operate as, an independent entity (not a contractor, agent or representative of Licensor) in the performance of the Work, in the Permitted Use of the Site, and the operation of the Equipment and the PSERN System; and
- (3) it has acquainted, or will fully acquaint, itself and its employees or contractors and agents with the conditions relating to the Permitted Use and Work that will be undertaken as permitted by this Agreement and that it fully understands or will acquaint itself with the facilities, difficulties, and restrictions attending the execution of such Work.

26. NO WARRANTY AS TO SUITABILITY OR ADEQUACY OF SITE

LICENSOR EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE SITE IS SUITABLE FOR THE PERMITTED USE. LICENSEE HEREBY ACKNOWLEDGES THAT LICENSOR DOES NOT WARRANT THE SUITABILITY OR FITNESS OF THE SITE FOR THE PURPOSES FOR WHICH LICENSEE MAY DESIRE TO USE IT; NOR DOES LICENSOR WARRANT THE ADEQUACY OF THE SITE'S LOCATION, ITS CONDITION, THE CONDITION OF ANY STRUCTURE OR APPURTENANCES FOR ANY PURPOSE. LICENSEE TAKES THE SITE "AS IS", "WHERE IS" AND "WITH ALL FAULTS".

27. INSURANCE

A. Required Insurance Coverage. During the term of this Agreement and at its sole expense, Licensee and its contractors shall obtain and maintain the following insurance:

- (1) **Commercial General Liability.** A policy of Commercial General Liability (CGL) insurance covering claims for bodily injury, death, personal injury, and/or property damage arising from the use of the Property and/or out of the

Licensee's operations on the Licensors Property. All insurance shall cover liability arising out of premises, operations, independent contractors, products completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of a third party assumed in a business contract), and contain separation of insured (cross liability) provisions. Licensors shall be named as an additional insured by amendatory endorsement, providing coverage to the Licensors for liability arising in whole or in part by Licensee's on-going and completed operations.

(2) Pollution Legal Liability. A policy of Pollution Legal Liability insurance that shall name the Licensors as an additional insured by amendatory endorsement. Blanket additional insured provisions will not be accepted. The Licensee shall obtain any endorsements necessary to extend coverage for damage to the premises occupied by the licensee, or obtain coverage on a first party basis for the pollution exposure for the premises.

(3) Commercial Automobile Liability. The Licensee and its contractor(s) shall obtain and have in place prior to entering upon the Licensors property, a policy of Commercial Automobile Liability coverage, with the Licensors named as an addition insured. Coverage shall apply to owned, non-owned and hired vehicles.

(4) Workers Compensation and Employers Liability insurance.

(a) Employers Liability ("Stop Gap") Insurance. Licensee shall buy employers liability insurance.

(b) Workers Compensation Coverage. Licensee shall comply with all State of Washington workers compensation statutes and regulations. Workers compensation coverage shall be provided for all employees of Licensee and employees of any subcontractor or sub-subcontractor. Except as provided by law, Licensee waives all rights of subrogation against Licensors for recovery of damages to the extent they are covered by workers compensation, employers liability, commercial general liability, or commercial umbrella liability insurance.

If Licensee, its contractors, subcontractors, or sub-subcontractors fails to comply with all State of Washington workers compensation statutes and regulations and Licensors incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Licensee shall indemnify Licensors for such liability. Indemnity shall include all fines, payments of benefits of Licensee or subcontractor employees, or their heirs or legal representatives, and the cost of effecting coverage on behalf of such employees.

B. Insurance Requirements. For all insurance policies required by this section:

(1) Coverage shall be written on a policy form published by the Insurance Service Office (ISO) or its functional equivalent. The Licensors reserves the right to determine if a proposed policy is in fact a functional equivalent and its decision shall be conclusive on the issue.

(2) Coverage shall be underwritten by insurance carriers licensed to do business in the State of Washington and of adequate financial strength (an A.M. Best Company rating of no less than A-V) subject to review and approval by the Licensor.

(3) Coverage shall be primary over and non-contributing to the Licensor's own insurance coverage or program, as respects Licensee's operations only.

(4) Any deductibles and/or self-insured retentions of the Licensee's policies shall not limit or apply to its liability to the Licensor and shall be the sole responsibility of the Licensee. No coverage required by this section shall be subject to a deductible or self-insured retained limit in excess of \$25,000 without the Licensor's prior written approval. To assure that the Licensor receives the full benefit of coverage, the Licensee shall pay any deductible or self-insured retained limit on behalf of the Licensor, notwithstanding any negligence or liability on the part of the Licensor.

(5) All coverage required by this section shall be written on a per "occurrence" basis and not on a "claims-made" policy form.

(6) All policies required by this section shall provide policy limits of no less than \$2,000,000 combined single limit of liability per occurrence with a general aggregate limit of \$4,000,000. The aggregate limit shall be dedicated or limited to the location or work reflected by the contract, permit or right of entry or industry track agreement by policy endorsement.

(7) Notwithstanding any language to the contrary contained in this Agreement, the Licensee and the Licensor shall mutually and reciprocally waive claims of subrogation against each other for claims of damage to their insured property or property that is required to be insured under this Agreement, and shall obligate their insurance carriers to do the same.

C. Contractors. If any portion of Licensee's operation or work permitted by the Licensor is to be contracted by Licensee, Licensee must require that the contractor provide and maintain insurance and coverages set forth herein and require that its contractor release, defend, hold harmless, and indemnify the Licensor to the same extent and under the same terms and conditions as Licensee.

D. Certificate of Insurance. Certificates of Insurance, reflecting evidence of the required insurance and coverage as described in subsection A above, shall be filed with the Licensor prior to the use of any rights provided by this Agreement. The certificate shall be filed with the acceptance of this Agreement and annually thereafter.

In the event that the insurance certificate provided indicates that the insurance shall terminate or lapse during the period of this Agreement, then, in that event, the Licensee shall furnish, at least thirty (30) days prior to the expiration of the date of such insurance, a renewed certificate of insurance as proof that equal and like coverage has been or will be obtained prior to any such lapse or termination.

Failure to obtain or provide adequate evidence of the required insurance and coverage will entitle, but not require, the Licensor to terminate this Agreement.

E. Modification / Adjustment of Insurance Requirements. The Licensors reserves the right to modify the insurance requirements of this Agreement, require any other insurance coverage, or adjust the policy limits as it deems reasonably necessary to reflect then-current risk management practices. Licensee shall have thirty (30) days from receipt of written notice of the change, modification, or adjustment to provide the Licensors with a Certificate of Insurance evidencing that Licensee has obtained the required insurance as described in the notice.

F. Compliance. Licensee will not do or permit to be done in or about the Site, nor bring or keep or permit to be brought to the Site, anything that:

(1) is prohibited by any insurance policy carried by Licensors covering the Site, any improvements thereon, or the Site; or

(2) will increase the existing premiums for any such policy beyond that contemplated for the addition of the Equipment.

Licensors acknowledges and agrees that the installation of the Equipment upon the Site in accordance with the terms and conditions of this Agreement will be considered within the underwriting requirements of any of Licensors's insurers and such premiums contemplate the addition of the Equipment.

G. Licensee's Self Insurance Program. Notwithstanding any provision to the contrary in this Agreement: (i) if Licensee is a political subdivision of the state of Washington, in lieu of the insurance requirements described in this Agreement, except those applicable to Licensee contractors or subcontractors, Licensee may maintain, at its own expense and in accordance with applicable law, a fully funded individual self-insurance program for all of its liability exposures for this Agreement, including but not limited to injuries to persons and damage to property, and (ii) if Licensee is a Local Government Entity, as that term is defined in Chapter 48.62 RCW, Licensee may, in lieu of the insurance requirements described in this Agreement, except those applicable to Licensee contractors or subcontractors, at its own expense join and fully fund membership in a self-insurance program established and administered in accordance with Chapter 48.62 RCW, covering all of its liability exposures for this Agreement, including but not limited to injuries to persons and damage to property.

Licensee agrees to provide Licensors with at least thirty (30) days prior written notice of any material change in Licensee's self-insurance program. Licensee shall provide Licensors with a letter of self-insurance in a form approved by the Licensors's Risk Manager, as adequate proof of coverage on or prior to the Effective Date of this Agreement, at any time during the term of this Agreement upon receipt of Licensors's written request, and contemporaneous with assignment of this Agreement to a Local Government Entity's successor in interest.

H. Bond. Licensee shall, upon request from Licensors, provide a performance / payment bond from a surety company reasonably acceptable to Licensors in an amount sufficient to fulfill the Licensee's obligations as set forth herein, including but not limited to the removal of Equipment located at each Site. The amount of the surety bond shall be determined by the Licensors.

28. RISK OF LOSS

Licensee shall be responsible for and shall bear any and all risk of loss, deterioration, theft, vandalism, or destruction of or damage to the Equipment and anything used (or to be used or consumed) in connection with the Work, unless destruction of or damage to the Equipment and anything used (or to be used or consumed) in connection with the Work is solely caused by an act of gross negligence solely related to Licensor's activities on the Property, or Licensor's employees', agents' or subcontractors' activities on the Property.

29. INDEMNIFICATION

To the fullest extent allowed by law, the Licensee agrees to indemnify, defend and hold harmless the Licensor, its officers and employees, from any and all claims for damages or loss to the Licensor's operations or property and from any and all claims or litigation arising in connection with this Agreement and/or Licensee's use of Licensor's real and/or personal property. This includes damages, loss, and personal injury (including death) to property or persons, including injuries or death to Licensee, or Licensee's agents, contractors, or employees which may be caused or occasioned by the existence, operation, use or maintenance of any and all of the property which is the subject of this Agreement or associated with the Permitted Use, or caused or occasioned by an act, deed, or omission of the Licensee, Licensee's agents, employees, guests, customers, or invitees.

In this regard, Licensee hereby waives immunity under Title 51 RCW, Industrial Insurance Laws, and this waiver has been mutually negotiated. The Licensor agrees to be responsible for its sole negligence or the sole negligence of its employees and officers occurring within the scope of their employment.

30. SERVICE INTERRUPTION

Licensor shall not be liable to the Licensee or to the Licensee's customers, and the Licensee hereby indemnifies, protects and saves harmless Licensor against any and all such claims or demands, suit or judgment for loss, liability, damages and expense by the Licensee's customers, for an interruption to the service of the Licensee, or for interference with the operation of the Licensee's Equipment.

31. LIMITATION OF LIABILITY

NOTWITHSTANDING ANY OTHER PROVISION OF THIS AGREEMENT, LICENSOR SHALL NOT HAVE ANY LIABILITY TO LICENSEE FOR ANY: LOSS OF PROFIT OR REVENUE, LOSS OF USE OF THE EQUIPMENT OR THE SYSTEM, CLAIMS OF CUSTOMERS OF LICENSEE FOR SERVICE INTERRUPTIONS, OR INDIRECT, INCIDENTAL, SPECIAL, ECONOMIC OR CONSEQUENTIAL DAMAGES, AS A RESULT OF OR RELATED TO THE EQUIPMENT, THE EXISTENCE OF THE EQUIPMENT AT THE SITE, OR THIS AGREEMENT, WHETHER ARISING IN CONTRACT, TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE, PRODUCT LIABILITY OR STRICT LIABILITY) OR OTHERWISE.

32. RELATIONSHIP OF PARTIES

Licensee shall be, and operate as, an independent party in the performance of the Work and the operation of the Equipment and Licensee's system. In no event shall Licensee be authorized to

enter into any agreements or undertakings for or on behalf of Licensor or to act as or be an agent or representative of Licensor.

This Agreement is not intended to create any partnership, joint venture, or other arrangement between the Parties. Neither Party shall have any authority to act for or to assume any obligation or responsibility on behalf of the other. Nothing in this Agreement creates any fiduciary relationship between the Parties. No term or provision of this Agreement is intended to be, or shall be, for the benefit of any person, firm, organization, or corporation not a party hereto, and no such other person, firm, organization, or corporation shall have any right or cause of action hereunder, except as may be otherwise provided herein.

33. ASSIGNMENT

A. Assignment by Licensee. Licensee shall not assign this Agreement or any portion of its rights in this Agreement, except as follows:

(1) Assignment to PSERN Operator. The planning, procurement, financing and implementation of the PSERN System is being managed by King County as the lead agency pursuant to an interlocal cooperation agreement between and among King County and the cities of Auburn, Bellevue, Federal Way, Issaquah, Kent, Kirkland, Mercer Island, Redmond, Renton, Seattle and Tukwila (hereafter the "**PSERN Interlocal Agreement**"). The parties to the PSERN Interlocal Agreement anticipate that a quasi-governmental public agency will be formed, which entity will assume the ownership and control of the PSERN System following its full acceptance ("**PSERN Operator**"). In such event, upon no less than ten days prior written notice to the Licensor, Licensee may assign this Agreement to the PSERN Operator; provided that such assignment shall not in any respect relieve King County, or its assignees, from any obligation, liability or claim, arising prior to the date of the assignment, but will operate to relieve King County of all future performance and obligations under this Agreement, and any claims or liabilities arising from acts or omissions occurring after such an assignment is approved by Licensor. Licensee shall no less than ten days following the effective date of the assignment, provide a copy of the assignment, together with the PSERN Operator's formation documents, to the Licensor which assignment shall be in writing and acknowledged by King County and a duly authorized representative of the PSERN Operator.

Subject to the foregoing restrictions on Licensee's assignments, this Agreement shall be fully binding upon, inure to the benefit of and be enforceable by the successors and assigns of the respective Parties hereto.

B. Name Change. If, during the term of this Agreement, Licensee changes its name, Licensee shall provide Licensor with documentation legally supporting the name change within sixty (60) days of the effective date of the change.

C. Integral Part of Licensee's Equipment. Notwithstanding the provisions in Section 33.A above, Licensee is expressly prohibited from permitting, licensing, or sublicensing any person or entity to place equipment on the Site that is not an integral part of Licensee's Equipment authorized under this Agreement and shown on **Exhibit B**.

D. Assignment, Sale, Use, or Transfer by Licensor. Licensor may make any sale, license, use or transfer of any part of the Property and/or Wireless Communications Facilities, provided such sale, license, use or transfer is subject to the terms and conditions of this Agreement.

34. LIENS

A. No Liens Permitted. Licensor's Property is not subject to being foreclosed upon by Licensee's lenders, creditors, contractors or materialmen. Therefore, Licensee must keep the Site free from any liens on Licensor-owned property arising from any Work performed, materials furnished, or obligations incurred by or at the request of the Licensee. Licensee retains the right to use the Equipment as collateral in financial transactions to the extent that Licensor's rights and interests are not affected. However, all financing agreements are subject to the provisions of this Agreement.

B. Costs to Discharge Liens. Licensee shall indemnify Licensor for any costs, damages or expenses incurred by Licensor as a result of Licensee filing any such lien on Licensor-owned property, including amounts paid by Licensor for the discharge or satisfaction of any lien, and all reasonable attorney's fees and other legal expenses of Licensor incurred in defending any such action or in obtaining the discharge of such lien, together with all reasonable disbursements in connection therewith.

35. PROPRIETARY INFORMATION

Any materials and other written electronic records submitted by Licensee to Licensor are subject to disclosure under the Public Records Act, Chapter 42.56 RCW.

Any submitted materials, records, or documents that Licensee claims are exempt from disclosure under the Public Records Act must be clearly designated as such. Each page, or portion thereof, that contains exempt material must be identified and the particular exemption from disclosure upon which Licensee is making the claim must be identified by the statutory citation number. Licensor will consider Licensee's request for exemption from disclosure. However, Licensor will make an independent decision on the applicability of any claimed exemption consistent with applicable laws. If a public record request is made regarding materials that Licensee has claimed are exempt, Licensor shall provide Licensee with notice of the request and allow Licensee ten (10) business days to seek a court injunction against the requested disclosure prior to Licensor fulfilling the public records request. All expense of any such action shall be borne by Licensee, including any damages, attorneys' fees or costs awarded by reason of having opposed disclosure. Licensor shall not be liable for any release where notice was provided and Licensee took no action to oppose the release of information.

36. CONTRACT ADMINISTRATION; NOTICES AND COMMUNICATIONS

A. Contract Administration. ITD, by and through its Radio Communications Manager or its designee, shall have primary responsibility for contract administration and approvals under this Agreement on behalf of the Licensor, and shall coordinate all communications between the Licensee and Licensor; provided that any modification to the boundaries of the Site, an assignment of this Agreement, and a material alteration shall additionally be approved by the Superintendent for Tacoma Water or its designee.

B. Formal Notice. Any formal notice, request, approval, consent, instruction, direction or other communication given by either Licensor or Licensee to the other pursuant to this

Agreement shall be in writing and shall be delivered by first class mail, return receipt requested, or by a reputable overnight courier service, to the individuals denoted below.

For Licensor:

Radio Communications Manager
Information Technology Department
733 Market Street, Fifth Floor
Tacoma, WA 98402

E-mail: staylor@cityoftacoma.org

For Licensee:

King County Facilities Management Division
Real Estate Services
Attn: Leasing Supervisor
Re: Indian Hill PSERN License
500 Fourth Avenue, Suite 830
Seattle, WA 98104

C. Informal Notice. Informal notices such as billings, technical or routine business communications may be by telephone and email; provided that a written statement summarizing the informal notice is mailed to the notified Party within a reasonable period of time thereafter.

D. In General. Either Party may from time to time change its formal notice, informal notice, Site maintenance and emergency contact information by giving the other Party formal notice of such change in accordance with the provisions of Section 36.B. Formal notice is deemed received one (1) business day following deposit with a reliable overnight courier, or three (3) business days following first class mailing.

E. Coordination of Site Maintenance: Communications regarding need to conduct maintenance on the Site, up to and including service interruptions will be communicated to the following contacts:

Site Access: Water Control Center; Ph.: (253) 502-8344

Licensor Primary: Radio Communications Manager Ph.: (253) 404-3790;
e-mail: staylor2@cityoftacoma.org

Licensor Secondary: Communications System Technician; Ph.: (253) 591-5487;
e-mail: robert.totten@cityoftacoma.org

Licensee Primary: Hai Phung; Ph.: (206) 263-7846;
e-mail: Hai.Phung@kingcounty.gov

Licensee Secondary: Sean Douglas; Ph.: (206) 263-8094;
e-mail: Sean.Douglas@kingcounty.gov

Each Party shall promptly notify the other of any change in such Party's contact information.

37. TIMELY RESPONSE

Each Party shall take such prompt action (including, but not limited to, the execution, acknowledgment and delivery of documents) as may reasonably be requested by the other Party for the implementation of continuing performance of this Agreement.

38. EMERGENCIES

In the event of an Emergency relating to Licensee's use of the Site, Licensee shall immediately contact Licensor at the emergency phone number below and take immediate action to correct any safety or use problems caused or contributed to by Licensee, even if the full repair cannot be made at the time, in order to protect persons and property. The Parties' respective emergency phone numbers are as follows:

Licensor: Water Control Center; Ph.: (253) 502-8344

Licensee: Hai Phung; Ph.: (206) 263-7846

Each Party shall promptly notify the other of any change in such Party's emergency phone number.

39. DISPUTE RESOLUTION

A. Dispute Resolution. Except as provided otherwise in this Agreement, any controversy between the Parties arising out of this Agreement or breach thereof, is subject to the mediation process described below.

(1) Meetings. A meeting will be held promptly between the Parties to attempt in good faith to negotiate a resolution of the dispute. The meeting will be attended by individuals with decision making authority regarding the dispute.

(2) Nonbinding Mediation. If within sixty (60) days after such meeting the Parties have not succeeded in resolving the dispute, they will within thirty (30) days submit the dispute to a mutually acceptable third-party mediator who is experienced in dispute resolution. The Parties will participate in good faith in the mediation and the mediation process. The mediation shall be nonbinding.

(3) Costs and Fees. The costs of mediation, including any mediator's fees and costs for the use of facilities during the hearings, shall be borne equally by both Parties. Each Party's costs and expenses will be borne by the Party incurring them.

B. If the Parties fail to achieve a resolution of the dispute through meeting or mediation within the cure periods provided for herein above, either Party may seek any and all remedies available at law and in equity to resolve any controversy between the Parties arising out of this Agreement or default or breach of this Agreement.

40. FORCE MAJEURE

If a Party is delayed or hindered in, or prevented from performance required under this Agreement by reason of Force Majeure (other than any delay or failure relating to payment of

money, including, without limitation, the Annual Use Fee and all reimbursable costs and expenses described elsewhere in this Agreement) such Party is excused from such performance for the period of delay. The period for the performance of any such act shall then be extended for the period of such delay.

41. SEVERABILITY

The invalidity or unenforceability of any provision of this Agreement shall not affect the other provisions hereof, and this Agreement shall be construed in all respects as if such invalid or unenforceable provisions were omitted.

42. SURVIVAL

All provisions of this Agreement which may reasonably be interpreted or construed as surviving the completion, termination or cancellation of this Agreement, shall survive the completion, termination or cancellation of this Agreement.

43. BINDING EFFECT; THIRD PARTY BENEFICIARIES

This Agreement will be binding on and inure to the benefit of the respective Parties' successors and permitted assignees. Nothing in this Agreement is intended to create any third party beneficiary relationships.

44. NON-WAIVER

The failure of either Party to insist upon or enforce strict performance by the other Party of any of the provisions of this Agreement, or to exercise any rights under this Agreement, shall not be construed as a waiver or relinquishment to any extent of its right to assert or rely upon such provisions or rights in that or any other instance; rather, the same shall be and remain in full force and effect.

45. HEADINGS

The headings of sections of this Agreement are for convenience of reference only and are not intended to restrict, affect or be of any weight in the interpretation or construction of the provisions of such sections.

46. EXAMINATION OF RECORDS

Licensee shall promptly furnish Licensor with such information reasonably related to the Work or the Equipment as may from time to time be reasonably requested by Licensor. Licensor shall promptly furnish Licensee with such information regarding the MOU, Site and Wireless Communications Facilities as may from time to time be reasonably requested by Licensee with regard to Licensee use and operation of Equipment on the Site.

47. APPLICABLE LAW

This Agreement shall be construed under the laws of the State of Washington. The venue for any legal action commenced to enforce any provision of this Agreement shall be Pierce County, Washington.

48. NON-DISCRIMINATION.

Licensor and Licensee, for themselves, their successors, and assigns as a part of the consideration hereof, do hereby covenant and agree to comply with all civil rights and anti-discrimination requirements of federal, state or local laws applicable to the Property, including, without limitation, Chapter 49.60 RCW. With regard to any work, activities, employment, contracting, licensing, services and any other conduct, speech or behavior arising out of, associated with or contemplated by the terms of this Agreement and any use of or operations on the Property, Licensor and Licensee shall not discriminate on the basis of race, color, marital status, national origin, religious affiliation, disability, sexual orientation, gender identity or expression or age, except by minimum age and retirement provisions, unless based upon a bona fide occupational qualification, in the employment or application for employment or in the administration or delivery of services or any other benefits under King County Code Chapter 12.16. Licensee shall comply fully with all applicable federal, state and local laws, ordinances, executive orders and regulations that prohibit such discrimination. These laws include, but are not limited to, Chapter 49.60 RCW, and Titles VI and VII of the Civil Rights Act of 1964. Any violation of this provision shall be considered a default of this Agreement and shall be grounds for cancellation, termination, or suspension, in whole or in part, of this Agreement and may result in ineligibility for further agreements between the Parties.

49. ENTIRE AGREEMENT

This Agreement, together with the exhibits and MOU referenced herein, listed herein below and attached hereto, constitute the entire agreement and understanding between the Parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained in this Agreement. There are no representations or understandings of any kind not set forth in this Agreement. Any amendments to this Agreement must be in writing and executed by both Parties.

Exhibit A – Description of Property, Premises, and Wireless Communications Facilities

Exhibit B – Description of Site, Permitted Use, and Equipment

Exhibit C – Fee Schedule

Exhibit D – Minimum Standards

Exhibit E - Interference Policy Statement

Exhibit F – MOU

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the last date signed by each Party's authorized representative herein below.

CITY OF TACOMA:

KING COUNTY:

Information Technology Department:

BY: _____
Daniel Key, Director
Information Technology Department

Date: _____

BY: _____
Anthony O. Wright
Director, Facilities Management Division

Date: _____

Department of Public Utilities:

Approved as to Form:

BY: _____

NAME: _____

TITLE: _____

Date: _____

Busch Law Firm PLLC

Approved as to Form:

BY: _____
Andy Cherullo, Finance Director

BY: _____
Deputy City Attorney

[ACKNOWLEDGEMENTS ON FOLLOWING PAGE]

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 20____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared Daniel Key, Director, Information Technology Department, for City of Tacoma, to me known to be the individual(s) that executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said individual(s), for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first written above.

NOTARY PUBLIC in and for the State of
Washington, residing at _____
My commission expires: _____

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 20____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared _____, Department of Public Utilities, for City of Tacoma to me known to be the individual(s) that executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said individual(s), for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first written above.

NOTARY PUBLIC in and for the State of
Washington, residing at _____
My commission expires: _____

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this _____ day of _____, 20____, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared Anthony O. Wright, Director, Facilities Management Division, for King County, to me known to be the individual that executed the within and foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said individual, for the uses and purposes therein mentioned, and on oath stated that he was authorized to execute said instrument, and that the seal affixed is the seal of said County.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first written above.

NOTARY PUBLIC in and for the State of
Washington, residing at _____.
My commission expires: _____

Exhibit A

(Description of Property, Premises, and Wireless Communications Facilities)

1. TPU Property Location Name:

Indian Hill Reservoir

2. Address of Property:

5225 Tower Drive NE, Tacoma, Washington

3. GPS Coordinates of Property:

47.3043071, -122.4136978

4. Legal Description of Property, on which the Site is located:

THAT PORTION OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 21 NORTH, RANGE 3 EAST, W.M., RECORDS OF PIERCE COUNTY, WASHINGTON, LYING SOUTHEASTERLY OF THE SOUTHEASTERLY MARGIN OF GALLEON DR. NE AND EASTERLY OF THE EASTERLY MARGIN OF TOWNER DR. NE AS SHOWN ON THE PLAT OF HARBOR RIDGE ESTATES DIV. I, AS RECORDED UNDER RECORDING NO. 8902080319, AND SOUTHWESTERLY OF THE WEST MARGIN OF ORCA DR. NE AS SHOWN ON THE PLATS OF HARBOR RIDGE ESTATES DIV. II, AS RECORDED UNDER RECORDING NO. 8911290425, AND HARBOR RIDGE ESTATES DIV. V, AS RECORDED UNDER RECORDING NO. 9107150224, AND NORTHWESTERLY OF THE NORTHERLY LINES OF LOTS 24 AND 31 OF SAID PLAT OF HARBOR RIDGE DIV. II;

EXCEPT THOSE PORTIONS CONVEYED UNDER QUIT CLAIM DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 8804130278;

AND TOGETHER WITH THOSE PORTIONS CONVEYED UNDER STATUTORY WARRANTY DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 8804130277.

SITUATE IN THE COUNTY OF PIERCE, STATE OF WASHINGTON.

APN: 032115 3026

5. The Premises and Wireless Communications Facilities are:

☒ Owned by Licensor

☐ Leased by Licensor (copy attached)

☐ Used under easement to Licensor (copy attached)

6. Description of Premises and Wireless Communications Facilities:

Premises are described in Exhibit C of the MOU attached to this Agreement at Exhibit F.
Wireless Communications Facilities: ITD's existing tower, existing communications building and space adjacent to the communications building for a new 1,000-gallon fuel tank, as depicted in the Site Plans attached to this Agreement at Exhibit B.

7. Utility services available for Licensee's use at the Wireless Communications Facilities:

Power provided by: Licensor

Telecommunications Landline provided by: Licensee

8. Construction work requested of Licensor by Licensee: None

Exhibit B
(Description of Site, Permitted Use, and Equipment)

1. Permitted Use:

Licensee has the right to use the Site for the construction, installation, operation, repair, maintenance, and removal of Licensee's communications Equipment, and related communications activities described and depicted in this Exhibit B. Licensee shall have the non-exclusive right of access across the Property to its Equipment and to the Fuel Tank (defined below) from a public right-of-way, and shall have the right to use Licensor's electricity and back-up power services at the Wireless Communications Facilities and Premises.

In addition, Licensee has the right to construct on the Property a new 1,000 gallon diesel fuel storage tank, supporting fuel lines to Licensor's existing generator, and related facilities (collectively, the "Fuel Tank"), and an added air conditioning system as described in Exhibit B-1, Sheet M1.1. Licensor shall own the Fuel Tank and added air conditioning system from and after the date installation is completed, but Licensee shall be responsible for fueling and maintaining the Fuel Tank and maintaining the added air conditioning system during the term of the Agreement, and shall have the non-exclusive right of access across the Property to the Fuel Tank and added air conditioning system during the term of the Agreement for such purposes. Licensee also has the right to extend Licensor's existing 100' Antenna Support Structure (aka the "Tower") by 30' ("Tower Extension"), to 130'. Licensee shall have the right to access the Property, Communications Building and Tower for construction and installation of the Fuel Tank, Tower Extension and added air conditioning system. From and after completion of construction and installation of the Fuel Tank, added air conditioning system and Tower Extension they shall be deemed part of the Licensor's Wireless Communications Facilities for all purposes in the Agreement.

2. Description of Site:

The space on and within Licensor's Wireless Communications Facilities that Licensee's Equipment will be installed, as described and depicted in this Exhibit B.

3. Antenna Physical Description and Location:

- 2 Microwave dishes, each four feet in diameter:
 - One at 42' elevation & one at 125' elevation on the Tower
- 5 LMR antennas, each fourteen and a half feet, all vertically oriented
 - 8CALL antenna: Omnidirectional, 100' elevation, Sinclair SC479-HF1LDF(D02-E5765), qty 1
 - P25 RX antenna: Omnidirectional, 130' elevation, Sinclair SC479-HF1LDF(D02-E5765), qty 2
 - P25 TX antenna: Omnidirectional, 110' elevation, Sinclair SC479-HF1LDF(D02-E5765), qty 2

4. Electronic Cabinet Physical Description and Location:

- 5 - 19" 2 post open racks 2'Wx12"Dx84"H
 - 3 racks located in row 3

- 2 racks located in row 4
 - 1 - 23" 4 post open rack 30"Wx24"Dx84"H located in row 5
 - 1 – Battery stack 37"Wx24"Dx60"H located on North wall near entrance
- 5a. Transmitter Description: (Microwave to Federal Way)
Manufacturer: Aviat
Model: IR600U
Frequency: 11.2 GHz
Bandwidth: 40 MHz
Power(ERP): 60.0
- 5b. Transmitter Description: (Microwave to CJTC)
Manufacturer: Aviat
Model: IR600U
Frequency: 11.2 GHz
Bandwidth: 40 MHz
Power(ERP): 65.6
- 5c. Transmitter Description: (LMR)
Manufacturer: Motorola
Model: GTR8000
Frequency: 800 MHz band, various
Bandwidth: 25KHz
Power(ERP): 52dBm
6. Drawings attached as Exhibits B-1, B-2, [etc.]
See attached 41 pages of Site Plans, including but not limited to the Site Plans for the Equipment Shelter, Tower Modifications, Fuel Tank, and Antennas.
7. Site Access Details and Provisions:
Licensee has 24 x 7 x 365 access to the Site and Fuel Tank, subject to the conditions of Sections 12, 14 and 15 of the Agreement.

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A-4.0.A	NORTH ELEVATIONS
A-5.0.A	DETAILS
A-5.1.A	DETAILS
ELECTRICAL	
E-1.A	GROUNDING PLAN
E-2.A	GROUNDING DETAILS AND NOTES

PROJECT SUMMARY

PROJECT MANAGER:
KING COUNTY DEPARTMENT OF
INFORMATION TECHNOLOGY (KIDT)
401 5TH AVENUE, 6TH FLOOR
SEATTLE, WA 98104
CONTACT: HAI PHUNG
PHONE: 206-263-7848
MOBILE: 206-263-7848
EMAIL: HaiPhung@KingCounty.gov

TECHNICAL LEAD:
KING COUNTY DEPARTMENT OF
INFORMATION TECHNOLOGY (KIDT)
401 5TH AVENUE, 6TH FLOOR
SEATTLE, WA 98104
CONTACT: SEAN DOUGLAS
OFFICE: 206-263-0684
MOBILE: 206-263-1668
EMAIL: Sean.Douglas@KingCounty.gov

CONSTRUCTION MANAGER:
KING COUNTY DEPARTMENT OF
INFORMATION TECHNOLOGY (KIDT)
401 5TH AVENUE, 6TH FLOOR
SEATTLE, WA 98104
CONTACT: MARK WILLIAMS
OFFICE: 206-263-1327
MOBILE: 206-940-7772
EMAIL: Mark.Williams@KingCounty.gov

SITE NAME: INDIAN HILLS #1
SITE ADDRESS: 5225 TOWER DRIVE
TACOMA, WA 98422
LAND OWNER: CITY OF TACOMA
3628 S 35TH ST
TACOMA, WA 98409-3115
CITY OF TACOMA
0321153026
130,498 SQ. FT. (3.0 ACRES)
R-1 PRD VSD
U (UNOCCUPIED)
V-B
NEW IMPROVED
SURFACES
PROJECT DESCRIPTION
(THE SCOPE OF WORK INCLUDES)
NEW KING COUNTY PUGET SOUND EMERGENCY RADIO NETWORK (PSERN)
CO-LOCATION OF NEW PSERN ANTENNAS ON AN EXISTING 100' (EXTENDED
TO 130') TOWER AND ASSOCIATED EQUIPMENT TO PROVIDE EMERGENCY
RADIO COMMUNICATIONS TO REACH AND COORDINATE WITH EMERGENCY
RESPONDERS.

PUGET SOUND EMERGENCY RADIO NETWORK

(ANTENNAS / EQUIPMENT SHELTER / TOWER MOD)

INDIAN HILL #1

5225 TOWER DRIVE
TACOMA, WA 98422

LATITUDE: 47° 18' 16.56" N (NAD 83)
LONGITUDE: 122° 24' 42.68" W (NAD 83)
GROUND ELEVATION: 549.50' (NAVD 88)

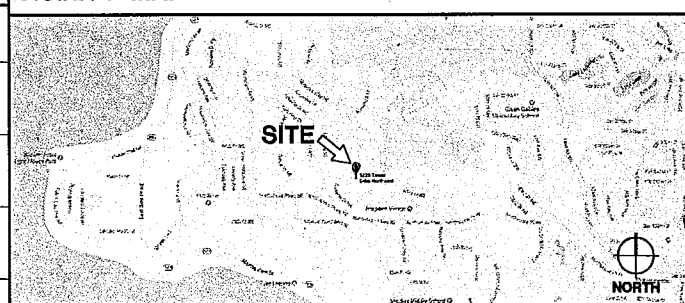
DEFERRED SUBMITTALS
• EQUIPMENT RACKS

WASHINGTON STATE CODE COMPLIANCE:
2015 IBC, STANDARDS AND AMENDMENTS, WAC 51-50
2015 IMC, STANDARDS AND AMENDMENTS, WAC 51-52
2015 IFG, STANDARDS AND AMENDMENTS, WAC 51-54
2017 NEC, STANDARDS AND AMENDMENTS, WAC 296-46B
2015 ECC/WASHINGTON STATE ENERGY CODE, WAC 51-110
CITY OF TACOMA CODE COMPLIANCE:
TACOMA MUNICIPAL CODE - TITLE 2 - BUILDING CODE
TACOMA AMENDMENTS - 2015 IBC
TACOMA AMENDMENTS - 2015 IMC
TACOMA AMENDMENTS - 2015 IFG
TACOMA AMENDMENTS - 2017 NEC

SIGNATURE BLOCK

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

VICINITY MAP



DRIVING DIRECTIONS:
1) DEPART 401 5TH AVE. AND TURN RIGHT ONTO JEFFERSON ST. [0.1 MI.] 2) TURN RIGHT ONTO 6TH AVE. [157 FT.] 3) USE THE LEFT LANE TO TAKE THE RAMP TO PORTLAND [0.6 MI.] 4) USE THE LEFT 2 LANES TO KEEP LEFT AT THE FORK AND FOLLOW SIGNS FOR AIRPORT WAY [459 FT.] 5) KEEP LEFT, FOLLOW SIGNS FOR SEA-TAC AIRPORT/INTERSTATE 5 S AND MERGE ONTO I-5 S [10 MI.] 6) KEEP RIGHT TO STAY ON I-5 S [10.5 MI.] 7) USE THE RIGHT LANE TO TAKE EXIT 143 FOR S 320TH ST. TOWARD FEDERAL WAY [0.3 MI.] 8) CONTINUE ON S 320TH ST. DRIVE TO 55TH ST. NE IN PIERCE COUNTY [5.5 MI.] 9) USE THE RIGHT 3 LANES TO TURN RIGHT ONTO S 320TH ST. [4.5 MI.] 10) TURN LEFT ONTO HOYT RD. SW [0.6 MI.] 11) TURN RIGHT ONTO SW 320TH WAY [0.3 MI.] 12) TURN LEFT ONTO 49TH AVE. SW [420 FT.] 13) TURN RIGHT ONTO SW 330TH ST. [478 FT.] 14) TURN LEFT ONTO 55TH ST. NE [194 FT.] 15) TURN RIGHT ONTO LOCAL ROAD 16) ARRIVE AT SITE.

CONFIDENTIAL AND PROPRIETARY



PSERN
PUGET SOUND EMERGENCY
RADIO NETWORK
Coverage • Capacity • Exp. • Res. • Connectivity

INDIAN HILL #1
EQUIPMENT
SHELTER / TOWER
MOD
5225 TOWER DRIVE
TACOMA, WA 98422

CDL
RADIO CORPORATION
5508 8TH AVE. S, SUITE 202
SEATTLE, WA 98108
PHONE: (206) 460-3833
WWW.CDLA.COM

CAMP+
ASSOCIATES
19401 4TH AVE. W, SUITE 304
LYNNWOOD, WA 98036
PHONE: (206) 744-5062
FAX: (206) 744-5069
WWW.CAMPASSOC.COM

PROJECT MANAGER: EAC

PREPARED BY: db

APPROVED BY: db

APPROVED BY: db

APPROVED BY: db

APPROVED BY: db

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TABLE 1705.2 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	—	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	—	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	—	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	—
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	—	X

STEEL SPECIAL INSPECTIONS		
ALSO 380 - TABLE NS-6-1 INSPECTION TASKS PRIOR TO BOLTING		
INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	0	0
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	0	0
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	0	0
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	0	0
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE PAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	0	0
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	0	0

ALSO 380 - TABLE NS-6-2 INSPECTION TASKS DURING BOLTING		
INSPECTION TASKS DURING BOLTING	QC	QA
FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	0	0
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	0	0
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	0	0
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH RSO SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	0	0

ALSO 380 - TABLE NS-6-3 INSPECTION TASKS AFTER BOLTING		
INSPECTION TASKS AFTER BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

QC = QUALITY CONTROL TASKS TO BE PERFORMED BY STEEL FABRICATOR OR ERECTOR.
QA = QUALITY ASSURANCE TASKS TO BE PERFORMED BY A SPECIAL INSPECTION AGENCY OR INDIVIDUALS DESIGNATED BY AWS D5.1 OR INDIVIDUALS QUALIFIED UNDER THE PROVISIONS OF AWS D1.1/D1.1M SUBCLAUSE 6.1.4.
D = OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
P = PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.

IBC 1704.6 STRUCTURAL OBSERVATIONS	
STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE - STRUCTURE IS CLASSIFIED AS RISK CATEGORY IV.	
STRUCTURAL OBSERVATIONS FOR WIND REQUIREMENTS - STRUCTURE IS CLASSIFIED AS RISK CATEGORY IV.	

SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 110 AND CH. 17 SHALL BE PERFORMED (AS REQUIRED) BY A QUALIFIED TESTING AGENCY APPROVED BY THE ARCHITECT/ENGINEER. INSPECTION AGENCY SHALL BE RETAINED BY THE PROJECT OWNER OR THEIR RESPONSIBLE CHARGE. THE ARCHITECT, ENGINEER OF RECORD, AND BUILDING DEPARTMENT SHALL RECEIVE COPIES OF ALL INSPECTION AND TEST RESULTS. REFER TO DOCUMENTS FOR SPECIFIC INFORMATION.

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION				
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCE STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	—	X	ACI 318 CH. 20, 26.2, 26.3, 26.4.1-26.4.3	1906.4
2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND C. INSPECT ALL OTHER WELDS.	— X	X X	AWS D1.4 ACI 318: 26.4.4	—
3. INSPECT ANCHORS IN CAST CONCRETE.	—	X	ACI 318: 17.4.2	—
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS: A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X	X	ACI 318: 17.4.2.4	1904.1, 1904.2, 1906.2, 1906.3
5. VERIFY USE OF REQUIRED DESIGN MIX.	—	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1906.2, 1906.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE OF THE CONCRETE.	X	—	ASTM C172 ACI 318: 26.4, 26.12	1906.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	—	ACI 318: 23.5	1906.6, 1906.7, 1906.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	—	X	ACI 318: 26.5.3-26.5.5	1906.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUPING OF BONDED PRESTRESSING TENDONS.	X	—	ACI 318: 26.10	—
10. INSPECT EROSION OF PRECAST CONCRETE MEMBERS.	—	X	ACI 318: 26.8	—
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	—	X	ACI 318: 28.11.2	—
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	—	X	ACI 318: 28.11.2	—

TABLE 1705.7 REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS.	X	—
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED.	X	—
3. INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	—
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	X	—
5. FOR STEEL ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	—	—
6. FOR CONCRETE ELEMENTS AND CONCRETE-FILLED ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	—	—
7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.	—	—

TABLE 1705.8 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	—
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE), AND ADEQUATE END-BEARING STRATA CAPACITY, RECORD CONCRETE OR GROUT VOLUMES.	X	—
3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	—	—



PSERN
PUGET SOUND EMERGENCY
RADIO NETWORK
Disaster Response • Capability • Connectivity

INDIAN HILL #1
EQUIPMENT
SHELTER / TOWER
MOD
5225 TOWER DRIVE
TACOMA, WA 98422

REGENT PACIFIC CORPORATION
5500 8TH AVE. S. SUITE 202
SEATTLE, WA 98108
PHONE: (206) 490-3626
WWW.REGENT.COM

CAMP+
ASSOCIATES
16401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 749-4192
FAX: (425) 749-2661
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

NO 09-14-18 ISSUED FOR PERMIT
NO 09-14-18 ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

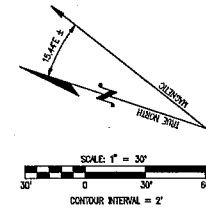
PROFESSIONAL STAMP
12345
REGISTERED
ARCHITECT
GEORGE J. VITALE
STATE OF WASHINGTON
04/01/18

SHEET NAME
SPECIAL
INSPECTIONS

SHEET NUMBER
SP-2

LDC JOB: 17-713

SW 1/4, SEC. 15, T 21 N, R 3 E, W.M.
PIERCE COUNTY, WASHINGTON



LDC JOB: 17-713

PACIFIC CORPORATION



LDC Architectural
Engineering
Structural
Survey

THE CIVIL ENGINEERING GROUP

14201 NE 280th St. #100 Ph. 425.888.1000
Woodinville, WA 98072 Fx. 425.482.2693

www.LDCcorp.com

DATE:	6-27-17
DRAWN BY:	NY
CHECKED BY:	VJT

[illegible]

SITE
PSERN
INDIAN HILLS
5225 TOWER DRIVE NE
TACOMA, WA 98422

SHEET TITLE
CIVIL SURVEY

SHEET NUMBER
SV-1.1

INDIAN HILLS #1

5225 TOWER DRIVE TACOMA, WA 98422

APPLICANT

DELTA PACIFIC CORP
5506 6TH AVE S, SUITE 202
SEATTLE, WA 98108
206.490.3625
CONTACT: BAYSON BURGHARDT

CONSULTANTS

ARCHITECT
CAMP & ASSOCIATES
13403 30TH AVE N, SUITE 304
LYNNWOOD, WA 98036
425.740.6330
CONTACT: JANE CAMP

SURVEYOR

LIC
14081 NE 30TH ST, #100
WOODINVILLE, WA 98072
425.800.1800

CIVIL ENGINEER

CC ENGINEERING
350 17TH AVE S, SUITE 200
LYNNWOOD, WA 98036
425.778.8500 FAX 778.5536
CONTACT: JANE UNDERHILL, PE

LEGAL DESCRIPTION

THAT PORTION OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 21 NORTH, RANGE 3 EAST, W.M., RECORDS OF JENSEN COUNTY, WASHINGTON, LYING SOUTHWESTERLY OF THE SOUTHEASTLY CORNER OF GALELION DRIVE NE AND EASTERLY OF THE EASTERN MARGIN OF TOWER DR NE AS SHOWN ON THE PLAT OF HARBOR RIDGE ESTATES DR, L.S., RECORDED UNDER RECORDING NO. 85208010, AND SOUTHWESTERLY OF THE WEST MARGIN OF ONEIDA DR NE AS SHOWN ON THE PLAT OF HARBOR RIDGE ESTATES DR, L.S., AS RECORDED UNDER RECORDING NO. 80912040, AND HARBOR RIDGE ESTATES DR, V, AS RECORDED UNDER RECORDING NO. 930750424, AND NORTHEASTERLY OF THE NORTHERLY LINES OF LOTS 24 AND 31 OF SAID PLAT OF HARBOR RIDGE DR, V.

EXCEPT THOSE PORTIONS CONVEYED UNDER CLAIM DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 804813072, AND TOGETHER WITH THOSE PORTIONS CONVEYED UNDER STATUTORY WARRANTY DEED RECORDED APRIL 13, 1988 UNDER RECORDING NO. 804813077.

SITUATE IN THE COUNTY OF PERCE, STATE OF WASHINGTON.

BENCHMARK

DATE 08
NAD 83

TAX PARCEL NUMBER

0321159020



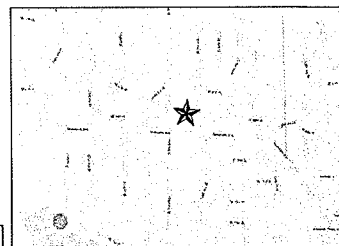
CAUTION!
CALL BEFORE YOU DIG!
BURIED UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE ONE-CALL UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
1-800-424-5555

SHEET INDEX

- C1.1 COVER SHEET & GENERAL NOTES
- C1.2 TEMPORARY EROSION CONTROL PLAN
- C1.3 SHADING & DRAINAGE PLAN

SUGGESTED TEMPORARY EROSION CONTROL MEASURES

- REFER TO VOLUME 8 OF THE DEPARTMENT OF ECOLOGY FOR BMP DETAILS AND FOR ADDITIONAL BMP MEASURES. BMP NUMBERING FOR EIC PLAN REFERS TO 2002 DEPARTMENT OF ECOLOGY MANUAL, VOLUME 1, SECTION 4.
- 1. PLASTIC OR METAL FENCE (BMP C103)
- 2. TEMPORARY CONSTRUCTION ENTRANCE (BMP C107)
- 3. TEMPORARY & PERMANENT SEDGINS (BMP C132)
- 4. PLASTIC COVERING (BMP C123)
- 5. SILT FENCE (BMP C235)



VICINITY MAP

NTS

★ PROJECT SITE

SITE AREAS

SITE IMPERVIOUS		
PARCEL SIZE:	3.0	ACRES
NEW IMPERVIOUS:	485	SQ FT
REPLACED IMPERVIOUS:	0	SQ FT
NEW PLUS REPLACED IMPERVIOUS:	485	SQ FT

GENERAL NOTES

SHADING, ELEVATION, AND EROSION CONTROL NOTES

- ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE APPROVED GRADING PLAN, SLOES REPORT, THE MOST CURRENT WOOD STANDARD SPECIFICATIONS FOR ROADS, BRIDGE AND MUNICIPAL CONSTRUCTION AND THE CURRENT CITY OF TACOMA STORMWATER MANAGEMENT MANUAL.
- WHEN CONSTRUCTION OPERATIONS ARE SUCH THAT DERRIS FROM THE WORK IS DISCLOSED IN THE STREET, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DERRIS OR DERRIS WHICH MAY ACCUMULATE ON THE ROADWAY SURFACE. IF THE CONTRACTOR FAILS TO KEEP THE STREETS FREE FROM DERRIS AND DERRIS RESULTING FROM THE WORK, THE CONTRACTOR SHALL, UPON ORDER OF THE CITY OF TACOMA, INSPECTOR, REMOVE THE DERRIS, AND REMOVE ALL CLAY, DIRT, OR OTHER DERRIS FROM THE STREETS OR HIGHWAYS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DERRIS TO BE REMOVED TO TRAVEL OVER PAVED STREETS. SHOULD THE CONTRACTOR FAIL OR REFUSE TO CLEAN THE STREETS IN QUESTION, OR THE TRUCKS OR EQUIPMENT IN QUESTION, THE CITY OF TACOMA INSPECTOR MAY ORDER THE WORK STOPPED AT THE CITY OF TACOMA INSPECTOR'S DISCRETION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DERRIS TO BE REMOVED TO TRAVEL OVER PAVED STREETS. SHOULD THE CONTRACTOR FAIL OR REFUSE TO CLEAN THE STREETS IN QUESTION, OR THE TRUCKS OR EQUIPMENT IN QUESTION, THE CITY OF TACOMA INSPECTOR MAY ORDER THE WORK STOPPED AT THE CITY OF TACOMA INSPECTOR'S DISCRETION.
- THE CONTRACTOR SHALL PROTECT EXISTING UTILITY STRUCTURES USING ACCEPTABLE METHODS AND MATERIALS AS SHOWN ON THIS PLAN. IF THE METHODS AND MATERIALS AS SHOWN ON THIS PLAN ARE NOT SUFFICIENT, THE CITY OF TACOMA INSPECTOR MAY REQUIRE ADDITIONAL ALTERNATIVE METHODS FOR EROSION CONTROL AND/OR PROTECTION OF EXISTING UTILITY STRUCTURES. ADDITIONAL ALTERNATIVE METHODS SHALL BE SUBMITTED BY THE DESIGN ENGINEER AND ACCEPTED BY THE CITY OF TACOMA INSPECTOR. ANY DAMAGE CAUSED TO THE CITY OF TACOMA STORMWATER SYSTEM AS A RESULT OF THE WORK COMPLETED ON THIS PLAN SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. RESOLVING SAID DAMAGE MAY INCLUDE, BUT NOT BE LIMITED TO, THE CLEANING OF THE DRAINAGE SYSTEM IN QUESTION BY THE CONTRACTOR.
- WATERING PROVIDED WITH APPROXIMATE 10% IN PLACE TO PREVENT DUST FROM BECOMING AIR BORNE. VIOLATION OF THIS CONDITION WILL RESULT IN A STOP WORK ORDER UNTIL CORRECTED.
- FILL THAT WILL SUPPORT A STREET SECTION OR OTHER STRUCTURES SHALL BE PLACED UNDER THE INSPECTION OF A WASHINGTON STATE LICENSED GEOLOGICAL ENGINEER. SOIL TO BE PLACED SHALL BE TESTED AND COMPARED TO THE PERCENT OF ITS MINIMUM DENSITY. ENGINEER SHALL DOCUMENT EXISTING SITE CONDITIONS, SOIL ALSO ITS PLACEMENT AND ALLOWABLE BEARING CAPACITY. STANDARD REQUIREMENTS FOR CUTS AND FILL ARE CONTAINED IN THE WASHINGTON STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND MUNICIPAL CONSTRUCTION.
- A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS REQUIRED FOR ALL WORK ORDER PROJECTS. THE PLAN MUST BE IN ACCORDANCE WITH THE CURRENT CITY OF TACOMA STORMWATER MANAGEMENT MANUAL.

EROSION CONTROL MEASURES

- MINIMUM EROSION CONTROL MEASURES SHALL INCLUDE:
 1. CONSTRUCTION PERMITS.
 2. PERMANENT EROSION/SEDIMENTATION CONTROL.
 3. PROTECTION OF CATCH BASINS.
 4. EROSION CONTROL OF UNPAVED SLOES.
- ALL EROSION CONTROL SHALL BE IN PLACE PRIOR TO CLEANING. THE CONTRACTOR SHALL CALL THE CITY OF TACOMA INSPECTOR FOR INITIAL EROSION CONTROL INSPECTION PRIOR TO START OF WORK. PER L.S. 1, BELOW.
- EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES TO THE APPROVAL OF THE CITY OF TACOMA INSPECTOR.
- SHOULD TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES, AS SHOWN ON PLANS BECOME INADEQUATE, THE CONTRACTOR SHALL NOTIFY THE CITY OF TACOMA INSPECTOR TO PROVIDE ALTERNATIVE MEASURES AND THE CITY OF TACOMA INSPECTOR SHALL MEETING APPROVAL OF THE CITY OF TACOMA INSPECTOR.
- NO PERMITS TO PERSONS GRADING, EXCAVATION, OR FILLING DURING THE PERIOD FROM OCTOBER 1ST THROUGH MARCH 31ST SHALL BE REQUIRED. EXCEPTION: THE CITY MAY APPROVE A GRADING, EXCAVATION, OR FILLING PLAN PREPARED BY A LICENSED PROFESSIONAL ENGINEER WHICH SPECIFICALLY ADDRESSES THE WINTER RAIN SEASON AND THE ASSOCIATED EROSION AND SEDIMENTATION CONTROL MEASURES. SUCH PLAN SHALL CALL FOR INSPECTION OF THE CITY OF TACOMA INSPECTOR UPON COMPLETION OF:
 1. STAGING OF CLEARING LIMITS.
 2. INSTALLATION OF EROSION CONTROL, AND PRIOR TO SITE GRADING.
 3. PRIOR TO RESUMPTION OF EROSION CONTROL, DELVEYS.
- ALL MATERIAL REMOVED FROM SITE SHALL BE PLACED ON A PERMITTED SITE. VERIFY LOCATION OF DESTINATION OF MATERIAL PRIOR TO EXPORTATION.
- TRAFFIC CONTROL MEASURES AS APPROVED BY THE CITY TRAFFIC ENGINEER SHALL BE ADHERED TO AT ALL TIMES.
- TREES TO BE REMOVED SHALL BE CLEARLY MARKED FOR REMOVAL. TREES TO BE SAVED SHALL BE FENCED WITH BARRICADE FENCE AT THE TOP AND BOTTOM OF THE TREE BRANCHES TO KEEP CONSTRUCTION VEHICLES FROM CONTACTING ROOT ZONE AND FELLING TREES. THIS FENCING SHALL BE MAINTAINED UNTIL CONSTRUCTION LIMS.
- THE PROTECTION MEASURES TO BE INSTALLED WITHIN 14 DAYS OF THE START OF WORK. THE PROTECTION MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF SITE WORK. REFER TO CITY OF TACOMA STD. PLANS 15-08 THROUGH 15-11.

RECOMMENDED CONSTRUCTION SEQUENCE

- HOLD THE PRE CONSTRUCTION MEETING.
- POST SIGN WITH NAME AND PHONE NUMBER OF CSW/SP/SE SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN).
- FLAG OR FENCE CLEARING LIMITS.
- INSTALL CATCH BASIN PROTECTION, IF REQUIRED. INSTALL FLOW CONTROL BMP AREA PROTECTION, IF REQUIRED.
- GRADE AND INSTALL CONSTRUCTION ENTRANCES.
- INSTALL EROSION PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).
- CONSTRUCT SURFACE WATER CONTROLS (INLET/OUTLET DRAIN, PIPE SLOPE DRAINS, ETC.) SHORLY AFTER START OF CONSTRUCTION AND PROVIDE PROTECT DEVELOPMENT. CONSTRUCT SWMPS IN ANTICIPATION OF SCHEDULED CONSTRUCTION ACTIVITY (E.G., CONCRETE-RELATED PHASES FOR UTILITY, WALK OR ROADWAY CONSTRUCTION).
- MAINTAIN EROSION CONTROL AND SWMPS MEASURES IN ACCORDANCE WITH CITY OF TACOMA STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
- RELOCATE EROSION CONTROL AND SWMPS MEASURES. ON INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL AND POLLUTANT PROTECTION IS ALWAYS IN ACCORDANCE WITH THE KING COUNTY CONSTRUCTION STORMWATER POLLUTION PREVENTION STANDARDS.
- COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FEEB MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.
- STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.
- SEED, SOIL, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
- UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPs IF APPROPRIATE.

LEGEND		ABBREVIATIONS	
DESCRIPTION	EXISTING	PROPOSED	
PROPERTY LINE			ABN ABANDONED
ADJACENT PROPERTY LINE			BDG BUILDING
CENTERLINE			BOW BOTTOM OF WALL
CLEARING LIMITS			CB CATCH BASIN
SILT FENCE			CMF CORRUGATED METAL PIPE
CONTOUR LINE			CLD CLEAROUT
FENCE			CONC CONCRETE
SANITARY SEWER LINE			CONST CONSTRUCTION
MANHOLE			CP CONCRETE PIPE
STORM DRAIN MAIN			CU YD CUBIC YARD
STORM DRAIN PIPE			DDCA DOUBLE DETECTOR CHECK VALVE ASSEMBLY
ROOF DRAIN			DI DUCTILE IRON PIPE
FOOTING DRAIN			DIA DIAMETER
PRESSURE LINE			DIP DUCTILE IRON PIPE
CATCH BASIN (TYPE 1)			EA EACH
CATCH BASIN (TYPE 2)			EX EXPANSION POINT
CLEANOUT			ELEV ELEVATION
CLEANOUT AND VME			EDP EDGE OF PAVEMENT
GRADE BREAK			EX EXISTING
SURFACE SWALE			FDK FIRE DEPT. CONNECTION
DRAINAGE ARROW			FTE FINISHED FLOOR ELEVATION
WATER LINE			FI FIRE HYDRANT
WATER METER			FL FLANGES
FIRE HYDRANT			FT FEET/FOOT
FEC			GV GATE VALVE
PRV			HP HIGH POINT
GATE VALVE			HT HEIGHT
TEL			HD HORIZONTAL EXHAUST
NOT ROAD			IE INVERT ELEVATION
THURST BLOCKING			LE LENGTH/LENGTH
CAF			LCF LINEAR CORRUGATED POLYETHYLENE PIPE
CONCRETE PAVEMENT			LP LINEAL FOOT
ASPHALT PAVEMENT			LP LOW POINT
CRUSHED SURFACING			LT LENGTH
ROCKERY			MC MAXIMUM
SPOT ELEVATION			MEC1 MICROCHANNEL
TELEPHONE LINE			MH MANHOLE
POWER LINE			
GAS LINE			
SIGN			



INDIAN HILLS 1

(NEW BUILD)
5225 TOWER DRIVE
TACOMA WA 98422



CG PROJECT# 16015.922

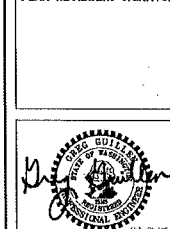
PROJECT MANAGER JPU

PREPARED BY AID

APPROVED BY GAO

REV	DATE	DESCRIPTION
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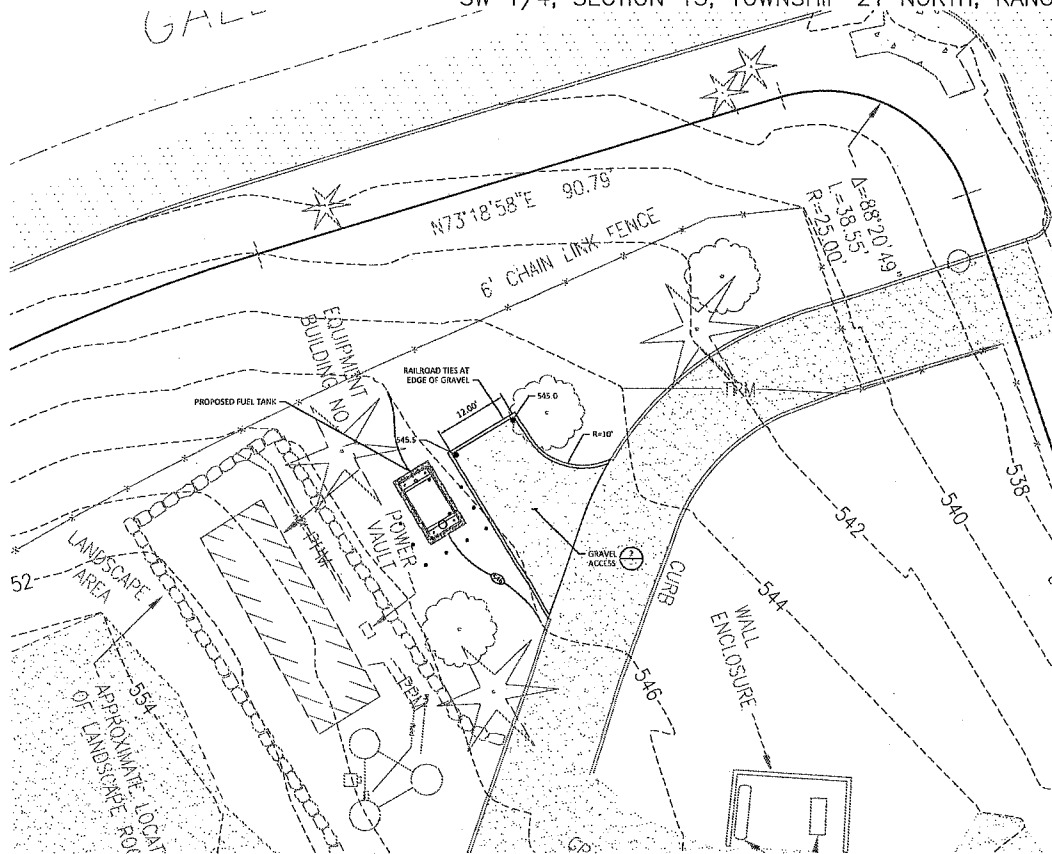
PLAN REVIEWERS SIGNATURE



SHEET NAME
COVER SHEET
AND GENERAL
NOTES

SHEET NUMBER
C1.1

SW 1/4, SECTION 15, TOWNSHIP 21 NORTH, RANGE 3 EAST, W.M.

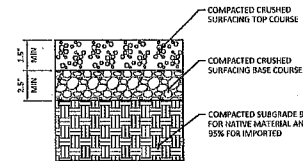


1 GRADING PLAN
SCALE: 1" = 10' 0"



GRADING QUANTITIES	
TOTAL EXCAVATION (CUT) -	5 CU YDS TOTAL
EMBANKMENT (FILL) -	5 CU YDS
TOTAL	10 CU YDS

THE QUANTITIES SHOWN ABOVE ARE FOR THE PERMIT PROCESS ONLY. THESE VALUES ARE APPROXIMATE. DO NOT USE FOR BIDDING, PAYMENT, OR ESTIMATING PURPOSES.



2 GRAVEL PAVING DETAIL
SCALE: NTS



INDIAN HILLS 1

(NEW BUILD)
5325 TOWER DRIVE
TACOMA WA 98422



CG PROJECT# 16015.922

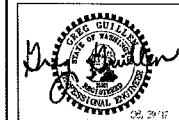
PROJECT MANAGER JPU

PREPARED BY ATD

APPROVED BY GAG

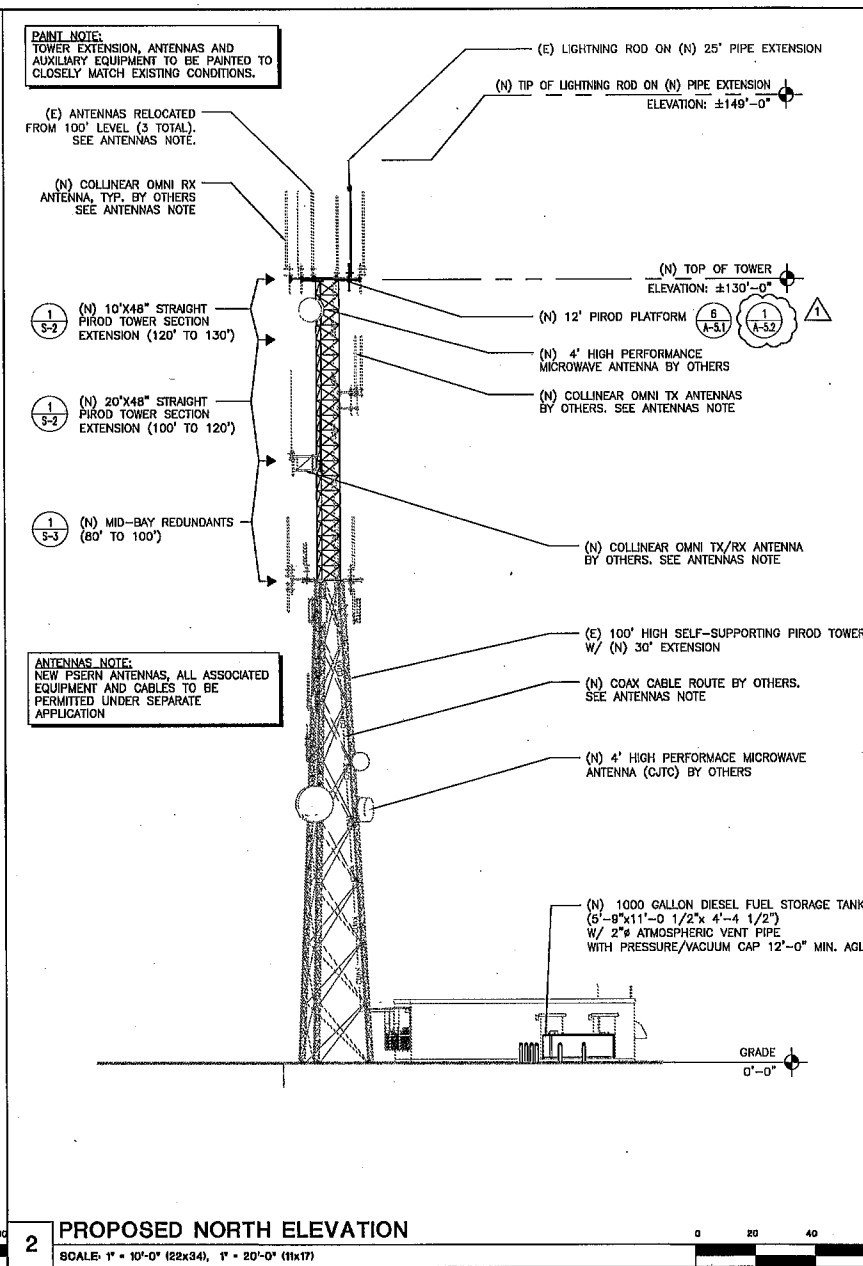
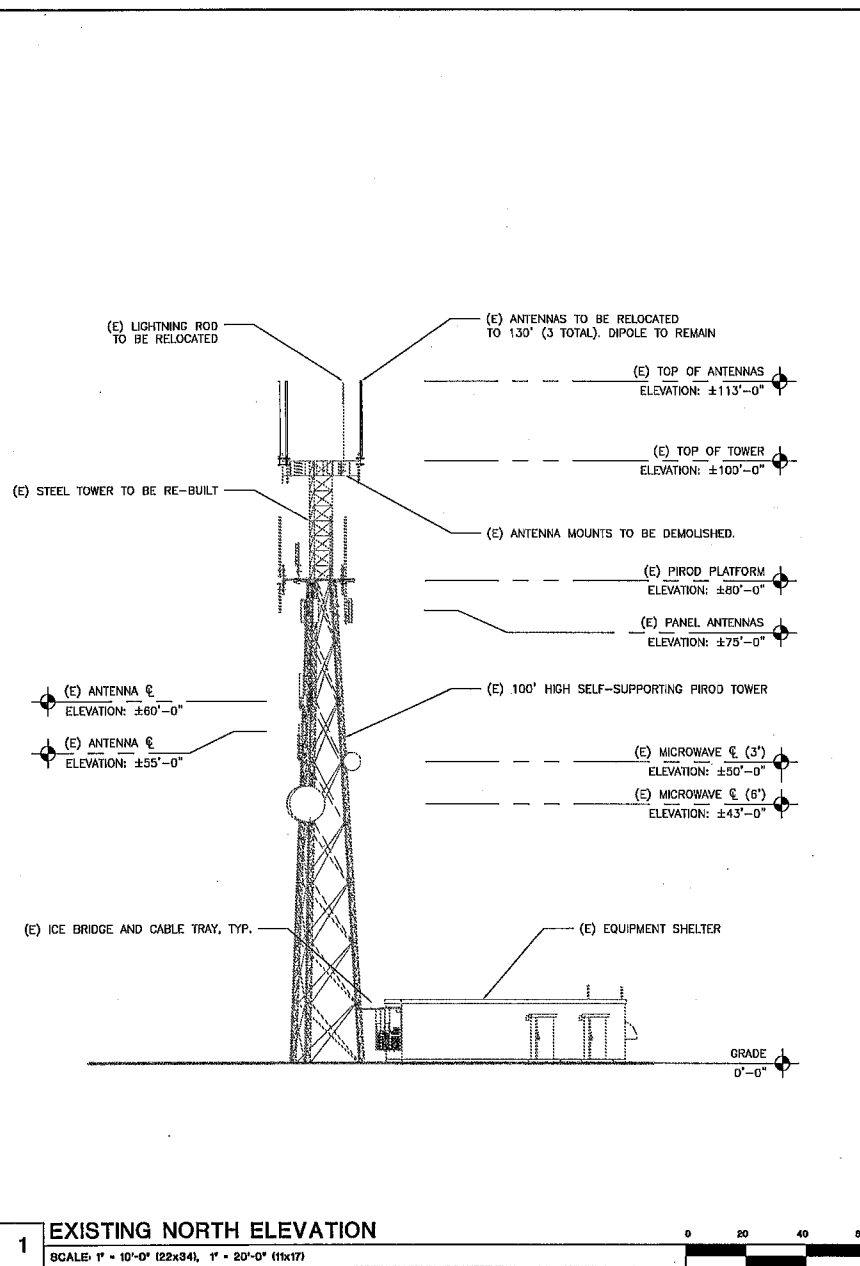
REV	DATE	DESCRIPTION

PLAN REVIEWER'S SIGNATURE



SHEET NAME
GRADING PLAN

SHEET NUMBER
C3.1



King County

PSERN
PUGET SOUND EMERGENCY
RADIO NETWORK
Emergency • Dispatch • Coordination • Administration

INDIAN HILL #1
(EQUIPMENT
SHELTER / TOWER
MOD)
6225 TOWER DRIVE
TACOMA, WA 98422

PIRADA CORPORATION
5505 5TH AVE., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 455-3258
WWW.PIRADA.COM

CAMP+ ASSOCIATES
10401 10TH AVE., W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 745-4392
FAX: (425) 745-0205
WWW.CAMPASSOCIATES.COM

PROJECT MANAGER: EJC

PREPARED BY: JBT

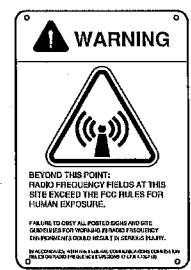
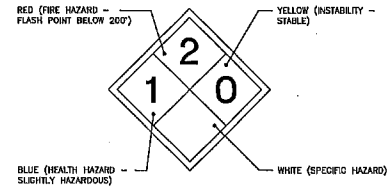
APPROVED BY: LM

PLAN REVIEWERS SIGNATURE

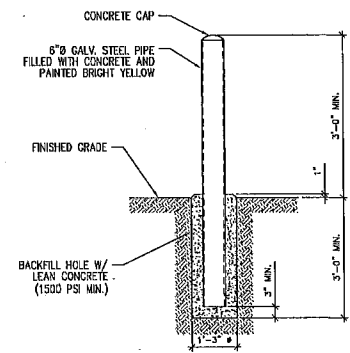
PROFESSIONAL STAMP
12346
REGISTERED ARCHITECT
George J. Vitale
STATE OF WASHINGTON
12345

SHEET NAME
NORTH
ELEVATIONS

SHEET NUMBER
A-4.0



NOTE: INSTALL PER MANUFACTURER SPECIFICATIONS AND FCC GUIDELINES

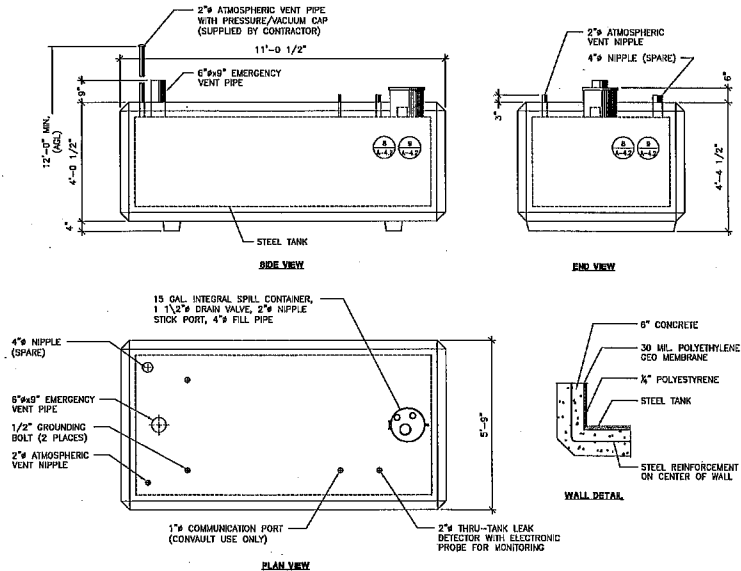


9 COMBUSTIBLE LIQUIDS SIGN
NOT TO SCALE

8 HAZARDOUS MATERIAL CLASSIFICATION SIGN (DIESEL)
NOT TO SCALE

4 RF WARNING SIGN
NOT TO SCALE

1 BOLLARD DETAIL
NOT TO SCALE

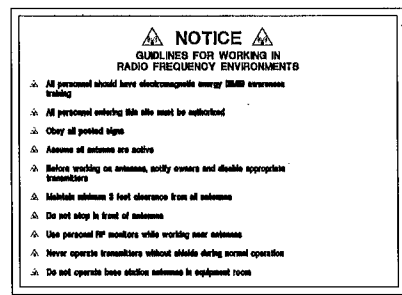


- CONVAULT 1000 GAL. TANK NOTES:
1. STEEL TANK SHALL BE U.L. 142 LISTED FOR ABOVE GROUND STORAGE OF FLAMMABLE LIQUIDS.
 2. STEEL TANK SKIN SHALL BE 3/16" THICK A.S.T.M. A-36 STEEL PLATE.
 3. ALL EXPOSED METAL WITH THE EXCEPTION OF STAINLESS STEEL MUST BE POWDER COATED TO INHIBIT CORROSION.
 4. STEEL TANKS SHALL BE RECTANGULAR IN SHAPE AND HAVE CONTINUOUS WELDS ON THE OUTSIDE.
 5. STEEL TANK AND SECONDARY CONTAINMENT SHALL BE ENCASED IN SIX INCHES OF 4000 P.S.I. REINFORCED CONCRETE.
 6. STEEL TANK SHALL BE PRESSURE TESTED AT 5 P.S.I.G. FOR 24 HOURS WITHOUT PRESSURE DROP.
 7. TANK WALL SYSTEM SHALL BE LISTED IN ACCORDANCE WITH U.L. STANDARD 2085 AND SHOWN TO HAVE A TWO HOUR FIRE RATING.
 8. VAULTS SHALL HAVE THE CAPABILITY OF PHYSICAL MONITORING BETWEEN THE PRIMARY AND THE SECONDARY CONTAINMENT.
 9. THE SECONDARY CONTAINMENT SHALL CONSIST OF A 30 MIL. HIGH DENSITY POLYETHYLENE GEO MEMBRANE.
 10. THE VAULT SHALL BE OF A MONOLITHIC (SEAMLESS AND CONTINUOUS) CONCRETE POUR AND CONTAIN NO COLD JOINTS OR HEATH SINKS (HEAT TRANSFER POINTS) ON THE BOTTOM OR SIDES.
 11. VAULT SHALL HAVE COATED CONCRETE EXTERIOR TO RESIST WEATHER AND REFLECT SUNLIGHT.

7 CONVAULT FUEL TANK DETAIL (1000 GAL.)
NOT TO SCALE

5 RF WARNING SIGN
NOT TO SCALE

2 NOT USED



6 RF NOTICE SIGN
NOT TO SCALE

3 NOT USED

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

Coaching • Consulting • Capabilities • Connecting

INDIAN HILL #1

(EQUIPMENT SHELTER / TOWER MOD)

5225 TOWER DRIVE
TACOMA, WA 98422

PACIFIC CORPORATION

6506 4TH AVE. S. SUITE 202
SEATTLE, WA 98108
PHONE: (206) 480-3628
WWW.CCSIA.COM

CAMP+ ASSOCIATES

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PHONE: (425) 740-6352
FAX: (425) 752-0990
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

AD-05-14-10 ISSUED FOR PERMIT
AD-05-14-10 ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

PROFESSIONAL STAMP

12345

REGISTERED ARCHITECT

GEORGE J. TITALE

STATE OF WASHINGTON

010304

SHEET NAME

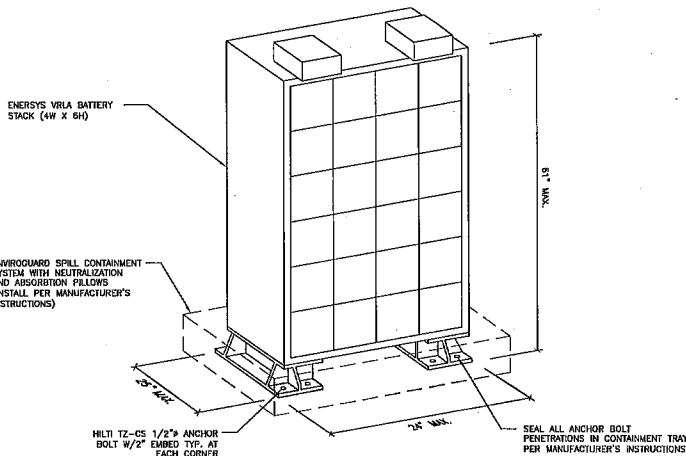
DETAILS

SHEET NUMBER

A-5.0

BATTERY SYSTEM DATA

BATTERY INFO:	ENERGY STORAGE DATA	NO. OF CELLS PER STACK	1
BATTERY TYPE:	VRLA VALVE REGULATED LEAD-ACID	ELECTROLYTE VOLUME PER CELL (GAL.)	2.50
NO. OF BATTERIES:	24 (6X 4 X 6)	ELECTROLYTE VOLUME TOTAL (GAL.)	75
MODEL NUMBER:	EDS-21	CHARGE RATE: 27.5A @ 25.0V @ 25.0V @ 25.0V	
NOMINAL AM. CAPACITY:	800	TOTAL WEIGHT (CELLS AND PACKS)	2,610 LBS.
NON-SPILLABLE, CLAMP/TERMINAL UNIFORM		CELL IS REVERSE CERTIFIED	
RECOMMEND BY: SA 1048			



BATTERY SYSTEM

1

NOT TO SCALE



3

CORROSIVE LIQUIDS SIGN

NOT TO SCALE

Thermal Runaway Procedure Posting Attachment A to Thermal Runaway Procedure

Handling Overcharging Batteries or Thermal Runaway

1A copy of this page shall be laminated or placed in a plastic sheet protector and posted in all battery areas.

If you encounter batteries too hot to touch, that make hissing or whistling noises from their vents on:

- There is a fire or smoke
- If the batteries are smoking
- If there is a strong rotten egg Hydrogen sulfide odor.

Important: Take no action that could produce a spark and ignite airborne hydrogen.

If you encounter batteries too hot to touch but there is no smoke and it is safe to remain in the facility:

- Call for help
- Increase ventilation in battery area
- Reduce charge current either by lowering off enough rectifiers so that the load barely is covered or by lowering the float voltage
- Increase cooling in the battery area if possible
- If there is a spill or other hazardous situation call the Environmental Hotline at 1-800-486-7800

Do not overreact to battery overcharges. Smoking batteries release potentially lethal concentrations of toxic gases or other chemicals and should be handled by trained First Responders (Fire Department) with appropriate protective clothing and Self-Contained Breathing Apparatus (SCBA).

THERMAL RUNAWAY PROCEDURE

NOT TO SCALE

STATIONARY STORAGE BATTERY SYSTEMS IN ACCORDANCE W/ BUT NOT LIMITED TO ALL REQUIREMENTS OF 2015 IFC (CH. 5 - BUILDING SERVICES AND SYSTEMS, ETC.) & 2015 IBC (CH. 5 - EXHAUST SYSTEMS, ETC.), THE FOLLOWING SHALL BE PROVIDED: 1. ANY ROOM CONTAINING STATIONARY STORAGE BATTERY SYSTEMS SHALL HAVE AN ELECTROLYTE CAPACITY OF 50 OR MORE GALLONS. 2. SPILL CONTROL: A. NEUTRALIZATION SYSTEM, SMOKE & FIRE DETECTION SYSTEM, AUTOMATICALLY ACTIVATED MECHANICAL EXHAUST VENTILATION SYSTEM. 3. LIMITING MAXIMUM CONCENTRATION OF HYDROGEN TO 1% OF TOTAL VOLUME OF ROOM (OR CONTINUOUS VENTILATION SYSTEM @ MINIMUM RATE OF 1 CUBIC FOOT PER MINUTE PER SQUARE FOOT (CFM/SQ FT) OF FLOOR AREA OF ROOM). 4. NOT LESS THAN 150 CFM. 5. AN AUTOMATICALLY ACTIVATED MECHANICAL EXHAUST VENTILATION SYSTEM SHALL INCLUDE THE FOLLOWING: HYDROGEN GAS DETECTION/SENSOR, ACTIVATED EXHAUST FAN, STORAGE OF HYDROGEN GENERATION & BOTH AIRBLES & VENTILATION SYSTEMS.

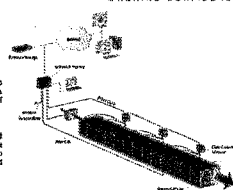
BATTERY REQUIREMENTS

	NON-RECOMBINANT	RECOMBINANT
REQUIREMENTS	FLOODED LEAD-ACID BATTERIES	VALVE-REGULATED LEAD-ACID (VRLA) BATTERIES
RELIEF VALVE	N/A	YES (REQUIRED)
COMMENTS: RELIEF VALVE OPERATES AT 2-3 PSI AND IS COMPLETE WITH INTEGRAL FLAME ARRESTOR.		
THERMAL RUNAWAY	N/A	YES (REQUIRED)
COMMENTS: BATTERY SYSTEM SHALL BE INSTALLED WITH BATTERY MONITORING SYSTEM (DETAIL 5/A-5.3) FOR THERMAL RUNAWAY PREVENTION AND PROTECTION. (MFR. BY CELLWATCH OR APPROVED EQUAL ACCEPTED BY THE PIERCE COUNTY FIRE MARSHAL.)		
SPILL CONTROL	N/A	YES (REQUIRED)
COMMENTS: PROVIDE ENVIROGUARD SPILL CONTAINMENT SYSTEM WITH NEUTRALIZATION AND ABSORPTION PILLOWS (INSTALL PER MANUFACTURER'S INSTRUCTIONS).		
NEUTRALIZATION	N/A	YES (REQUIRED)
COMMENTS: NEUTRALIZATION AND ABSORPTION PILLOWS SHALL BE PROVIDED WITH ENVIROGUARD SPILL CONTAINMENT SYSTEM (INSTALL PER MANUFACTURER'S INSTRUCTIONS).		
VENTILATION	N/A	YES (REQUIRED)
COMMENTS: REFER TO MECHANICAL PLAN SHEET M1.1 FOR VENTILATION REQUIREMENTS.		
SIGNAGE	N/A	YES (REQUIRED)
COMMENTS: CODE SPECIFIED BATTERY ROOM SAFETY SIGNAGE, HAZARDOUS MATERIALS, STORAGE (A DIAMOND) AND THERMAL RUNAWAY PROCEDURE SIGNAGE SHALL ALL BE CLEARLY POSTED IN ALL BATTERY AREAS.		
RECORD PROTECTION	N/A	YES (REQUIRED)
COMMENTS: REFER TO CG ENGINEERING STRUCTURAL CALCULATIONS EQUIPMENT ANCHORAGE FOR ANCHORAGE REQUIREMENTS.		
SMOKE DETECTION	N/A	YES (REQUIRED)
COMMENTS: AUTOMATIC SMOKE DETECTION AND FIRE SUPPRESSION SYSTEM (FM-200) TO BE INSTALLED.		
MODEL CODE REFERENCES ARE TO 2015 INTERNATIONAL FIRE CODE FOR STATIONARY STORAGE BATTERY SYSTEMS.		

BATTERY REQUIREMENTS

2

CELLWATCH POWERING CONFIDENCE



Cell Level Battery Monitoring
Cellwatch Frontier measures voltage and charge state for each cell or cell as well as temperature and SOC control to provide a complete picture of battery health.

Cell Level Alerts
Cellwatch Frontier alerts when any value is beyond its acceptable range, recorded in real time with a battery or cell. Alarm conditions are recorded on device LCD, via web pages and centralized network management systems.

Fireable and Scalable
With its modular architecture, Cellwatch Frontier is designed for easy installation ensuring maximum any configuration of 2 to 10 volt cells configured for either 12V or 24V. Scalable and expandable. Cellwatch Frontier can be configured to expand to reflect the variation from 2 to 10 volt cells and expandable to reflect the variation from 2 to 10 volt cells.

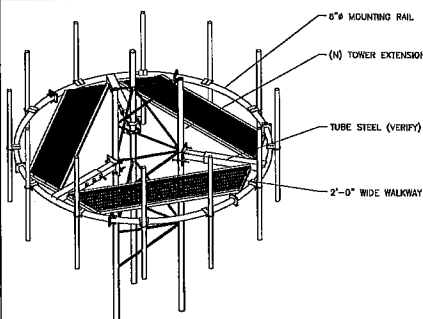
Protable and Economical
The Cellwatch Frontier components were designed to have an extremely long life and the major components of this solution have a mean time between failure (MTBF) of about 30 years. This Cellwatch Frontier system is highly reliable and provides an extremely high return on investment.

Cellwatch Frontier systems are composed of two major components: the Frontier device and a Data Gateway Module (DGM). DGMs are connected to each cell and measure voltage and internal cell temperature. DGMs are connected to the Frontier device via a RS-485 cable for electrical isolation and safety. The Frontier device aggregates the data from the DGMs, along with other 'smart' and 'non-smart' information to provide a complete picture of the health of the battery bank at a site. Cellwatch Frontier integrates with site or network management systems, either to provide a central view of the battery health across all the data centers.

Cellwatch's unique testing control has no impact on the cells' capacity and performance on the cells' useful life.

BATTERY MONITORING SYSTEM

5



CIRCULAR ANTENNA PLATFORM BY PIROS

NOT TO SCALE

6



King County

PSERN

PUGET SOUND EMERGENCY
RADIO NETWORK

King County • Snohomish • Skagitway • Whatcom

INDIAN HILL #1

(EQUIPMENT
SHELTER / TOWER
MOD)

5225 TOWER DRIVE
TACOMA, WA 98422



5506 8TH AVE. S. SUITE 902
SEATTLE, WA 98108
PHONE: (206) 466-3885
WWW.PACIFIC.COM



16101 40TH AVE. W. SUITE 204
LYNNWOOD, WA 98036
PHONE: (206) 745-6332
FAX: (206) 752-2883
WWW.CAMP+ASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

AND 14-14-14 ISSUED FOR PERMIT
AND 14-14-14 ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

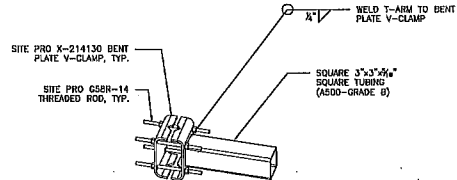
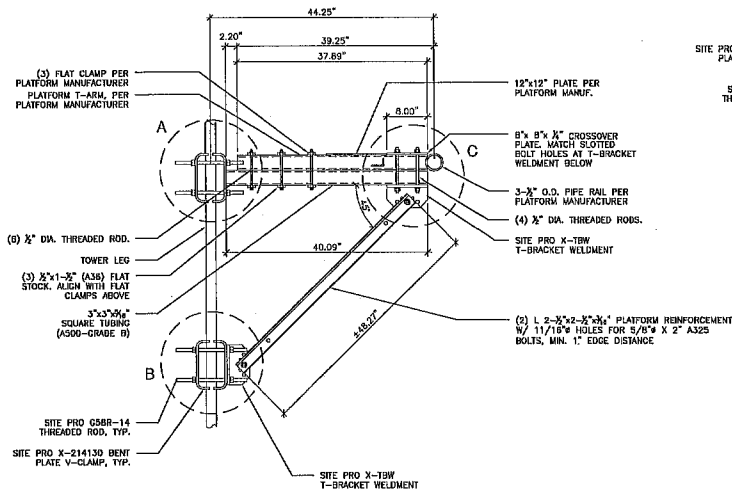
PROFESSIONAL STAMP
12346
REGISTERED ARCHITECT
GEORGE J. VITALE
STATE OF WASHINGTON

SHEET NAME

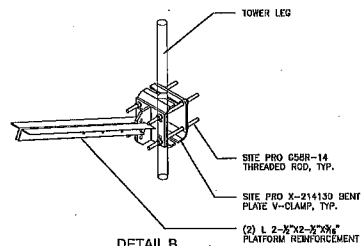
DETAILS

SHEET NUMBER

A-5.1

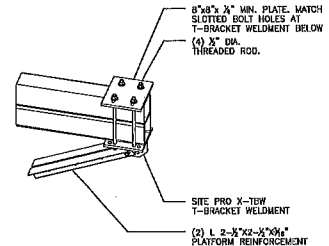


DETAIL A



DETAIL B

IMPORTANT NOTES:
REFER TO SITE PRO PRK-FMA - TOWER REINFORCEMENT KIT FOR MORE INFORMATION.
REFER TO NORTHWEST TOWER ENGINEERING STRUCTURAL ANALYSIS PROJECT NO. 180731.20 DATED 7/23/18 FOR MORE INFORMATION



DETAIL C

CIRCULAR ANTENNA PLATFORM REINFORCEMENT DETAIL

NOT TO SCALE

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK
Coverage • Capacity • Capability • Connectivity

INDIAN HILL #1
EQUIPMENT SHELTER / TOWER MOD
5225 TOWER DRIVE
TACOMA, WA 98422

SEACOR RADIO CORPORATION
5505 6TH AVE, S, SUITE 202
SEATTLE, WA 98108
PHONE: (206) 460-9000
WWW.ADELTA.COM

CAMP+ ASSOCIATES
19401 48TH AVE. W, SUITE 304
LYNNWOOD, WA 98026
PHONE: (206) 740-0300
FAX: (206) 252-0300
WWW.CAMPASSOC.COM

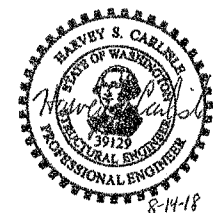
PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

PLAN REVIEWERS SIGNATURE

PROFESSIONAL STAMP

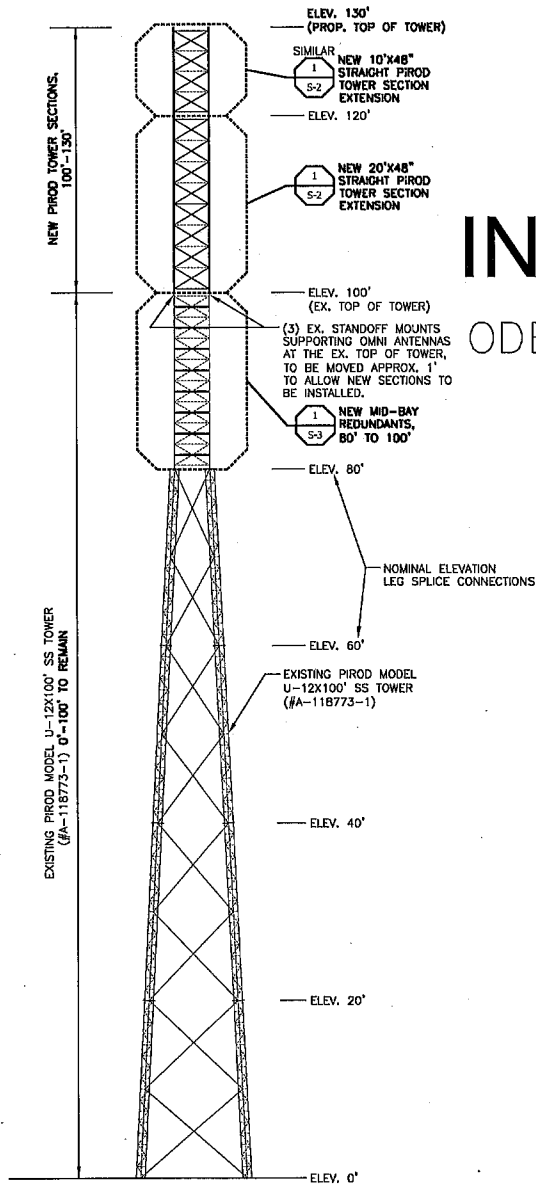


SHEET NAME
CIRCULAR ANTENNA PLATFORM REINFORCEMENT DETAIL

SHEET NUMBER
A-5.2

100-FT SS TOWER EXTEND TO 130-FT, INDIAN HILL, TACOMA, WA

ODELIA PACIFIC / PSERN / CITY OF TACOMA

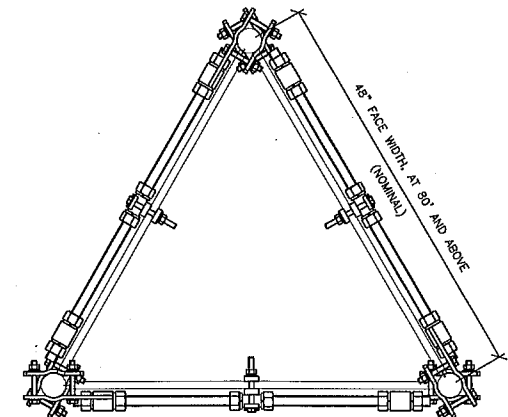


TOWER ELEVATION
SCALE: NOT TO SCALE

1
S-1

SHEET INDEX	
S-1	COVER SHEET, PLAN & ELEVATION
S-2	NEW PIROD TOWER SECTIONS
S-3	MID-BAY REDUNDANT BRACE ASSEMBLY
S-4	PARTS CHARTS
S-5	SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS
E-1	TOWER MEMBERS AND EQUIPMENT (TNXTOWER MTO)
A-1	FEED LINE CROSS SECTION (8.5" x 11")
G-1	GENERAL NOTES

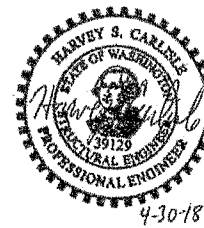
- REFER TO STRUCTURAL ANALYSIS REPORT No. 180731.17
- REFER TO PIROD DWG. NO. #A-118773-1, MODEL U-12X100' SS TOWER




- NOTE:
- EXISTING INTERNAL BRACING, APPURTENANCES, SHELTER, COMPOUND FENCE & UTILITIES NOT SHOWN, FIELD VERIFY.
 - REFER TO A-1 FOR FEED LINE ROUTING

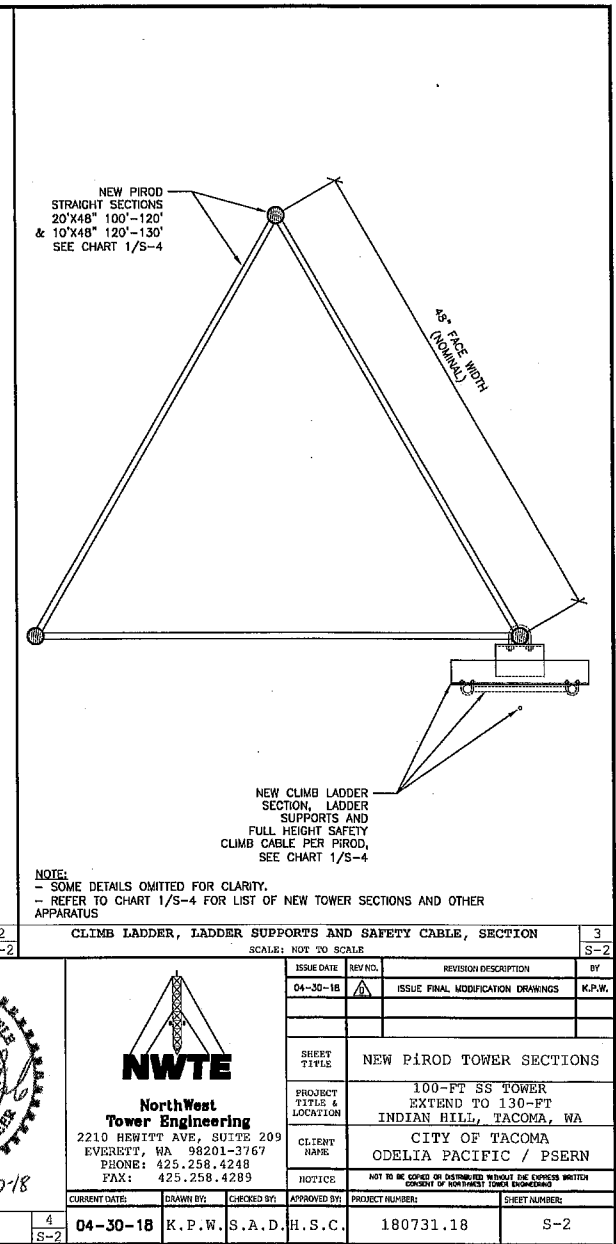
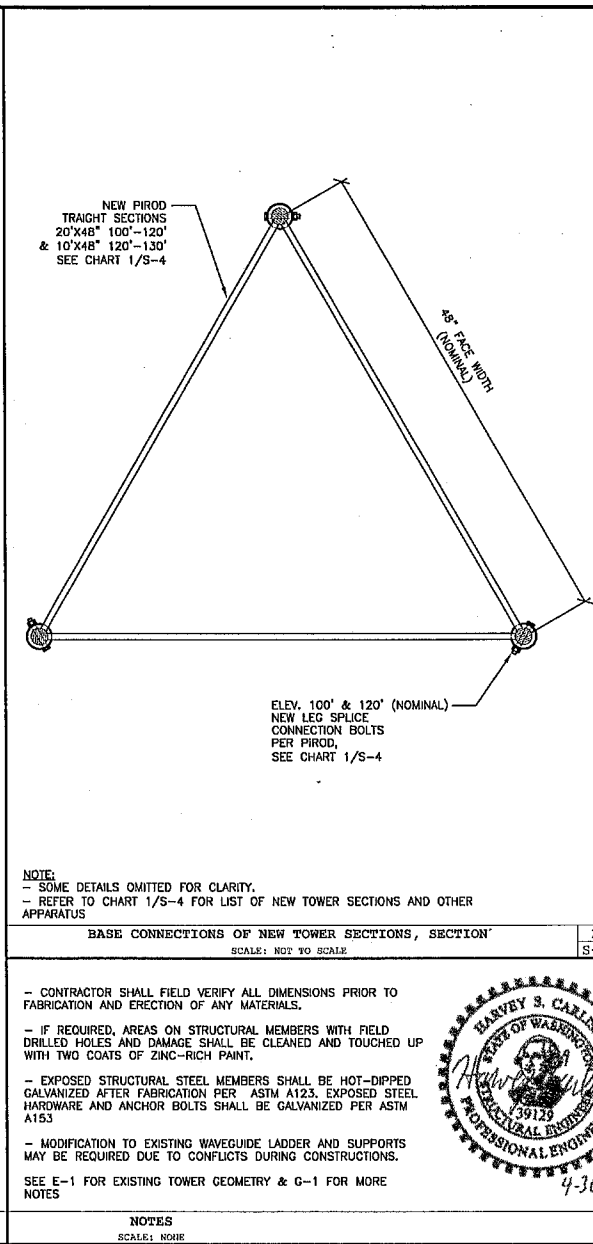
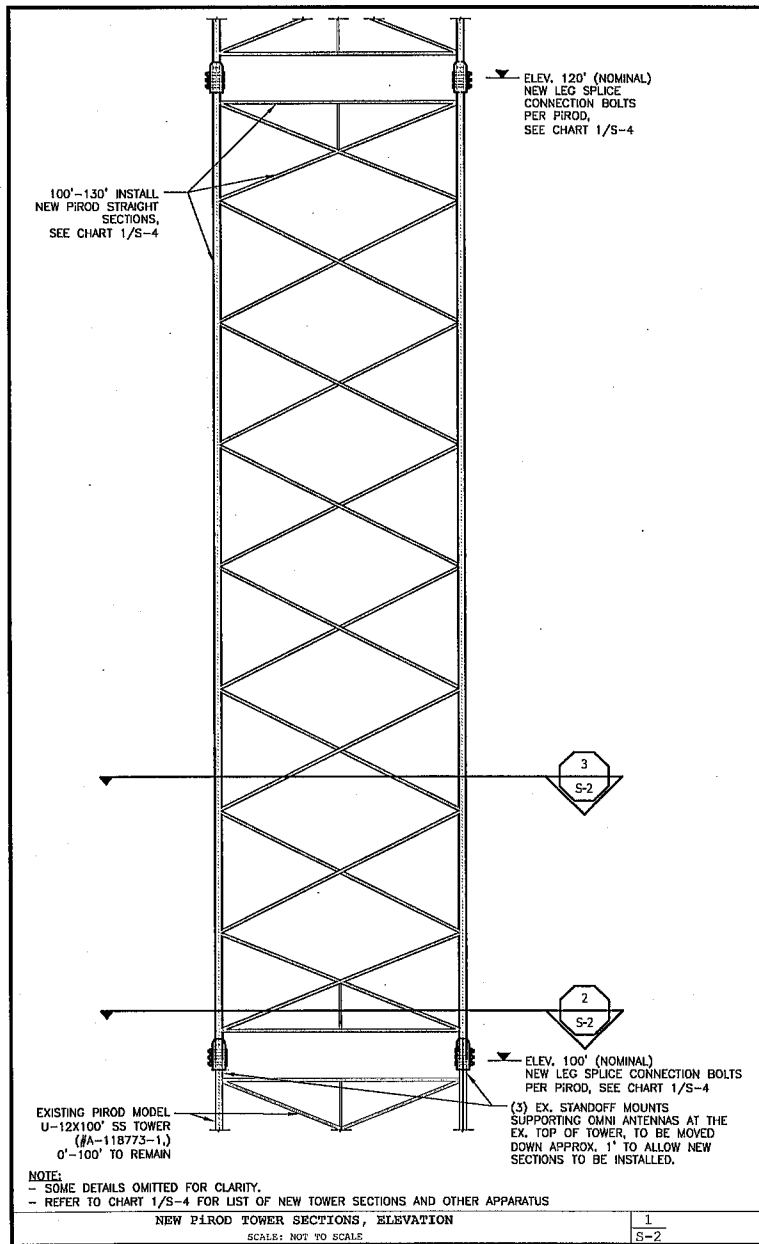
TOWER PLAN, EX. SECTION 80'-100'
SCALE: NOT TO SCALE

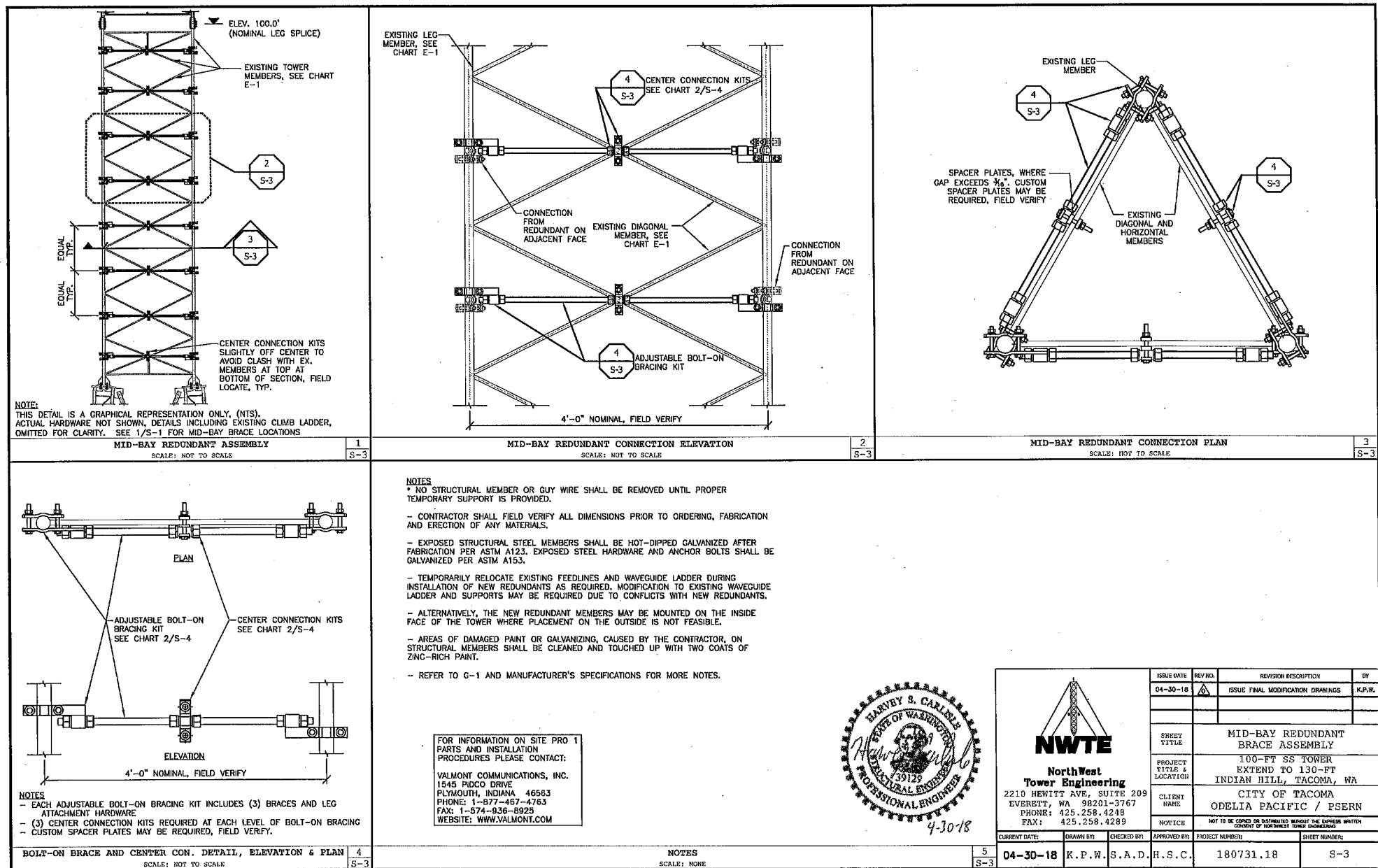
2
S-1



4-30-18

 NorthWest Tower Engineering 2210 HERMITT AVE, SUITE 209 EVERETT, WA 98201-3767 PHONE: 425.258.4248 FAX: 425.258.4289	ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY	
	04-30-18	A	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.	
	SHEET TITLE	COVER SHEET, PLAN & ELEVATION			
	PROJECT TITLE & LOCATION	100-FT SS TOWER EXTEND TO 130-FT INDIAN HILL, TACOMA, WA			
NOTICE	CLIENT NAME	CITY OF TACOMA ODELIA PACIFIC / PSERN			
	NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING				
CURRENT DATE	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER	SHEET NUMBER
04-30-18	K.P.W.	S.A.D.	H.S.C.	180731.18	S-1





PIROD-VALMONT TOWER EXTENSION PARTS KEY

APPROX. ELEV.	EXISTING PIROD SECTION PART NUMBERS SECTION DESIGNATION	PROPOSED PIROD-VALMONT SECTION PART NUMBERS SECTION DESIGNATION	NEW LEG CONNECTION BOLT QUANTITY, SIZE & GRADE	OUTSIDE CLIMB LADDER AND BRACKETS (PER PIROD)	OTHER MISCELLANEOUS APPARATUS
120'-130'	N/A	106778/SS231820 10'X48" STRAIGHT SECTION 1 1/2"Ø SR LEGS, 3/4"Ø SR DIAG., 7/8"Ø SR HORIZ.	PER PIROD-VALMONT	P/N 117334 15-FT CLIMB LADDER P/N 108070 OUTSIDE CLIMB BRACKETS ASSOCIATED HARDWARE	RELOCATE EXISTING LIGHTNING ROD & EXTENSION PIPE TO NEW TOP OF TOWER
100'-120'	N/A	106778/SS231820 20'X48" STRAIGHT SECTION 1 1/2"Ø SR LEGS, 3/4"Ø SR DIAG., 7/8"Ø SR HORIZ.	PER PIROD-VALMONT	P/N 106250 20-FT CLIMB LADDER P/N 108070 OUTSIDE CLIMB BRACKETS ASSOCIATED HARDWARE	NEW WAVEGUIDE LADDER/BRACKETS AS NEEDED NEW FULL HEIGHT SAFETY CABLE

NOTES

- THE EXISTING CLIMB LADDER AND SAFETY CLIMB CABLE TERMINATE APPROXIMATELY 4-FT BELOW THE TOP OF THE EXISTING TOWER.
- APPROXIMATELY 35-FT OF NEW CLIMB LADDER IS REQUIRED, WITH A NEW FULL HEIGHT SAFETY CLIMB CABLE

NEW PIROD TOWER SECTION PARTS

SCALE: NOT TO SCALE

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MID-BAY REDUNDANT BRACE PARTS KEY

APPROX. ELEV.	SR LEG O.D.	SITEPRO1 BOLT-ON BRACING PARTS		
		ADJUSTABLE BOLT-ON BRACING FOR ROUND LEG TOWER QUANTITY, PART NUMBER, DESCRIPTION	CENTER CONNECTION KITS QUANTITY, PART NUMBER, DESCRIPTION	SPACERS QUANTITY, THICKNESS (REFER TO DETAIL 3/S-3)
80.0' - 100.0'	1 1/2" Ø	(8) BOB1, 1" ADJ. BOLT-ON BRACING KITS	(24) BOB1-CEN, 1" CENTER CONNECTION KITS	FIELD VERIFY

NOTES

- EACH ADJUSTABLE BOLT-ON BRACING KIT INCLUDES (3) BRACES AND LEG ATTACHMENT HARDWARE
- (3) CENTER CONNECTION KITS REQUIRED AT EACH LEVEL OF BOLT-ON BRACING
- CUSTOM SPACER PLATES MAY BE REQUIRED, FIELD VERIFY.

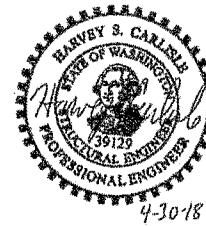
NEW BOLT-ON BRACING PARTS CHART KEY

SCALE: NOT TO SCALE

2
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FOR INFORMATION ON
PIROD/VALMONT/MICROFLECT
PARTS AND INSTALLATION
PROCEDURES PLEASE CONTACT:

VALMONT COMMUNICATIONS, INC.
1545 PIDCO DRIVE
PLYMOUTH, INDIANA 46563
PHONE: 1-877-467-4763
FAX: 1-574-935-8925
WEBSITE: WWW.VALMONT.COM



4-30-18



**NorthWest
Tower Engineering**
2210 HENWITT AVE, SUITE 209
EVERETTE, WA 98201-3767
PHONE: 425.258.4248
FAX: 425.258.4289

ISSUE DATE	REV NO.	REVISION DESCRIPTION	BY
04-30-18	A	ISSUE FINAL MODIFICATION DRAWINGS	K.P.W.
SHEET TITLE	NEW MEMBERS PARTS KEY CHARTS		
PROJECT TITLE & LOCATION	100-FT SS TOWER EXTEND TO 130-FT INDIAN HILL, TACOMA, WA		
CLIENT NAME	CITY OF TACOMA ODELIA PACIFIC / PSERN		
NOTICE	NOT TO BE COPIED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING		
CURRENT DATE	DRAWN BY	CHECKED BY	APPROVED BY
04-30-18	K.P.W.	S.A.D.	H.S.C.
PROJECT NUMBER		SHEET NUMBER	
180731.18		S-4	

PIROD/VALMONT/MICROFLECT CONTACT INFORMATION

SCALE: NONE

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TABLE N5.4-1 Inspection Tasks Prior to Welding		
Inspection Tasks Prior to Welding	QC	QA
Welding procedure specifications (WPS) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (by certificate)	O	O
Welder identification on system	O	O
Fits up of groove joints (including joint geometry)	O	O
Joint preparation	O	O
Dimensions (alignment, root opening, root face, bevel)	O	O
Cleanliness (contaminants on steel surfaces)	O	O
Tackling (lack weld quality and location)	O	O
Backing type and fit (if applicable)	O	O
Configuration and fit of access holes	O	O
Fits up of fillet welds	O	O
Dimensions (alignment, gaps at root)	O	O
Cleanliness (contaminants on steel surfaces)	O	O
Tackling (lack weld quality and location)	O	O
Check welding equipment	O	O
The fabricator or erector shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be in the low stress zone.	O	O

AISC TABLE N5.4-1
INSPECTION TASKS PRIOR TO WELDING

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TABLE N5.4-2 Inspection Tasks During Welding		
Inspection Tasks During Welding	QC	QA
Use of qualified welders	O	O
Control and handling of welding consumables	O	O
Packaging	O	O
Exposure control	O	O
No welding over cracked lack welds	O	O
Environmental factors	O	O
Weld speed within limits	O	O
Precipitation and temperature	O	O
WPS followed	O	O
Settings on welding equipment	O	O
Travel speed	O	O
Backsided welding materials	O	O
Shielding gas type and rate	O	O
Preheat applied	O	O
Interpass temperature maintained (in 1/4 max.)	O	O
Proper position (F, V, O, etc.)	O	O
Welding techniques	O	O
Interpass and final cleaning	O	O
Each pass within profile limitations	O	O
Each pass meets quality requirements	O	O

AISC TABLE N5.4-2
INSPECTION TASKS DURING WELDING

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TABLE N5.4-3 Inspection Tasks After Welding		
Inspection Tasks After Welding	QC	QA
Welds cleared	O	O
Size, length and location of welds	P	P
Welds meet visual acceptance criteria	P	P
Crack proof check	P	P
Weld base-metal fusion	P	P
Cross section	P	P
Weld profiles	P	P
Weld size	P	P
Intermittent	P	P
Porosity	P	P
Arc strikes	P	P
Excess	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P
When welding of another party, continuity plates or stiffeners has been determined	P	P

AISC TABLE N5.4-3
INSPECTION TASKS AFTER WELDING

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TABLE N5.6-1 Inspection Tasks Prior to Bolting		
Inspection Tasks Prior to Bolting	QC	QA
Manufacturer's certification available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear planes)	O	O
Proper bolting procedure selected for joint detail	O	O
Connecting elements including the appropriate lapping surface condition and hole preparation if specified meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers and other fastener components	O	O

AISC TABLE N5.6-1
INSPECTION TASKS PRIOR TO BOLTING

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TABLE N5.6-2 Inspection Tasks During Bolting		
Inspection Tasks During Bolting	QC	QA
Fastener assemblies of suitable condition, placed in all holes and washers (if required) are positioned as required	O	O
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O
Fastener component not limited by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O

AISC TABLE N5.6-2
INSPECTION TASKS DURING BOLTING

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TABLE N5.6-3 Inspection Tasks After Bolting		
Inspection Tasks After Bolting	QC	QA
Document acceptance or rejection of bolted connections	P	P

AISC TABLE N5.6-3
INSPECTION TASKS AFTER BOLTING

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DEFINITIONS:
QC - QUALITY CONTROL PROVIDED BY THE FABRICATOR AND ERECTOR
QA - QUALITY ASSURANCE PROVIDED BY OTHERS QUALIFIED TO PERFORM SPECIAL INSPECTIONS
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED
P - PENDING THESE INSPECTIONS
P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER OR FOR EACH BOLTED CONNECTION.

NOTES:
PER AISC N5.6 (1), FOR SNUG-TIGHT JOINTS, PRE-INSTALLATION VERIFICATION TESTING AS SPECIFIED IN TABLE N5.6-1 AND MONITORING OF THE INSTALLATION PROCEDURES AS SPECIFIED IN TABLE N5.6-2 ARE NOT APPLICABLE. THE QC AND QA INSPECTORS NEED NOT BE PRESENT DURING THE INSTALLATION OF FASTENERS IN SNUG-TIGHT JOINTS. SNUG-TIGHT JOINTS ARE ALLOWED IF LOCKING DEVICES ARE INSTALLED. OTHERWISE BOLTS SHALL BE TIGHTENED USING THE TURN-OF-THE-NUT METHOD AS DESCRIBED IN SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS.

PER AISC N7, QUALITY ASSURANCE (QA) INSPECTIONS, EXCEPT NONDESTRUCTIVE TESTING (NDT), MAY BE WAIVED WHEN THE WORK IS PERFORMED IN A FABRICATING SHOP OR BY AN ERECTOR APPROVED BY THE AUTHORITY HAVING JURISDICTION (AJH) TO PERFORM THE WORK WITHOUT QA.

STRUCTURAL OBSERVATION BY NWTE SHALL BE CARRIED OUT AT THE TIME THE STRUCTURAL WORK IS COMPLETED. CONTRACTOR SHALL COORDINATE WITH NWTE IN ORDER TO SCHEDULE A SITE VISIT WITH CONTRACTOR PRESENT. NWTE WILL CLIMB THE TOWER AND VISUALLY OBSERVE THE STRUCTURAL MODIFICATION WORK AND VERIFY THAT THE WORK HAS BEEN DONE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. VISUAL OBSERVATIONS WILL BE MADE OF THE NEW STRUCTURAL MEMBERS AND CONNECTIONS. NWTE WILL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT SUMMARIZING THE OBSERVATIONS MADE, INCLUDING ANY DEFICIENCIES WHICH, TO THE BEST OF NWTE'S KNOWLEDGE, HAVE BEEN RESOLVED.

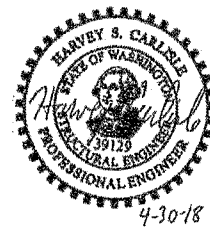
OTHER INSPECTION NOTES:
REFER TO G-1 FOR INSPECTION AND OBSERVATIONS REQUIRED FOR OTHER THAN BOLTING AND WELDING

DEFINITIONS/NOTES - SPECIAL INSPECTIONS & STRUCTURAL OBSERVATIONS

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S-5

NOT USED
SCALE: NONE

4-30-18



		ISSUE DATE 04-30-18	REV. NO. A	REVISION DESCRIPTION ISSUE FINAL MODIFICATION DRAWINGS	BY K.P.W.
SHEET TITLE SPECIAL INSPECTIONS AND STRUCTURAL OBSERVATIONS					
PROJECT TITLE & LOCATION 100-FT SS TOWER EXTEND TO 130-FT INDIAN HILL, TACOMA, WA					
CLIENT NAME CITY OF TACOMA ODELIA PACIFIC / ESERN					
NOTICE NOT TO BE COMED OR DISTURBED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING					
CURRENT DATE 04-30-18	DRAWN BY K.P.W.	CHECKED BY S.A.D.	APPROVED BY H.S.C.	PROJECT NUMBER 180731.18	SHEET NUMBER S-5

Section	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	122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NorthWest Tower Engineering
2210 Hewitt Ave. Suite 209
Everett, WA 98201-3767
Phone: 425-258-4248
Fax: 425-258-4289

Job Name:	100-ft SS Tower (Extend to 130') - Indian Hill, Tacoma, WA	Page:	A-1
Project Number:	180731.17	Date:	4/19/2018
Client Name:	Odella Pacific / PSERN / City of Tacoma	By:	KW/SD/HC

EXISTING FEEDLINES

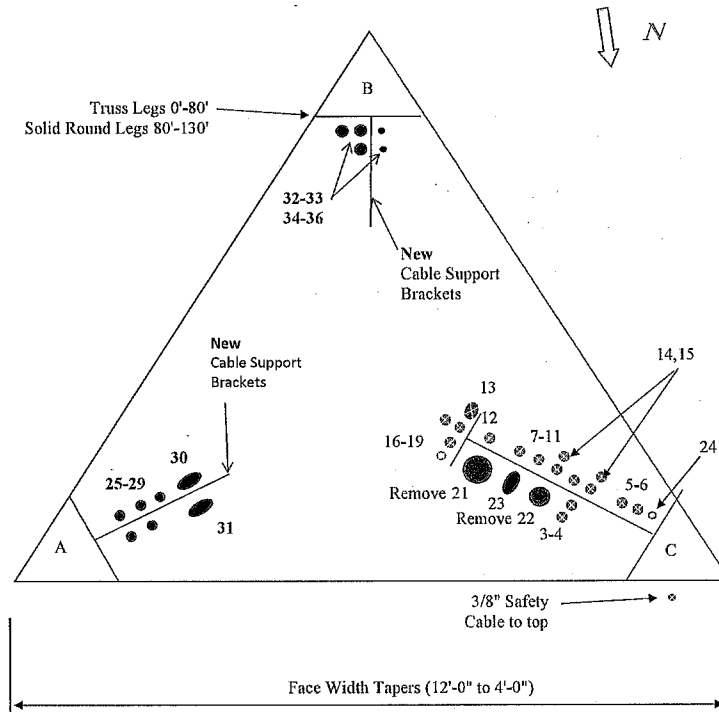
Coax Number	Coax Description	Termination Elevation	Coax Key
3	7/8" Coax	60'	⊗
4	7/8" Coax	83'	⊗
5,7,9	(3) 7/8" Coax	Extend to 130'	⊗
6,8,10,11	(4) 7/8" Coax	83'	⊗
12	7/8" Coax	49'	⊗
13	EW90	45'	⊗
N/A	3/8" Safety Cable	100'	⊗
14	7/8" Coax	84'	⊗
15	7/8" Coax	84'	⊗
16	7/8" Coax	84'	⊗
17	7/8" Coax	61'	⊗
18	7/8" Coax	84'	⊗
19	1/2" Coax	84'	⊗
21	2" PVC Conduit	75'	⊗
22	3" PVC Conduit	75'	⊗
23	EW90	43'	⊗
24	LMR-600	55'	⊗

PSERN FEEDLINES

25	7/8" Coax	100'	⊗
26, 27	(2) 7/8" Coax	110'	⊗
28,29	(2) 7/8" Coax	130'	⊗
30	EW90	42'	⊗
31	EW90	125'	⊗

SPRINT FEEDLINES

22	Remove 3" PVC Conduit	75'	⊗
21	Remove 2" PVC Conduit	75'	⊗
32-33	New (2) 1/2" MW Cables	50'/60'	⊗
34-36	New (3) Hybrid Cables	75'	⊗



GENERAL

1. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
2. ALL DIMENSIONS AND DETAILS SHOWN ARE BASED ON THE INFORMATION GATHERED ON SITE BY NWTE MOST RECENTLY ON 04-16-18, FOR THE PURPOSE OF PERFORMING A STRUCTURAL ANALYSIS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO PURCHASING OR FABRICATION AND ERECTION OF ANY MATERIALS.
3. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO STARTING WORK, THE CONTRACTOR SHOULD SURVEY THE JOB SITE TO CONFIRM SITE CONDITIONS.
4. ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
5. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS. (REFER TO TIA-322-2016: LOADING, ANALYSIS, AND DESIGN CRITERIA RELATED TO THE INSTALLATION, ALTERATION AND MAINTENANCE OF COMMUNICATION STRUCTURES; ASSE A10.4B-2016: CRITERIA FOR SAFETY PRACTICES WITH THE CONSTRUCTION, DEMOLITION, MODIFICATION AND MAINTENANCE OF COMMUNICATION STRUCTURES).
7. CONTACT THE ENGINEER OF RECORD IF MODIFICATIONS ARE REQUIRED TO THE DESIGN DUE TO EXISTING CONDITIONS.
8. AFTER COMPLETION OF THE WORK, THE SITE SHALL BE CLEARED OF ALL DEBRIS AND REMOVED. ANY SURPLUS MATERIALS NOT TO BE REMOVED FROM SITE SHALL BE STORED ON SITE AS DESIGNATED BY THE OWNER.

CODES AND STANDARDS

1. TIA-222-G: STRUCTURAL STANDARD FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES
2. IBC: INTERNATIONAL BUILDING CODE, 2015
3. ASTM: STANDARDS FOR BUILDING CODES, LATEST EDITION.
4. ACI 315: AMERICAN CONCRETE INSTITUTE, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, LATEST EDITION.
5. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, LATEST EDITION.
6. CRSI: CONCRETE STEEL REINFORCING INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
7. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
8. AWS: AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE, LATEST EDITION.

DESIGN CRITERIA

1. BASIC WIND SPEED AND COEFFICIENTS PER TIA-222-G:
110 MPH (3-SEC GUST, V_{base}) NO ICE, 30 MPH (3-SEC GUST) WITH 1/4" ICE.
(PER THE CITY OF TACOMA)
EXPOSURE CATEGORY B,
TOPOGRAPHIC CATEGORY 1
STRUCTURE CLASS III (ESSENTIAL FACILITY)
(EQUIVALENT TO RISK CATEGORY IV)
2. SEISMIC LOADING IS DETERMINED PER IBC 2015, ASCE7-10 & TIA-222-G. SEISMIC LOADS DO NOT GOVERN FOR THIS STRUCTURE.
3. FOR PROPOSED ANTENNA AND FEED LINE CONFIGURATION REFER TO TOWER ELEVATION DRAWING E-1 AND CROSS SECTION ON A-1.
4. EACH LEG OF THE TOWER RESTS ON A 5' DIAMETER CONCRETE PIER. THE FOUNDATION DRAWING SHOWS THE PIER TO BE 4' DIAMETER BY 33" DEEP. IN ACCORDANCE WITH TIA-222-G SECTION 15.5.1, THE ORIGINAL FOUNDATION DESIGN REACTIONS GIVEN ON THE FOUNDATION DRAWING WERE MULTIPLIED BY A FACTOR OF 1.35 TO ALLOW A COMPARISON TO BE MADE WITH THE CALCULATED FACTORED FOUNDATION REACTIONS FROM THIS ANALYSIS. CALCULATED FOUNDATION REACTIONS FROM THIS ANALYSIS WERE FOUND TO BE SIGNIFICANTLY LESS THAN THE FACTORED ORIGINAL DESIGN REACTIONS. BASED ON THIS COMPARISON, THE FOUNDATION IS CONSIDERED TO BE ADEQUATE.
5. ANTENNA, FEEDLINES AND SUPPORT STRUCTURES: WEIGHTS AND EXPOSED AREAS PROVIDED BY CLIENT AND BY MANUFACTURER.

FOUNDATIONS

1. CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES IN THE AREA WHERE EXCAVATION WORK IS TO BE PERFORMED.
2. ALL FOUNDATIONS SHALL BEAR ON FIRM UNDISTURBED SOIL.
3. ALL FOOTING EXCAVATIONS SHALL BE MANUALLY CLEANED PRIOR TO PLACING CONCRETE. COMPACT THE EXPOSED SOIL SURFACE AND ANY GRANULAR FILL UNDER THE FOUNDATION TO 90% OF THE MODIFIED PROCTOR DENSITY.
4. FOOTINGS MAY BE POURED IN NEAT EXCAVATIONS PROVIDED THE SIZE IS INCREASED 3 INCHES AT EACH INTERFACE WITH THE SOIL.
5. CONTRACTOR SHALL PROVIDE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.
6. BACKFILL NEAR AND AROUND THE FOUNDATIONS SHALL BE A WELL GRADED FILL MATERIAL PLACED IN 12" THICK LAYERS THAT HAS BEEN COMPACTED TO 90% OF THE MODIFIED PROCTOR DENSITY.

CONCRETE

1. ALL CONCRETE FOR FOUNDATIONS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AFTER 28 DAYS.
2. THE CONCRETE MIX SHALL NOT CONTAIN LESS THAN 5½" SACKS OF CEMENT (ASTM C 150 TYPE II) PER CUBIC YARD.
3. THE CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF ¾".
4. THE CONCRETE MIX SHALL PRODUCE A MAXIMUM SLUMP OF 5" ±1".
5. THE CONCRETE MIX SHALL HAVE A TOTAL AIR CONTENT OF 5%, WITH A TOLERANCE OF PLUS OR MINUS 1.5%. AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C 260.
6. THE CONCRETE MIX SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.45. WATER REDUCING OR ACCELERATING ADMIXTURES SHALL CONFORM TO ASTM C 494.
7. THE CONCRETE SHALL NOT CONTAIN CALCIUM CHLORIDE OR ANY OTHER ADMIXTURE CONTAINING CHLORIDE OTHER THAN NATURAL IMPURITIES.
8. FORMWORK SHALL CONFORM TO ACI 318 SPECIFICATIONS (LATEST EDITION).
9. ALL CONCRETE SHALL BE PLACED IN A MONOLITHIC POUR UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
10. PROVIDE CHAMFERS AT ALL EXPOSED CORNERS OF CONCRETE.
11. CONCRETE WORK UNDER EXTREME WEATHER CONDITIONS SHALL CONFORM TO ACI 318 SPECIFICATIONS (LATEST EDITION).

STRUCTURAL STEEL

1. DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATION, 14TH EDITION.
2. W SHAPES SHALL BE A992 50 KSI, ANGLES, CHANNELS, AND PLATES TO BE ASTM A36, $F_y=36$ KSI.
3. SOLID RODS TO BE ASTM A572, $F_y=50$ KSI.
4. RECTANGULAR & SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A500-B, $F_y=46$ KSI. ROUND HOLLOW STRUCTURAL SECTIONS (HSS) TO BE ASTM A500-B, $F_y=42$ KSI.
5. PIPE TO BE ASTM A53-B, $F_y=35$ KSI.
6. NEW STRUCTURAL STEEL CONNECTION BOLTS TO BE ASTM A325 TYPE 3. CONNECTION BOLTS SHALL BE TIGHTENED SNUG-TIGHT IF LOCKING DEVICES ARE INSTALLED. OTHERWISE BOLTS SHALL BE TIGHTENED USING TURN-OF-NUT METHOD AS DESCRIBED IN SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS. NO BOLT SHALL BE REUSED.
7. U-BOLTS SHALL BE GALVANIZED STEEL GRADE A193-B7. U-BOLTS SHALL BE INSTALLED SNUG TIGHT. TAKE CARE NOT TO DAMAGE PIPE MEMBERS.
8. BLIND BOLTS SHALL BE BOXBOLT TYPE C, MANUFACTURED BY LNA SOLUTIONS.
9. EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. STEEL HARDWARE SHALL BE GALVANIZED PER ASTM A153.
10. THREADBAR SHALL BE ASTM A615 GRADE 75, MANUFACTURED BY DYWIDAG
11. NEW WILLIAMS FORM ALL-THREAD REBAR SHALL BE ASTM A615 GR 75. WILLIAMS FORMS PARTS AND ASSOCIATED HARDWARE TO BE HOT-DIPPED GALVANIZED. NEW ANCHORS TO BE SET WITH ULTRABOND 1 EPOXY CONCRETE ANCHOR SYSTEM, FOLLOW WILLIAMS FORM INSTALLATION INSTRUCTIONS.

PAINT

1. AREAS OF DAMAGED PAINT OR GALVANIZING, CAUSED BY THE CONTRACTOR, ON STRUCTURAL MEMBERS SHALL BE CLEANED AND TOUCHED UP WITH TWO COATS OF ZINC-RICH PAINT.
2. IF APPLICABLE, NEW STEEL SHALL BE PAINTED TO MATCH EXISTING TOWER PAINT.

STEEL REINFORCEMENT

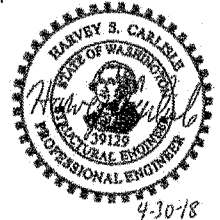
1. ALL REINFORCING STEEL FOR CONCRETE TO BE GRADE 60 DEFORMED BILLET STEEL PER ASTM A615.
2. ANCHOR RODS TO BE ASTM F155, GRADE 55 WITH A PLATE, WASHER, AND NUT UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. REINFORCEMENT SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH THE ACI 315 AND CRSI SUPPORT REINFORCING AS REQUIRED BY CRSI TO PREVENT DISPLACEMENT UPON CONCRETE POURING.
4. MAINTAIN ALL CLEARANCES NOTED ON THE DRAWINGS. WHERE NO DIMENSIONS ARE NOTED, USE THE ACI RECOMMENDED CLEARANCES.
5. MINIMUM COVER FOR REINFORCING BARS SHALL BE 3", FOR CONCRETE POURED AGAINST SOIL.
6. TIE BARS SECURELY WITH #16 ANNEALED WIRE AND SUPPORT AS REQUIRED.
7. ALL WELDED WIRE FABRIC TO BE PER ASTM A185. ALL BARS AND WIRE SHALL BE FREE OF RUST, MILL SCALE, DIRT, OR OTHER FOREIGN MATERIAL PRIOR TO CASTING CONCRETE.
8. PROVIDE MINIMUM LAP SPLICES OF 36 BAR DIAMETERS UNLESS NOTED OTHERWISE.
9. FIELD BENDING OR WELDING OF REINFORCEMENT BARS IS NOT PERMITTED.


WELDING

1. WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE.
2. ELECTRODES TO BE E70XX LOW HYDROGEN.
3. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS.
4. MAXIMUM WELD SIZE NOT TO EXCEED MINIMUM STEEL PLATE THICKNESS.

SPECIAL INSPECTION & OBSERVATIONS

1. SPECIAL INSPECTIONS AS REQUIRED BY IBC CHAPTER 17 SHALL BE CARRIED OUT BY A QUALIFIED TEST AGENCY. STRUCTURAL OBSERVATIONS AS REQUIRED BY IBC 1704.6, BY REGISTERED DESIGN PROFESSIONAL.
2. THE FOLLOWING WORK SHALL BE INSPECTED ON A PERIODIC BASIS AND THE MATERIALS TESTED:
STRUCTURAL CAST-IN-PLACE CONCRETE AND STEEL REINFORCING.
STRUCTURAL HIGH STRENGTH BOLTED CONNECTIONS, PER ANSI/AISC 360-10 TABLES N5.6-1, -2, -3. BLIND FASTENER CONNECTIONS.
FIELD AND FULL PENETRATION STRUCTURAL WELDING, PER ANSI/AISC 360-10 TABLES N5.4-1, -2, -3. BACKFILLING ABOVE GUY ANCHOR BLOCKS.
PLACEMENT OF THREADBAR INTO EXISTING FOUNDATION
POST INSTALLED ADHESIVE ANCHORS
PRESSURE GROUTING PIPE LEG MEMBERS
3. REPORTS SHALL SUBMITTED IN ACCORDANCE WITH IBC CHAPTER 17.
4. STRUCTURAL OBSERVATION BY NWTE MAY BE CARRIED OUT AT THE TIME THE STRUCTURAL WORK IS COMPLETED. CONTRACTOR SHALL COORDINATE WITH NWTE IN ORDER TO SCHEDULE A SITE VISIT WITH CONTRACTOR PRESENT. NWTE WILL CLIMB THE TOWER AND VISUALLY OBSERVE THE STRUCTURAL MODIFICATION WORK AND VERIFY THAT THE WORK HAS BEEN DONE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS. VISUAL OBSERVATIONS WILL BE MADE OF THE NEW STRUCTURAL MEMBERS AND CONNECTIONS. NWTE WILL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT SUMMARIZING THE OBSERVATIONS MADE, INCLUDING ANY DEFICIENCIES WHICH, TO THE BEST OF NWTE'S KNOWLEDGE, HAVE BEEN RESOLVED.



 NorthWest Tower Engineering 2210 HEWITT AVE, SUITE 209 EVERETT, WA 98201-3767 PHONE: 425.258.4248 FAX: 425.258.4289	ISSUE DATE 04-30-18	REV. NO. A	REVISION DESCRIPTION ISSUE FINAL MODIFICATION DRAWINGS	BY K.P.W.
	SHEET TITLE GENERAL NOTES			
	PROJECT TITLE & LOCATION 100-FT SS TOWER EXTEND TO 130-FT INDIAN HILL, TACOMA, WA			
	CLIENT NAME CITY OF TACOMA ODELIA PACIFIC / PSERN			
CURRENT DATE 04-30-18	DRAWN BY K.P.W.	CHECKED BY S.A.D.	APPROVED BY H.S.C.	PROJECT NUMBER 180731.18
NOTICE NOT TO BE COPIED OR REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF NORTHWEST TOWER ENGINEERING				SHEET NUMBER G-1

STRUCTURAL NOTES FOR FUEL TANK FOUNDATION

(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 UNITED STATES OF AMERICA. SPECIFICATIONS, STANDARDS AND STANDARDS WHERE REFERENCED ON THE DRAWINGS ARE TO BE THE LATEST EDITION.

DESIGN LOADS

DEAD LOADS: FUEL TANK 25.5 KIPS (18 KIPS SELF WT + 7.5K)

EARTHQUAKE LOADS:

SITE CLASS (ASSUMED) D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s) 1.310
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1) 0.507
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{sD}) 0.873
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{1D}) 0.507
RISK CATEGORY IV
RESPONSE MODIFICATION FACTOR (R) 3.0 (FLAT MOUNTED TANK)
SEISMIC RAPIDITY FACTOR (I_E) 1.5
SEISMIC DESIGN CATEGORY D

WIND LOADS:

BASIC WIND SPEED (3 SECOND GUST) EXPOSURE 115 MPH
 K_z 0
2.0

SEE PLANS FOR ADDITIONAL DESIGN LOADS.

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 5705-4 OF THE RC.

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			
FOUNDATION BEARING CAPACITY VERIFICATION		X	
CONCRETE			
REINFORCING PLACEMENT		X	
EPOXY ANCHORS		X	
TESTING FOR f_c , AIR CONTENT, SLUMP	X		
NOTES:			
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 DESIGNED 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.			

FOUNDATIONS:

SOILS REPORT: NO. 1-33M-00286-0
BY: AMEC EARTH & ENVIRONMENTAL INC.
DATED: OCTOBER 31, 2001

ALLOWABLE SOIL PRESSURE: 2000 PSF

PASSIVE EARTH PRESSURE: 250 PSF

COEFFICIENT OF FRICTION: 0.35

ACTIVE PRESSURE: 35 PSF

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR ENGINEERED GRAVEL FILL AS REQUIRED AND AT LEAST 24" BELOW ADJACENT EXISTING GRADE. ANY FOOTING ELEVATIONS SHOWN IN THE DRAWINGS REPRESENT MINIMUM DEPTHS AND ARE FOR BIDDING ONLY. ACTUAL FOOTING ELEVATIONS ARE SUBJECT TO SITE CONDITIONS AND MUST THEREFORE BE ESTABLISHED BY THE CONTRACTOR. FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE, UNLESS NOTED OTHERWISE.

IMPORTED STRUCTURAL FILL AND BACKFILL MATERIAL SHOULD CONSIST OF CLEAN, WELL GRADED GRANULAR MATERIAL FREE OF DEBRIS OR ORGANICS WITH A MAXIMUM PARTICLE DIAMETER OF THREE INCHES AND NO MORE THAN 10% PASSING THE #200 SIEVE.

FILL AND BACKFILL MATERIAL SHOULD BE PLACED IN LAYERS NOT EXCEEDING TWENTY (20) INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 90% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM TEST METHOD D1557-00.

CONCRETE

ALL CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH ACI 318 AND THE AMERICAN CONCRETE INSTITUTE'S SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 308).

ALL CONCRETE SHALL BE SHOWN 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	MAXIMUM SLOPE/STAIR RATIO
FOUNDATIONS	4000 PSI	0.50	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 SUBSTITUTIONS. STRENGTH DATA IN ACCORDANCE WITH ACI 318.

ALL CONCRETE EXPOSED TO WEATHER OR TO FREEZING TEMPERATURES SHALL BE AIR-ENTRAINED AND COMPLY WITH ALL REQUIREMENTS IN ACCORDANCE WITH ACI 318 TABLE 19.3.2.1 FOR EXPOSURE CATEGORIES F1, S0, WD, D, C0.

REINFORCING STEEL

REINFORCING STEEL SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM A615, AND SHALL BE GRADE 60 ($f_y = 60,000$ PSI). UNLESS OTHERWISE NOTED, REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615 MAY BE WELDED IF MATERIAL PRODUCTION REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN AWS D1.4 ARE SUBMITTED.

REINFORCING STEEL SHALL BE DETAILING INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH SP-46 AND ACI 318B, LATEST EDITIONS. UNLESS OTHERWISE NOTED, REINFORCING SPICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE.

REINFORCING SHALL BE PLACED AND ADEQUATELY SUPPORTED PRIOR TO PLACING CONCRETE. WET SETTING EMBEDDED ITEMS IS NOT ALLOWED WITHOUT PRIOR ENGINEER APPROVAL. BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. REFER TO CHAPTER 7 OF ACI 318 FOR OTHER REINFORCING STEEL REQUIREMENTS.

MINIMUM LAPS AND EMBEDMENT

UNLESS OTHERWISE NOTED, REINFORCING SPICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE AS TABULATED BELOW.

BAR SIZE	DEVELOPMENT LENGTH			LAP SPICE		
	TENSION			COMPRESSION		
	TOP BARS	OTHER BARS	ALL BARS	TOP BARS	OTHER BARS	ALL BARS
#3	19	35	8	24	49	12
#4	25	39	10	32	25	15
#5	31	24	12	43	31	18
#6	37	28	15	49	37	23
#7	54	42	17	71	54	27
#8	62	48	19	81	62	30

NOTE:
1. ALL LENGTHS ARE IN INCHES.
2. ALL LAP SPICES ARE CLASS B.
3. "TOP BARS" ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MAINSPAN BELOW THE BAR.

CONCRETE COVER ON REINFORCING

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"

CONCRETE EXPOSED TO EARTH AND WEATHER:

#6 BARS AND LARGER 2"

#5 BARS AND SMALLER 1 1/2"

CONCRETE NOT EXPOSED TO EARTH OR WEATHER:

SLABS, WALLS AND JOISTS 3/4"

COLUMN TIES OR SPIRALS AND BEAM STIRRUPS 1 1/2"

CONCRETE GENERAL NOTES

PROVIDE CORNER BARS TO MATCH THE HORIZONTAL REINFORCING WITH TENSION LAP SPICE AT EACH SIDE PER TABLE, OR BEND ONE SIDE OVER TO PROVIDE TENSION LAP.

SEE ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOFS. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (3) #5 x 4'-0" DIAGONAL AT EACH CORNER. EXTEND BARS 2'-0" BY VOID EDGE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. HOOK ALL REINFORCING INTERRUPTED BY OPENINGS.

BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

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.

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.

PLATES, ANGLES, AND ROBS SHALL CONFORM TO ASTM A36, $f_y = 36$ KSI.

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 KSU LOW HYDROGEN ELECTRODES, WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE 5.8 IN AWS D1.4, 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 E70XX 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.

GENERAL

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR BUILDING 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 PIER, 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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WWW.AXIOM.COM



CG PROJECT# 16015.922

PROJECT MANAGER JAO

PREPARED BY JCP

APPROVED BY JAO

REV	DATE	DESCRIPTION



CITY APPROVAL

SHEET NAME
BUILDING AND FUEL TANK
FOUNDATIONS
STRUCTURAL NOTES

SHEET NUMBER

F1.1



STRUCTURAL NOTES

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

CODE

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

DESIGN LOADS

DEAD LOADS:
ROOF 15 PSF

LIVE LOADS:
ROOF (SNOW LOAD) 25 PSF

EARTHQUAKE LOADS:

SITE CLASS (ASSUMED) D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s) 1.287
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1) 0.362
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{ds}) 0.865
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{d1}) 0.322
RISK CATEGORY IV
SEISMIC IMPORTANCE FACTOR (I) 1.5
SEISMIC DESIGN CATEGORY D

WIND LOADS:

BASIC WIND SPEED (3 SECOND GUST) 115 MPH (RISK CAT IV)
EXPOSURE B
 K_{zt} 2.0

SEE PLANS FOR ADDITIONAL DESIGN LOADS.

EXISTING BUILDING

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

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

GENERAL

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR BUILDING 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 STRENGTHENING 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.

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 1701.4 OF THE IBC.

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

SPECIAL INSPECTION FOR THE ABOVE SYSTEMS SHALL BE AS INDICATED IN THE SPECIAL INSPECTION TABLE BELOW.

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.

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

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 DRAWINGS 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 BASED 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.

SPECIAL INSPECTION

OPERATION	CONT	PERIODIC	REMARKS
CONCRETE			
ADHESIVE ANCHORS		X	
STRUCTURAL STEEL			
FABRICATION & ERECTION		X	
SHOP & FIELD WELDING			
SINGLE PASS FILLET WELDS $\leq 6/16"$		X	
OTHER WELDING		X	

NON-SHRINK GROUT

NON-SHRINK GROUT SHALL BE CEMENT-BASED WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI WHEN TESTED IN ACCORDANCE WITH ASTM C-109. GROUT SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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 ROBS SHALL CONFORM TO ASTM A36, $F_y = 36$ KSI.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B, $F_y = 45$ 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" MINIMUM, UNLESS OTHERWISE SPECIFIED. BOLTS SHALL CONFORM TO ASTM A307.

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

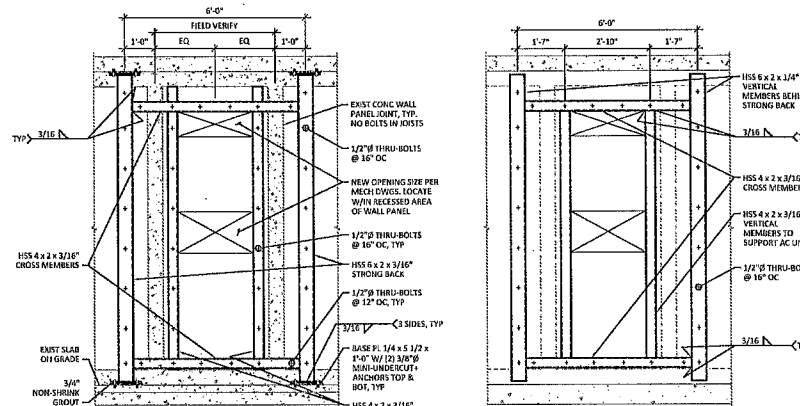
UNLESS SPECIFIED AS STAINLESS STEEL, ALL STEEL MEMBERS, SHAPES, BOLTS, AND ACCESSORIES EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED.

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITHIN 48 HOURS OF FABRICATION. WELDING SHALL BE DONE WITHIN 48 HOURS OF FABRICATION. WELDING SHALL BE DONE WITHIN 48 HOURS OF FABRICATION.

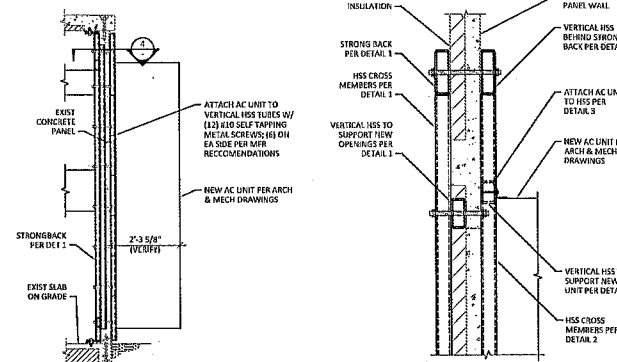
WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED OUT ON DRAWINGS OR APPROVED BY STRUCTURAL ENGINEER. WELDING OF GRADE 60 REINFORCING BARS SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS SHALL BE PERFORMED USING E70XX ELECTRODES. SEE 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.



1 INTERIOR ELEVATION AT AC UNIT
SCALE: 1/2" = 1'-0"

2 EXTERIOR ELEVATION AT AC UNIT
SCALE: 1/2" = 1'-0"



3 SECTION AT UNIT
SCALE: 1/2" = 1'-0"

4 SECTION
SCALE: 1/2" = 1'-0"



INDIAN HILL 1

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CG PROJECT# 16015-922

PROJECT MANAGER: JAC

PREPARED BY: JCS

APPROVED BY: NIM

REV	DATE	DESCRIPTION

PLAN REVIEWERS SIGNATURE

ENGINEERS STAMP



SHEET NAME

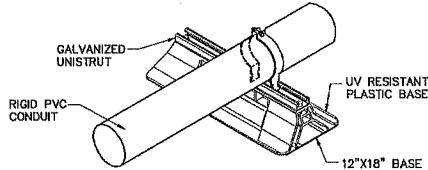
STRUCTURAL NOTES
AND DETAILS

SHEET NUMBER

S1.1

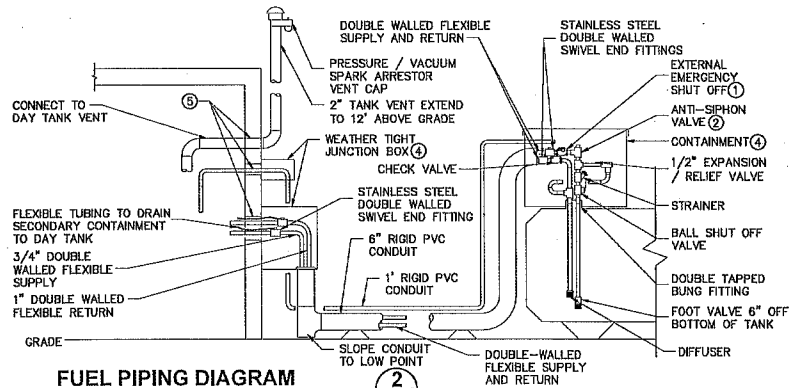
MISCELLANEOUS EQUIPMENT SCHEDULE

SYMBOL	ITEM DESCRIPTION	SPECIFIED MFR & MODEL NO.	AREA SERVED	EQUIPMENT CAPACITY	ELECTRICAL AMPS VOLTS/PH	REMARKS
LDP-1	TANK GAUGE AND LEAK DETECTION PANEL	FUEL SENTRY TG-EL-04A	TANK, DAY TANK	6 INPUT	4.2 120/1	PROVIDE NEMA 3 ENCLOSURE



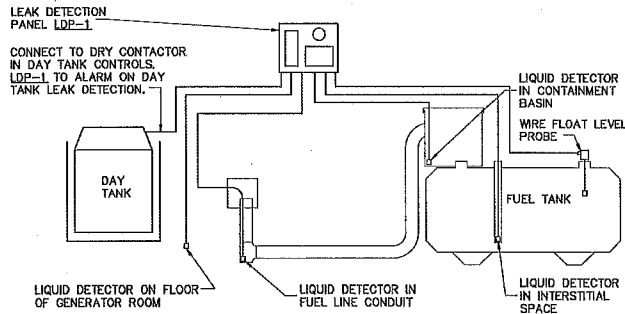
PIPE SUPPORT
NOT TO SCALE

1
M1.0



FUEL PIPING DIAGRAM
NOT TO SCALE

2
M1.0



NOTE: PROVIDE WIRE AND CONDUIT FROM PANEL TO EACH LEAK DETECTION DEVICE.

LEAK DETECTION SYSTEM DIAGRAM

NOT TO SCALE

3
M1.0

PIPING MATERIAL SCHEDULE

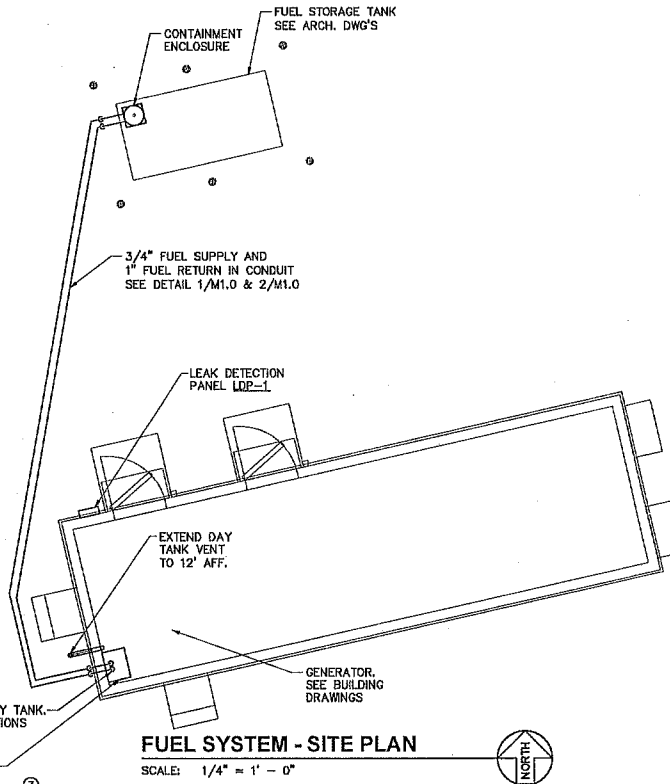
PIPING	LOCATION	MATERIAL	JOINT
DIESEL FUEL SUPPLY/RETURN	ALL	PVDF DOUBLE WALLED FLEXIBLE	STAINLESS STEEL END FITTINGS
DIESEL FUEL VENT	ABOVE GROUND	SCHEDULE 40 STEEL	THREADED
CONDUIT FOR FUEL PIPE	ALL	SCHEDULE 40 PVC	GLUED

KEYED NOTES:

1. FULL LINE SIZE FUSEABLE LINK SHUT-OFF VALVE.
2. COMPATIBLE IN A SUCTION SYSTEM.
3. VERIFY DAY TANK'S SUPPLY AND RETURN PUMPS ARE OPERATING CORRECTLY TO MOVE FUEL WITHOUT SPILL OR OVERFLOW.
4. SIZED BY CONTRACTOR TO CONTAIN ALL FITTINGS.
5. CORE DRILL EXIST. SHELTER WALL TO INSTALL PIPING. PROVIDE PVC SLEEVES. PACK INTERSTITIAL SPACE WITH MINERAL WOOL. LOCATION TO BE DETERMINED BY INSTALLING CONTRACTOR.

DRAWING NOTES:

1. FUEL PIPING INSTALLATION SHALL CONFORM TO 2015 NFPA 30.
2. SEAL ALL CONDUIT AND CONTAINMENTS TO BE WATER TIGHT.
3. CONTRACTOR SHALL LAY OUT CONTAINMENT CONDUITS AND PIPING SO THAT ANY POINT OF LEAKAGE IS CAUGHT BY SECONDARY CONTAINMENT AND ALARMS WITH THE LEAK DETECTION SYSTEM.
4. COORDINATE CONNECTION OF LEAK DETECTION SYSTEM TO REMOTE MONITORING.
5. PRESSURE TEST PRIMARY AND SECONDARY CONTAINMENT PIPING PER UFC REQUIREMENTS.



FUEL SYSTEM - SITE PLAN

SCALE: 1/4" = 1' - 0"



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PROJECT MANAGER: EJC

PREPARED BY: AJN

APPROVED BY: TAV

07/26/17	DESIGNED FOR FINAL REVIEW
07/26/17	DESIGNED FOR PRELIM REVIEW

PLAN REVIEWERS SIGNATURE



SHEET NAME
FUEL SYSTEM PLAN

SHEET NUMBER
M1.0

AIR CONDITIONER SCHEDULE																
SYMBOL	SPECIFIED MANUFACTURER AND MODEL NO.	TYPE	SUPPLY FAN				COOLING COIL & COMPRESSOR(S)				FILTERS		UNIT ELECTRICAL		REMARKS	
			CFM	ESP	RPM	WHEEL DIA.	HP	TOTAL CAP.*	EER*	QTY	REL(A)	TYPE	MIN. SF	MCA		VOLT/PH
AC-1	BAIRD WB1A2	WALL MOUNTED	1450	0.20	850	24"	1/3	57,500	10.0	1	26.9	1"	20X30	48	208/1	①

* MINIMUM UNIT COOLING CAPACITIES (INCLUDE FAN MOTOR HEAT), AT COOLING COIL CONDITIONS SHOWN AND WITH CONDENSER TEMPERATURE OF 95°F.

① W/ 100% ECONOMIZER

EXHAUST FAN SCHEDULE											
SYMBOL	SPECIFIED MANUFACTURER AND SERIES NUMBER	TYPE	AREA SERVED	CFM	ESP	RPM	ELECTRICAL		DRIVE	CONTROL	REMARKS
							AMP	V/PH			
EF-1	GREENHECK SP-A510	CEILING EXHAUST	EQUIPMENT ROOM	501	0.125	1070	3.30	120/1	DIRECT	CONTINUOUS OPERATION	①
ACCESSORIES: ①=W/ INTEGRAL BACK DRAFT DAMPER											

VENTILATION SCHEDULE				
ROOM	AREA SQ FT	REQUIREMENT	REQUIRED EXHAUST	PROVIDED EXHAUST
EQUIPMENT ROOM	458	1.0 CFM/SF	458 CFM	501 CFM

ENERGY CODE REQUIREMENTS

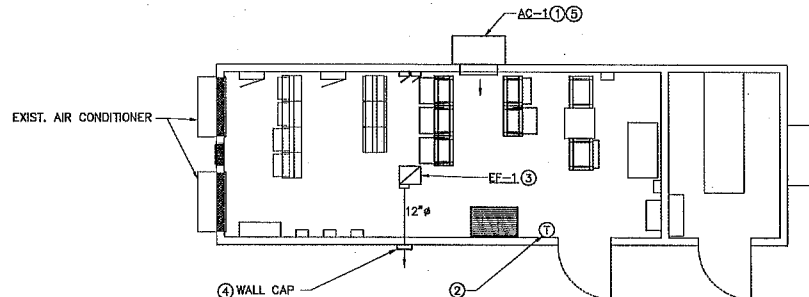
- TEST AND BALANCE EACH HVAC SYSTEM. ADJUST REGISTERS AND DAMPERS FOR AIR FLOW INDICATED ON DRAWINGS. ADJUST FAN SPEED FOR TOTAL AIR FLOW.
- PROVIDE COMMISSIONING OF ALL MECHANICAL SYSTEMS AS REQUIRED BY WASHINGTON STATE ENERGY CODE PARAGRAPH C408. PROVIDE THE COMMISSIONING COMPLIANCE CHECKLIST TO THE BUILDING OFFICIAL ON SUBSTANTIAL COMPLETION OF THE BUILDING.
- PROVIDE ENERGY EFFICIENT MOTORS ON THE HVAC EQUIPMENT AS REQUIRED IN WASHINGTON STATE ENERGY CODE PARAGRAPH C403.2.13. MOTORS LESS THAN 1HP SHALL HAVE A MINIMUM EFFICIENCY OF 70%.
- AIR CONDITIONER CONTROLS TO INCLUDE 7-DAY PROGRAMMING CAPABILITY, OPTIMUM START AND STOP CONTROL, UNOCCUPIED SETBACK, PART LOAD COOLING, AND 45°F OUTDOOR AIR LOCKOUT. CONTROLS SHALL NOT ALLOW SIMULTANEOUS HEATING AND COOLING.

DRAWING NOTES:

- COORDINATE INSTALLATION WITH ELECTRICAL, COMMUNICATION RACKS, LIGHTS AND OTHER BUILDING FEATURES.
- EQUIPMENT ROOM VENTILATION REQUIREMENT IS 1.0 CFM/SF FOR BATTERY CHARGING. EXHAUST FANS EF-1 SHALL RUN CONTINUOUSLY.

KEYED NOTES:

- SUPPORT AIR CONDITIONERS ON WALL MOUNTING BRACKETS PROVIDED WITH UNIT.
- UNIT THERMOSTAT: PROVIDE CONTROLS FOR LEAD/LAG OPERATION OF THE AIR CONDITIONERS. ROTATE THE LEAD UNIT SO THAT THE AIR CONDITIONERS GET EQUAL RUN TIME.
- MOUNT EF-1 SO THAT INTAKE IS WITHIN 12" OF THE HIGHEST POINT OF THE CEILING.
- 11X11 WALL CAP. GREENHECK MODEL WC OR APPROVED.
- SET MINIMUM OUTSIDE AIR FOR 400 CFM.



EQUIPMENT ROOM HVAC PLAN

SCALE: 1/4" = 1' - 0"

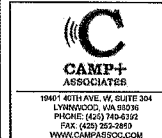


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PROJECT MANAGER: EJC

PREPARED BY: AJH

APPROVED BY: YAW

07/28/17	ISSUED FOR FINAL ZONING
07/28/17	ISSUED FOR PRELIM ZONING

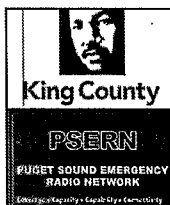
PLAN REVIEWERS SIGNATURE



SHEET NAME
HVAC
PLAN

SHEET NUMBER
M1.1

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PROJECT MANAGER: EJC

PREPARED BY: KR

APPROVED BY: PN

6/16/18 ISSUED FOR PERMIT
5/07/18 ISSUED FOR PRELIM PERMIT
8/11/17 ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE



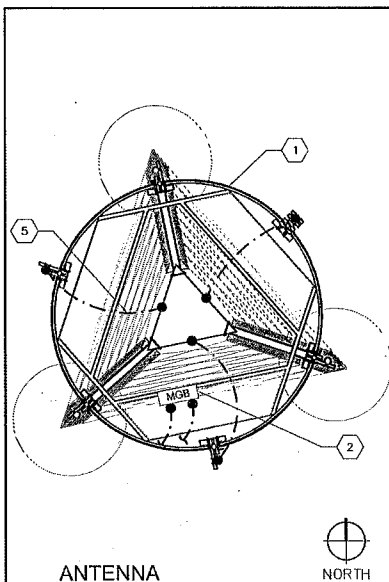
SHEET NAME
PANEL
SCHEDULES

SHEET NUMBER
E-2

NEW PANEL 'C1'													
MAIN BREAKER: MLO				VOLTS: 120/240V, 1PH, 3W				ENCLOSURE: NEMA 1				125 A	
NOTE	ORD	POLE	AMPS	VOLT-AMPS				MTG: SURFACE				AMPS	NOTE
				A		B			SERVICE				
1	2	20		RECTIFIER #1	SPEC	1500	1500						
3	2	20	AA						RECTIFIER #2	SPEC	1500	1500	
9	2	20	AA						RECTIFIER #3	SPEC	1500	1500	
7	2	20	AA										
9	2	20		RECTIFIER #5	SPEC	1500	1500						
11	2	20	AA										
13	1	-		SPACE									
15	1	-		SPACE									
17	1	-		SPACE									
19	1	-		SPACE									
21	1	-		SPACE									
23	1	-		SPACE									
25	1	-		SPACE									
27	1	-		SPACE									
29	1	-		SPACE									
TOTAL V-A				9000				9000				18,000 VA	
TOTAL AMPS				75				75				75 A	
A.I.C. RATING: 10,000													
CONNECTED LOAD IN KVA (THIS PANEL)				LTG	RECP	MOTR	LGMT	MISC	KIT	HEAT	SPEC	TOTAL	AMPS
CONNECTED LOAD IN KVA (BRANCH PANELS)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	75 A
TOTAL CONNECTED LOAD IN KVA				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.00	75 A
DEMAND LOAD IN KVA				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.50	94 A

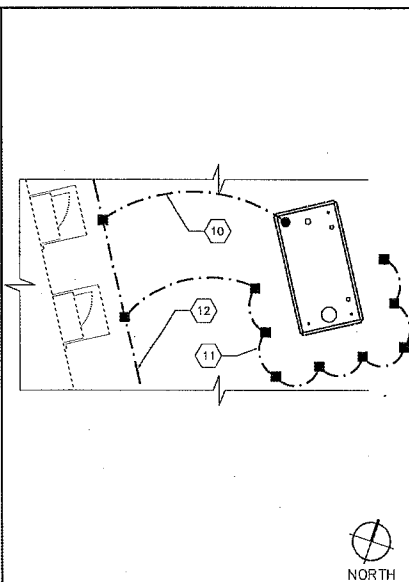
ELECTRICAL SERVICE DEMAND CALCULATION	
PSERN - INDIAN HILLS	
5225 TOWER DRIVE, TACOMA, WA 98422	
EXISTING SERVICE:	300A, 120/240V, 1-PHASE, 3-WIRE
PEAK EXISTING MEASURED DEMAND (05/09/18 - 06/15/18)	11.5 kW
x125% PER NEC 220.87:	14.4 KVA
IN AMPS:	60.0 A
NEW LOAD ADDED:	
NEW PANEL 'C1'	22.5 KVA
NEW PANEL 'C2'	22.8 KVA
TOTAL NEW LOAD:	45.3 KVA
TOTAL NEW AND EXISTING DEMAND:	59.7 KVA
IN AMPS:	248.8 A
THE EXISTING ELECTRICAL SERVICE EQUIPMENT IS ADEQUATELY SIZED FOR BOTH NEW AND EXISTING LOADS.	
*SEE PANEL SCHEDULES FOR INDIVIDUAL PANEL LOAD BREAKDOWNS.	

NEW PANEL 'C2'													
MAIN BREAKER: MLO				VOLTS: 120/240V, 1PH, 3W				ENCLOSURE: NEMA 1				125 A	
NOTE	ORD	POLE	AMPS	VOLT-AMPS				MTG: SURFACE				AMPS	NOTE
				A		B			SERVICE				
1	2	20		RECTIFIER #5	SPEC	1500	1500						
3	2	20	AA										
5	2	20	AA										
7	2	20	AA										
9	1	-		SPACE									
11	1	-		SPACE									
13	1	-		SPACE									
15	1	-		SPACE									
17	1	-		SPACE									
19	1	-		SPACE									
21	1	-		SPACE									
23	1	-		SPACE									
25	1	-		SPACE									
27	1	-		SPACE									
29	1	-		SPACE									
TOTAL V-A				9204				6150				15,354 VA	
TOTAL AMPS				77				70				77 A	
A.I.C. RATING: 10,000													
CONNECTED LOAD IN KVA (THIS PANEL)				LTG	RECP	MOTR	LGMT	MISC	KIT	HEAT	SPEC	TOTAL	AMPS
CONNECTED LOAD IN KVA (BRANCH PANELS)				0.00	0.00	11.92	2.88	0.50	0.00	0.00	0.00	18.4 KVA	77 A
TOTAL CONNECTED LOAD IN KVA				0.00	0.00	11.92	2.88	0.50	0.00	0.00	0.00	18.4 KVA	77 A
DEMAND LOAD IN KVA				0.00	0.00	11.92	2.88	0.50	0.00	0.00	0.00	22.8 KVA	95 A



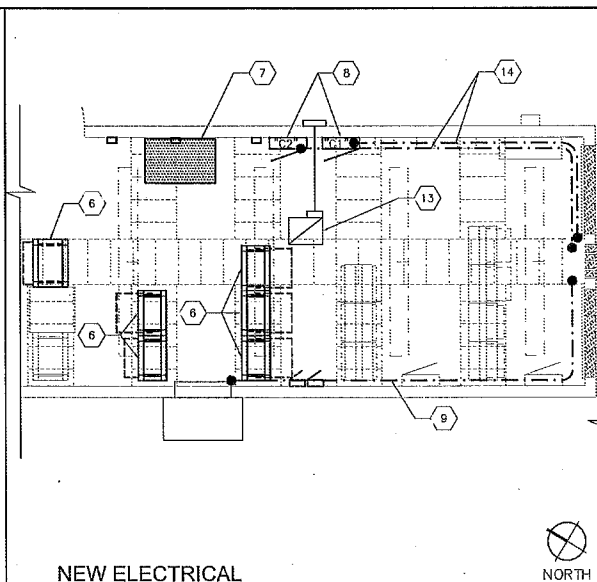
ANTENNA
GROUNDING PLAN @ 130'-0"

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



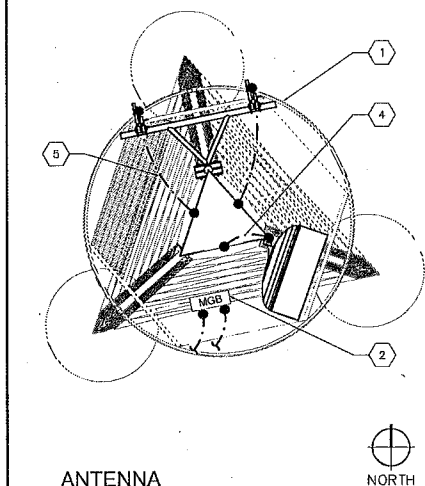
FUEL TANK GROUNDING

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



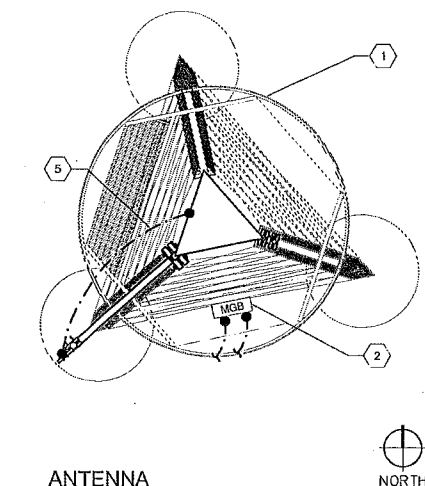
NEW ELECTRICAL
PANEL AND HVAC GROUNDING

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



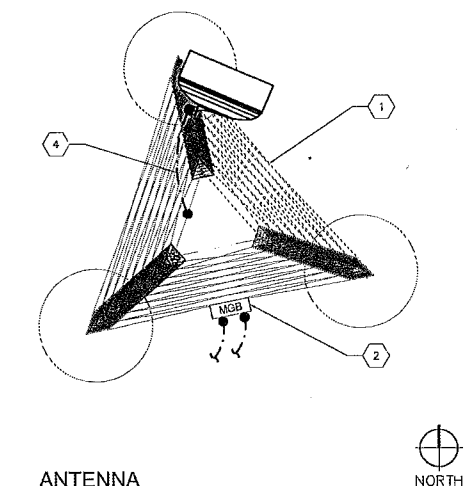
ANTENNA
GROUNDING PLAN @ 110'-0" / 125'-0"

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



ANTENNA
GROUNDING PLAN @ 100'-0"

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



ANTENNA
GROUNDING PLAN @ 42'-0"

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

KEYED NOTES:

- 1 EXISTING 100' HIGH TOWER (EXTENDED TO 130').
- 2 NEW MASTER GROUND BAR AT BASE OF TOWER MOUNTED TO EXISTING ICE BRIDGE. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS FROM MECHANICAL CONNECTION AT MASTER GROUND BAR TO EXOTHERMIC WELD CONNECTION AT EXISTING TOWER GROUND RING.
- 3 NOT USED.
- 4 MICROWAVE ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT TOWER STEEL TO MECHANICAL CONNECTION AT MICROWAVE ANTENNA, TYP.
- 5 COLLIMATOR OMNI ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT TOWER STEEL TO MECHANICAL CONNECTION AT COLLIMATOR OMNI ANTENNA, TYP.
- 6 EQUIPMENT RACK GROUNDING. PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM GROUND BUS BAR TO MECHANICAL CONNECTION AT EXISTING HALO GROUND RING.
- 7 BATTERY STACK GROUNDING. PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM BATTERY STACK TO MECHANICAL CONNECTION AT EXISTING HALO GROUND RING.
- 8 NEW CONDUIT INSTALLED UNDER THIS CONTRACTOR WITHIN 5 FT HORIZONTAL OF NEW PANELBOARDS SHALL BE BENT TO HAREST GROUND BUS BAR WITH MINIMUM #6 GREEN INSULATED CONDUCTOR. CONDUIT BONDING AS DESCRIBED ABOVE IS IN ADDITION TO THE EQUIPMENT GROUND CONDUCTOR ROUTED IN THE CONDUIT WITH THE POWER CONDUCTORS.
- 9 HVAC UNIT GROUNDING. PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM HVAC UNIT TO MECHANICAL CONNECTION AT EXISTING HALO GROUND RING.
- 10 FUEL TANK GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT FUEL TANK GROUNDING LUG.
- 11 SAFETY BOLLARD GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT BOLLARD, TYP.
- 12 EXISTING EQUIPMENT SHELTER EARTH GROUND CONDUCTOR LOCATED 30" BELOW FINISH GRADE.
- 13 EXHAUST FAN GROUNDING. PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM EXHAUST FAN (GRILLED) TO MECHANICAL CONNECTION AT EXISTING HALO GROUND RING.
- 14 NEW PANELBOARD GROUNDING. PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM NEW PANELBOARD TO EXISTING GROUND BAR ADJACENT TO ENTRY POINT.

GENERAL NOTES:

1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COVERED WITH TWO (2) COATS OF SHERWIN WILLIAMS GALVANNEE ELSSOIR OR EQUAL.
2. ALL ELECTRICAL CADWELD AND MECHANICAL GROUND CONNECTIONS WILL HAVE NON-IONIZATION COMPOUND APPLIED TO CONNECTION.
3. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALL AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
5. 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.
6. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
7. OBSERVE NEC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
8. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
9. WORK TO COMPLY WITH RSE STANDARDS FOR GROUNDING.

ITEM	DESCRIPTION
---	#2 AWG TINNED SOLID BARE COPPER WIRE.
---	CADWELD/EXOTHERMIC WELD CONNECTION.
●	MECHANICAL CONNECTION.

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

Stronger • Capable • Connected

INDIAN HILL #1

5225 TOWER DRIVE
TACOMA, WA 98422

PSECO CORPORATION

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ASSOCIATES

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LYNNWOOD, WA 98036
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WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: KR

APPROVED BY: PN

6/21/18	ISSUED FOR PERMIT
3/9/18	ISSUED FOR PRELIM PERMIT
9/11/17	ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE

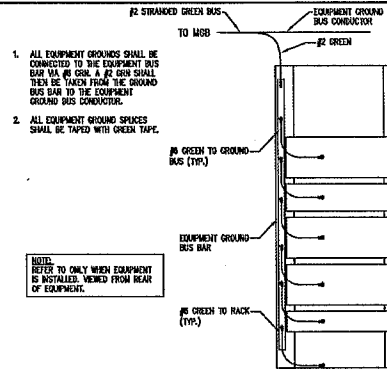
06/21/18

SHEET NAME
GROUNDING PLAN

SHEET NUMBER
E-3.0

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 IEEE 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 AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO ANY CONDUIT.
5. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (COLDWELD).
6. ALL GROUND CONNECTIONS ABOVE GRADE SHALL BE FORMED USING TWO (2) HIGH PRESS CRAMPS.
7. ALL GROUNDING CONNECTIONS 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.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TIN PLATED COPPER UNLESS NOTED OTHERWISE.

9. 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.
10. USE OF 60° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE ALLOWED WHEN 45° BENDS CAN BE ACCURATELY SUPPORTED.
11. MAXIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
12. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
13. ENSURE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
14. USE PAIN SCHEME FOR LABELING ON MASTER GROUND BAR AS DISCUSSED IN NED 119, 33 & 36.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
16. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.



NOTE:
REFER TO ONLY WHEN EQUIPMENT
IS INSTALLED VIEWED FROM REAR
OF EQUIPMENT.

GENERAL NOTES

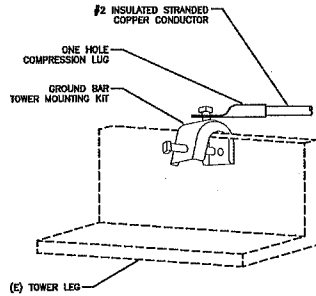
NOT TO SCALE

EQUIPMENT RACK GROUNDING

NOT TO SCALE

NOT USED

N/A



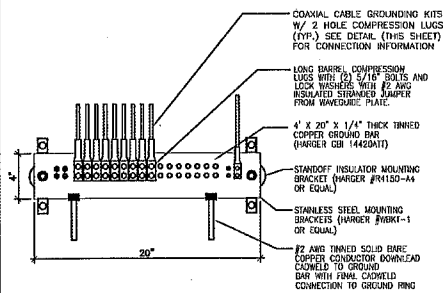
TOWER STEEL GROUNDING

NOT TO SCALE

NOT USED

NOT USED

NOT USED



STRANDED CU WIRE WITH GREEN, 600V, THIN/THIN INSULATION (SIZE AS SPECIFIED)

TWO-HOLE LUG, BOLTED TO GROUND BAR USING 3/8"-16 x 1 1/4" STAINLESS STEEL HEX HEAD BOLTS AND HARDWARE.

GROUND BAR ON WALL, FLOOR OR ON ANTENNA TOWER

CADWELD WITH #2 AWG SOLID TINED BARE CU WIRE OR STRANDED CU WIRE WITH GREEN, 600V, THIN/THIN INSULATION TO ANTENNA STRUCTURE, BUILDING, GROUND RING OR MASTER GROUND BAR

* GROUND BARS AT BOTTOM OF TOWERS OR MONOPOLES SHALL USE EXOTHERMIC CONNECTION.

PAIN 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 CIRC, 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 IEN EQUIPMENT

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

MASTER GROUND BAR DETAILS

NOT TO SCALE

NOT USED

-



INDIAN HILL #1

5225 TOWER DRIVE
TACOMA, WA 98422



PROJECT MANAGER: EJC

PREPARED BY: KR

APPROVED BY: PN

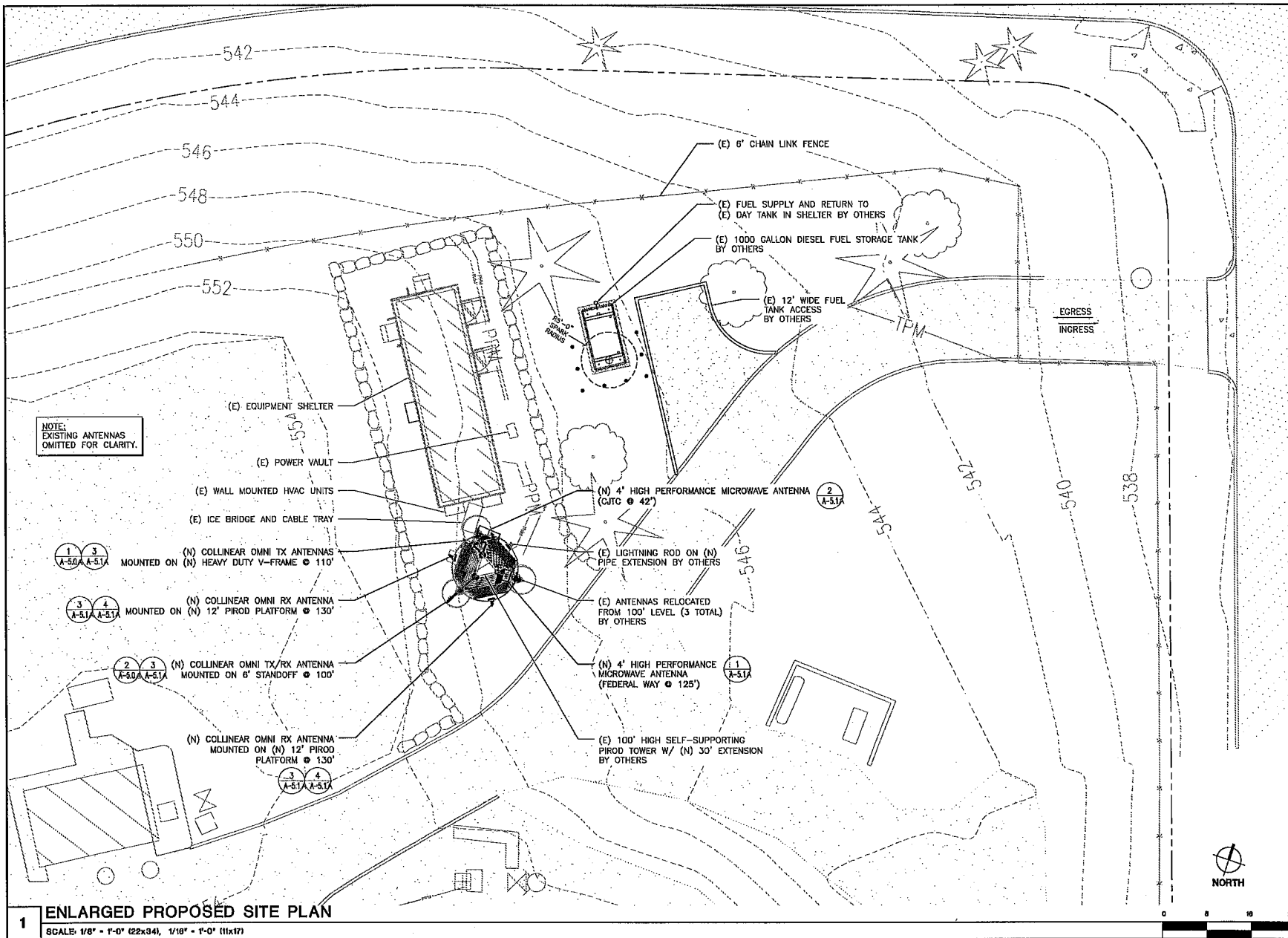
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5/9/18	ISSUED FOR PRELIM PERMIT
8/11/17	ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE



SHEET NAME
GROUNDING
DETAILS AND
NOTES

SHEET NUMBER
E-4.0



King County

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PUGET SOUND EMERGENCY
RADIO NETWORK
Unleashing Capacity • Capabilities • Connectivity

INDIAN HILL #1

(ANTENNAS)

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PROJECT MANAGER: EIC

PREPARED BY: JBT

APPROVED BY: LM

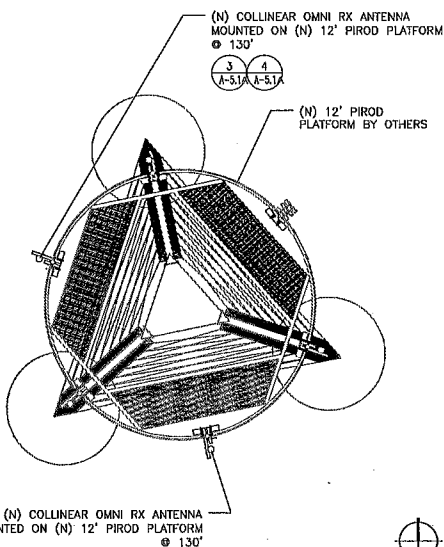
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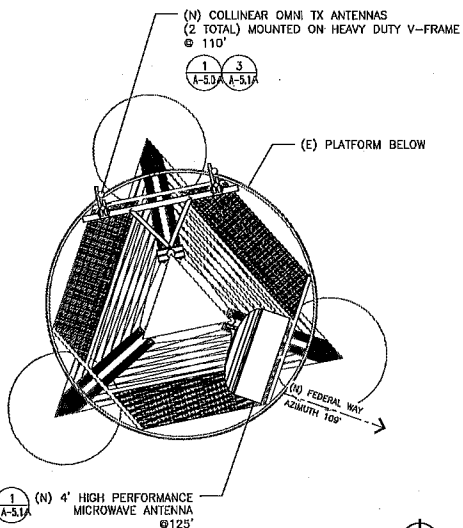
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12346
REGISTERED
ARCHITECT
GEORGE J. VITALE
STATE OF WASHINGTON
REV 01/01

SHEET NAME
ENLARGED
PROPOSED
SITE PLAN

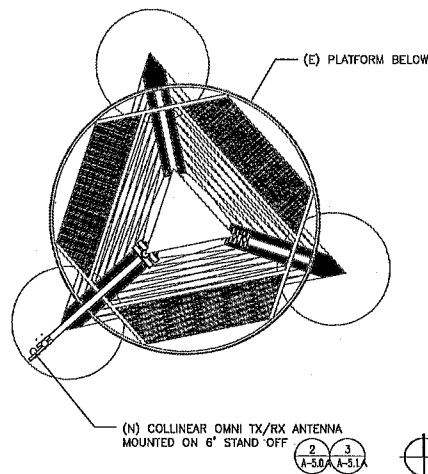
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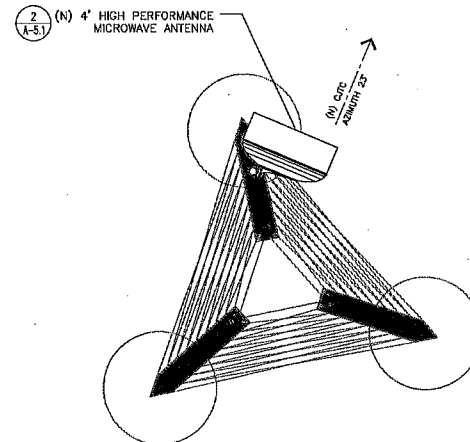
1 ANTENNA PLAN @ 130'-0"
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)



2 ANTENNA PLAN @ 110'-0" / 125'-0"
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)



3 ANTENNA PLAN @ 100'-0"
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)



4 ANTENNA PLAN @ 42'-0"
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)

ANTENNA / COAX SCHEDULE								
RAD CENTER	PATH	MOUNTING HEIGHT	AZIMUTH	TOWER LEG	QTY.	DESCRIPTION	COAX	COAX LENGTH
125'-0"	FEDERAL WAY	—	109°	—	1	4' HIGH PERFORMANCE MW ANTENNA	EW90	±170'
42'-0"	CJTC	—	23°	—	1	4' HIGH PERFORMANCE MW ANTENNA	EW90	±90'
—	—	130'-0"	—	—	2	±14'-6" COLLILINEAR OMNI RX ANTENNA	AWA5-50FX	±180'
—	—	110'-0"	—	—	2	±14'-6" COLLILINEAR OMNI TX ANTENNA	AWA5-50FX	±180'
—	—	100'-0"	—	—	1	±14'-6" COLLILINEAR OMNI ANTENNA (8CALL)	AWA5-50FX	±150'

NOTE:
PROVIDE (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM.
SYSTEM SHALL INCLUDE: (1) DUAL DIVERSITY TOWER TOP AMPLIFIER (TTA).
(4) 7/8" COAXIAL CABLES (2 LINES ARE JUMPERS FROM THE TTA TO ANTENNAS).
(1) 1/2" COAXIAL CABLE (FSJ4-50B).

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 IN THE TABLE ABOVE. 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 THREE (3) LOCATIONS:
A - ANTENNAS
B - WAVEGUIDE ENTRY PORT
C - EQUIPMENT CABINET
4. EACH COAX SHALL BE GROUNDED AT (3) THREE LOCATIONS; ANTENNA, TOWER BASE AND BUILDING ENTRY PORT.



INDIAN HILL #1
(ANTENNAS)
5225 TOWER DRIVE
TACOMA, WA 98422



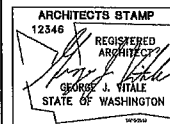
PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

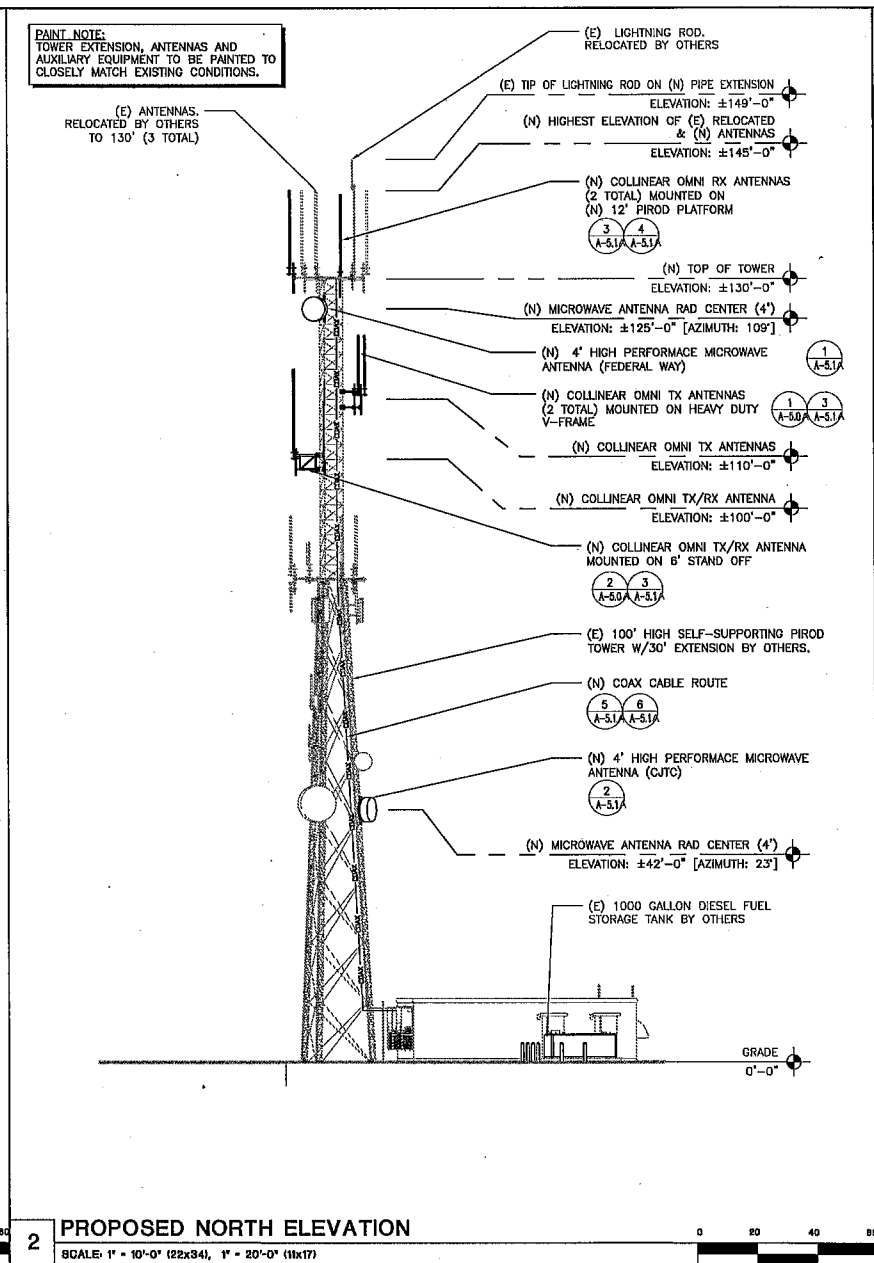
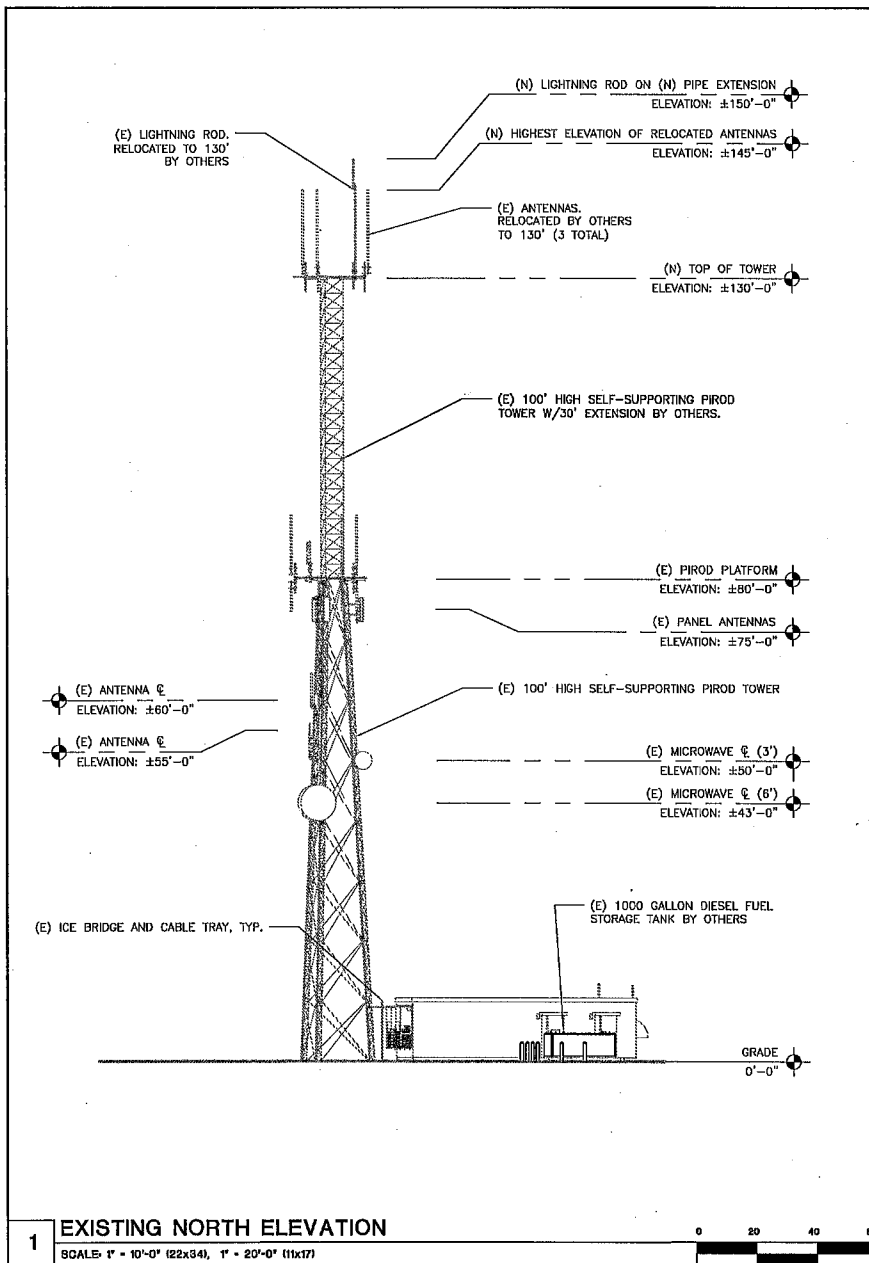
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SHEET NAME
ANTENNA PLANS

SHEET NUMBER
A-3.0.A



King County

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PUGET SOUND EMERGENCY RADIO NETWORK
Specialty Capacity • Capacity • Connectivity

INDIAN HILL #1
(ANTENNAS)
5225 TOWER DRIVE
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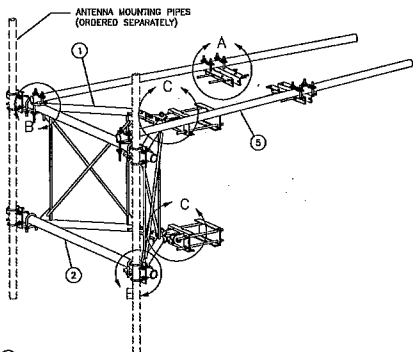
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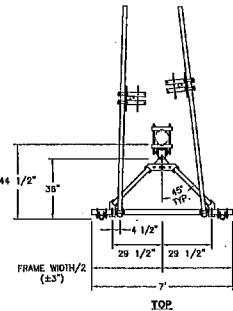
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REGISTERED ARCHITECT
GEORGE J. VITALE
STATE OF WASHINGTON
1610.03

SHEET NAME
NORTH ELEVATIONS

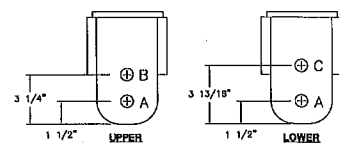
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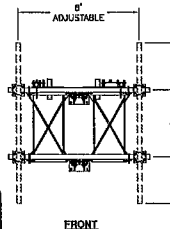
PARTS LIST				
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT
1	2	X-VFAW	SUPPORT ARM	WT.
2	2	P3084	2-1/2" SCH. 40 PIPE (2.575" O.D. X 0.203" WALL) (STD)	81.29
3	1	X-18204	CHASSIS PLATE	7.19
4	1	X-18204	FLAT DISK CLAMP FOR V-FRAME (ONLY)	2.80
5	2	X-18204	2-3/4" O.D. X 1/2" SCH. 40 GALV. PIPE	18.19
6	2	X-18204	5/8" X 1/2" X 1/2" UNF. X 1/2" TYPICAL (HDS.)	40.75
7	2	X-18204	VFA-100 PHOTO PLATE	19.39
8	2	X-18204	VFA-100 PHOTO PLATE	19.39
9	2	X-18204	VFA-100 PHOTO PLATE	19.39
10	2	X-18204	VFA-100 PHOTO PLATE	19.39
11	2	X-18204	VFA-100 PHOTO PLATE	19.39
12	2	X-18204	VFA-100 PHOTO PLATE	19.39
13	2	X-18204	VFA-100 PHOTO PLATE	19.39
14	2	X-18204	VFA-100 PHOTO PLATE	19.39
15	2	X-18204	VFA-100 PHOTO PLATE	19.39
16	2	X-18204	VFA-100 PHOTO PLATE	19.39
17	2	X-18204	VFA-100 PHOTO PLATE	19.39
18	2	X-18204	VFA-100 PHOTO PLATE	19.39
19	2	X-18204	VFA-100 PHOTO PLATE	19.39
20	2	X-18204	VFA-100 PHOTO PLATE	19.39
21	2	X-18204	VFA-100 PHOTO PLATE	19.39
22	2	X-18204	VFA-100 PHOTO PLATE	19.39
23	2	X-18204	VFA-100 PHOTO PLATE	19.39
24	2	X-18204	VFA-100 PHOTO PLATE	19.39
25	2	X-18204	VFA-100 PHOTO PLATE	19.39
26	2	X-18204	VFA-100 PHOTO PLATE	19.39
27	2	X-18204	VFA-100 PHOTO PLATE	19.39
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29	2	X-18204	VFA-100 PHOTO PLATE	19.39
TOTAL WEIGHT:				268.78



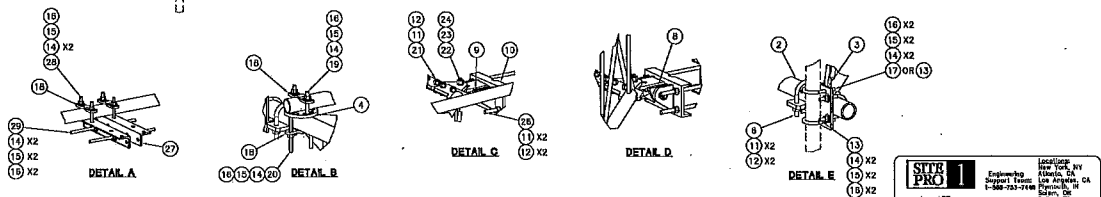
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- NOTES:**
- USE HOLE "A" IN UPPER AND LOWER BRACKETS FOR STRAIGHT LEGS.
 - USE HOLE "A" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 2" IN 20° TAPER LEGS. (3.309 DEG.)
 - USE HOLE B IN UPPER BRACKET AND HOLE C IN LOWER BRACKET FOR 6" IN 20° TAPER LEGS. (0.827 DEG.)

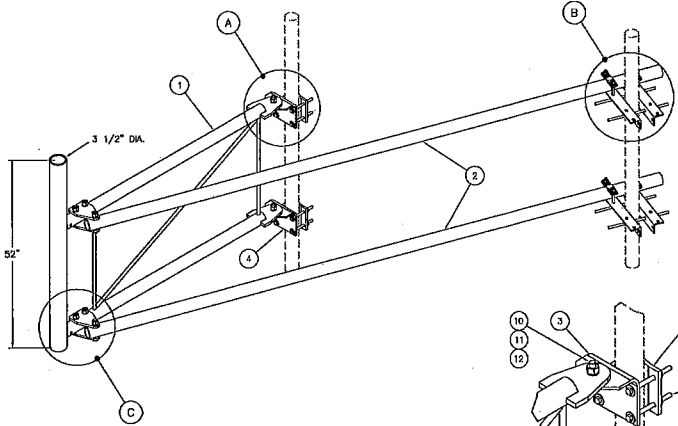


SIDE



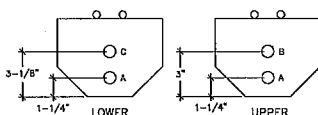
1 SITE PRO VFA6-HD HEAVY DUTY V-FRAME DETAIL

NOT TO SCALE

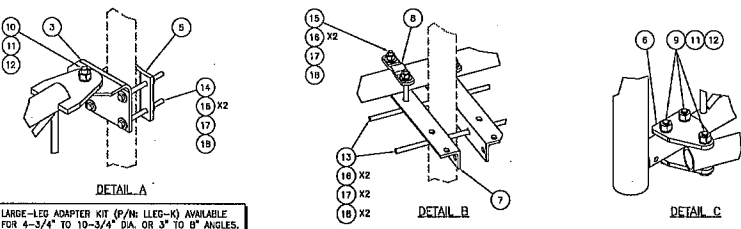


PARTS LIST				
ITEM	QTY	PART NO.	PART DESCRIPTION	UNIT
1	1	X-18204	6" STANDOFF ARM	WT.
2	2	X-184155	STRUT ARM	154.23
3	1	X-18204	UPPER MOUNTING BRACKET FOR V-FRAME	8.73
4	1	X-18204	LOWER MOUNTING BRACKET FOR V-FRAME	8.73
5	2	X-18204	BACKING PLATE	5.73
6	4	X-183735	TIE BACK PLATE	3.98
7	4	X-183735	TIE BACK PLATE	3.98
8	4	X-183735	TIE BACK PLATE	3.98
9	4	X-183735	TIE BACK PLATE	3.98
10	2	A34211	3/4" X 2-1/2" UNF. HEX BOLT (A325)	0.48
11	8	G34LW	3/4" HDG LOCKWASHER	0.04
12	8	G34HUT	3/4" HDG HEAVY 2H HEX NUT	0.21
13	4	G120-15	1/2" X 15" THREADED ROD (HDS.)	0.40
14	8	G120-15	1/2" X 15" THREADED ROD (HDS.)	0.41
15	8	G120-15	1/2" X 15" THREADED ROD (HDS.)	0.41
16	32	G12FW	1/2" HDG USS FLATWASHER	0.03
17	24	G12LW	1/2" HDG LOCKWASHER	0.01
18	24	G12HUT	1/2" HDG HEAVY 2H HEX NUT	0.07
TOTAL WEIGHT:				442.78

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- NOTES:**
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 - USE HOLE "A" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 2" IN 20° TAPER LEGS. (3.309 DEG.)
 - USE HOLE "B" IN UPPER BRACKET AND HOLE "C" IN LOWER BRACKET FOR 6" IN 20° TAPER LEGS. (0.827 DEG.)



2 SITE PRO BOG6 6' STAND OFF KIT DETAIL

NOT TO SCALE



INDIAN HILL #1

(ANTENNAS)

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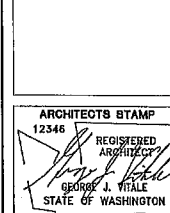
PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

ADDS-14-18 ISSUED FOR PERMIT

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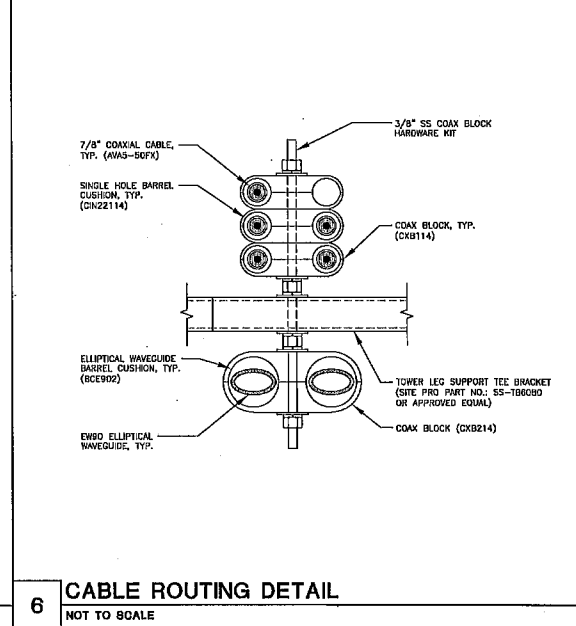
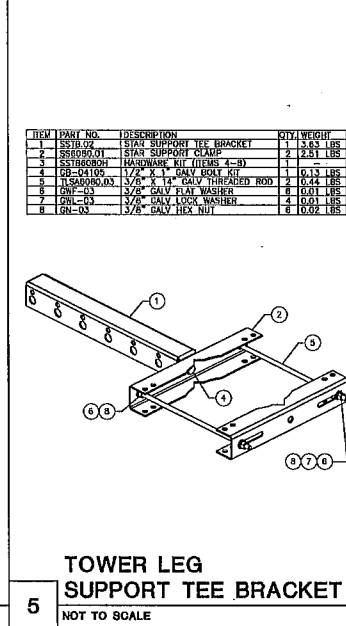
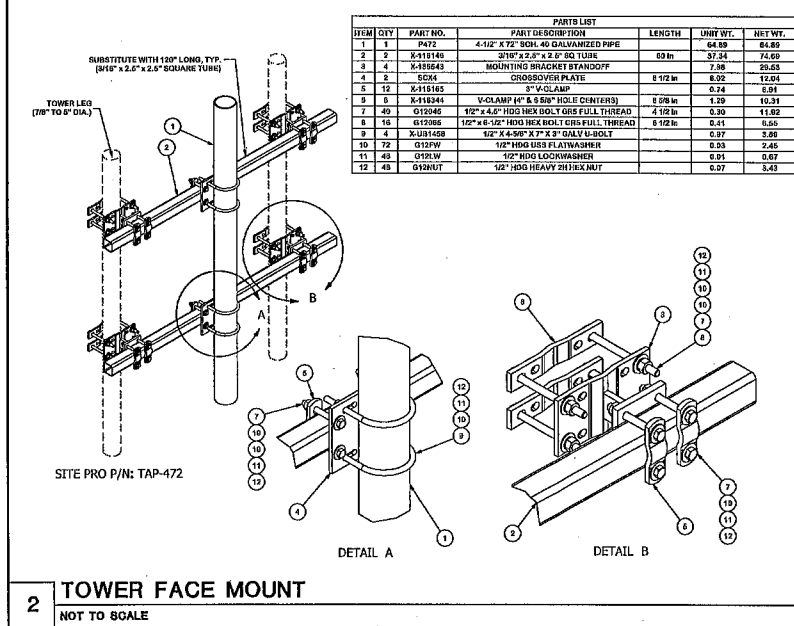
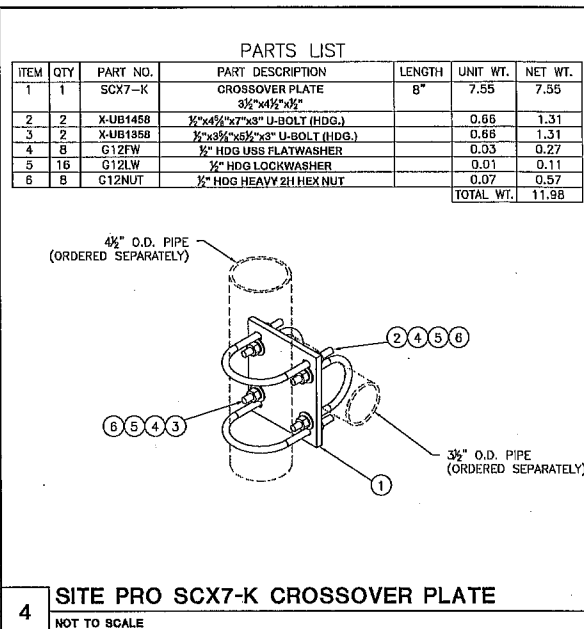
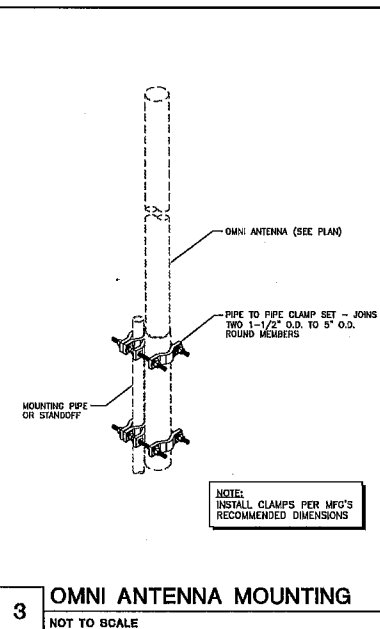
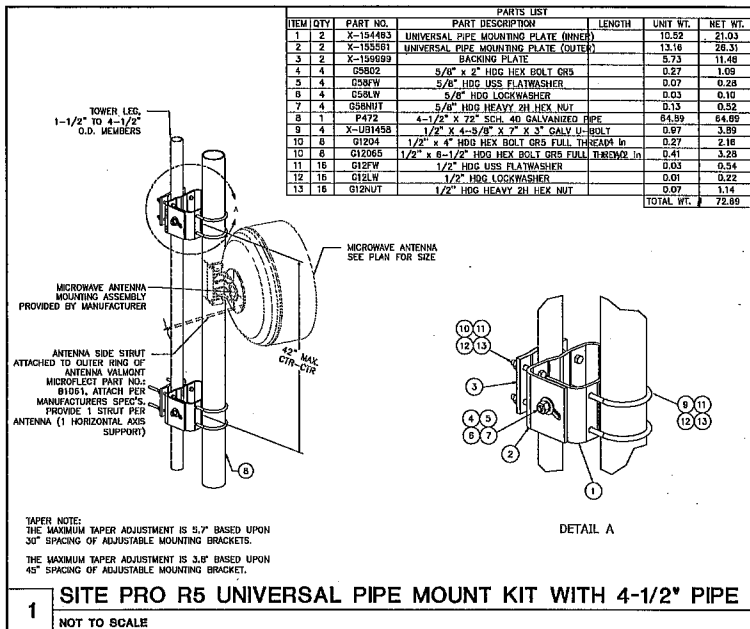


SHEET NAME

DETAILS

SHEET NUMBER

A-5.0.A



King County

PSERN

RUGET SOUND EMERGENCY RADIO NETWORK

INDIAN HILL #1

(ANTENNAS)

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TACOMA, WA 98422

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PREPARED BY: JBT

APPROVED BY: LM

PLAN REVIEWER'S SIGNATURE

ARCHITECT'S STAMP

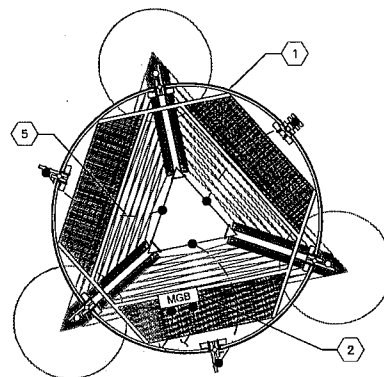
12346
REGISTERED ARCHITECT
GEORGE J. TITALE
STATE OF WASHINGTON

SHEET NAME

DETAILS

SHEET NUMBER

A-5.1A

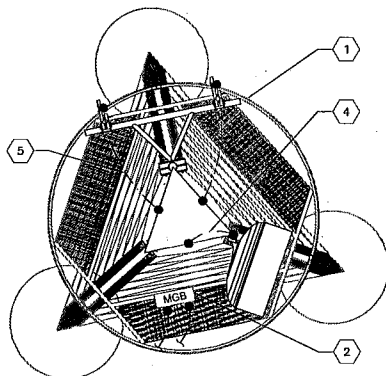


ANTENNA
GROUNDING PLAN @ 130'-0"

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

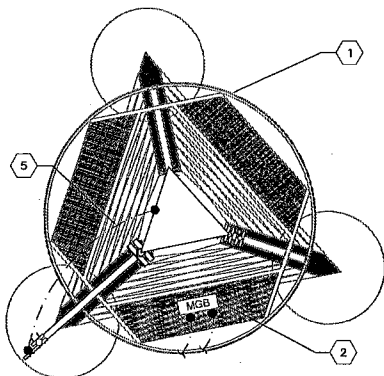
KEYED NOTES:

- 1 EXISTING 100' HIGH TOWER (EXTENDED TO 130').
- 2 NEW MASTER GROUND BAR AT BASE OF TOWER MOUNTED TO EXISTING ICE BRIDGE. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS FROM MECHANICAL CONNECTION AT MASTER GROUND BAR TO EXOTHERMIC WELD CONNECTION AT EXISTING TOWER GROUND RING.
- 3 NOT USED.
- 4 MICROWAVE ANTENNA GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT TOWER STEEL TO MECHANICAL CONNECTION AT MICROWAVE ANTENNA, TYP.
- 5 COLLIMATED OMNI ANTENNA GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT TOWER STEEL TO MECHANICAL CONNECTION AT COLLIMATED OMNI ANTENNA, TYP.
- 6 EQUIPMENT RACK GROUNDING, PROVIDE #2 INSULATED STRANDED COPPER CONDUCTOR FROM GROUND BUS BAR TO MECHANICAL CONNECTION AT EXISTING HALO GROUND RING.



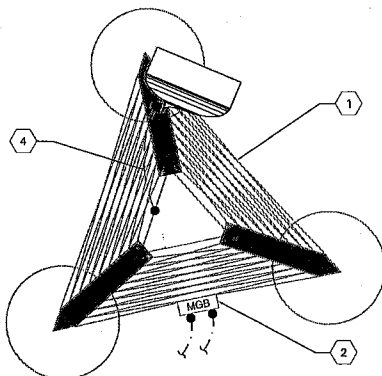
ANTENNA
GROUNDING PLAN @ 110'-0" / 125'-0"

2
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)



ANTENNA
GROUNDING PLAN @ 100'-0"

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



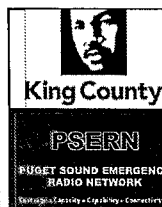
ANTENNA
GROUNDING PLAN @ 42'-0"

4
SCALE: 3/8" = 1'-0" (22x34), 3/16" = 1'-0" (11x17)

GENERAL NOTES:

1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COVERED WITH TWO (2) COATS OF SHERWIN WILLIAMS GALVANNE 3350N3 OR EQUAL.
2. ALL ELECTRICAL CADWELD AND MECHANICAL GROUND CONNECTIONS WILL HAVE NON-OXIDATION COMPOUND APPLIED TO CONNECTION.
3. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
4. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALL AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
5. 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.
6. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTIONS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
7. OBSERVE NEC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
8. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
9. WORK TO COMPLY WITH IEEE STANDARDS FOR GROUNDING.

LEGEND	
ITEM	DESCRIPTION
---	#2 AWG TINNED SOLID BARE COPPER WIRE.
■	CADWELD/EXOTHERMIC WELD CONNECTION.
●	MECHANICAL CONNECTION.



INDIAN HILL #1
(ANTENNAS)
5225 TOWER DRIVE
TACOMA, WA 98422

DELTA RADIO CORPORATION
5565 8TH AVE. S. SUITE 202
SEATTLE, WA 98108
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WWW.DELTA.COM

CAMP+
ASSOCIATES
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WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: JBT

APPROVED BY: LM

AD 05-14-18 ISSUED FOR PERMIT

PLAN REVIEWER'S SIGNATURE

ARCHITECT'S STAMP

SHEET NAME
GROUNDING
PLAN

SHEET NUMBER
E-1.A

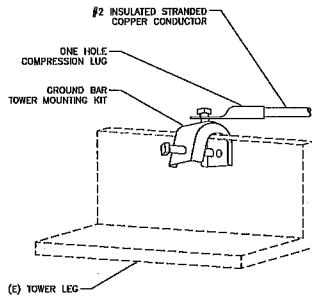
1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. ALL GROUNDING SHALL CONFORM TO RSG STANDARDS.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO ANY CONDUIT.
5. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (SOLDERED).
6. ALL GROUND CONNECTIONS ABOVE GRADE SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
7. 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.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TIN PLATED COPPER UNLESS NOTED OTHERWISE.
9. 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.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. MAXIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
12. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
13. ENSURE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
14. USE PAN SCHEME FOR LOADING ON MASTER GROUND BAR AS DISCUSSED IN NSTD 115, 33 & 36.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
16. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.

1 GENERAL NOTES

NOT TO SCALE

2 NOT USED

3 NOT USED



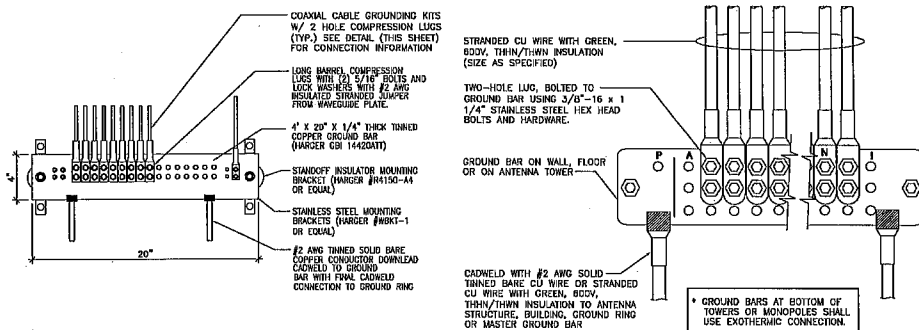
4 TOWER STEEL GROUNDING

NOT TO SCALE

6 NOT USED

7 NOT USED

8 NOT USED



PAN 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 MASTER GROUND BAR DETAILS

NOT TO SCALE

9 NOT USED



King County

PSERN

**PUGET SOUND EMERGENCY
RADIO NETWORK**

Coverage • Capacity • Capability • Connectivity

INDIAN HILL #1

(ANTENNAS)

**5225 TOWER DRIVE
TACOMA, WA 98422**



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PROJECT MANAGER: EJC

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APPROVED BY: LM

AD 05-14-18 ISSUED FOR PERMIT

PLAN REVIEWER'S SIGNATURE

ARCHITECT'S STAMP

**SHEET NAME
GROUNDING
DETAILS AND
NOTES**

**SHEET NUMBER
E-2.A**

Exhibit C

Fee Schedule

This Fee Schedule is made a part of the Agreement to which it is attached. This Fee Schedule is governed by Section 5 (Fees), Section 6 (Additional Fees and Taxes), and Section 7 (Billing) of the Agreement.

1. Annual Use Fee: The Annual Use Fee for Licensee's use of the Site covered by the Agreement will be Twenty Thousand and No/100 Dollars (\$20,000.00). The first day of billing under the Agreement, or any amendment thereto, shall be the Effective Date. The first year charge will be the applicable Annual Use Fee, prorated from the Effective Date until December 31st of the same year. Subsequent Annual Use Fee invoices will be sent by Licensor in January of each year, due 30 days from invoice date.
2. Leasehold Excise Tax. If the Licensee is or becomes subject to payment of Leasehold Excise Tax, then Licensee shall begin paying applicable Leasehold Excise Tax to Licensor or Washington State Department of Revenue ("**DOR**"), as determined by DOR. If DOR determines Licensee shall pay such Leasehold Excise Tax to Licensor, then Licensee shall pay Licensor the current and applicable Leasehold Excise Tax at the time of payment of the Annual Use Fee.
3. Annual Adjustment of Fees: Commencing on January 1, 2021, and on each anniversary of that date (the "**Adjustment Date**"), the Annual Use Fee shall increase based on the Consumer Price Index published by the Bureau of Labor and Statistics of the United States Department of Labor for all Urban Consumers, US City Average published three months prior to the Adjustment Date, and multiplying the resultant number by the annual amount of the most recent past payment.
4. Administrative Costs. Any necessary Administrative Costs, as set forth at Section 5.C, incurred by the Licensor, will be invoiced on a quarterly basis, due within 30 days from Licensee receipt.

Exhibit D

MINIMUM STANDARDS

Licensee shall comply with the following minimum standards:

A. FCC License Documentation – Required Documentation On-Site

Each transmitter and receiver at the Site shall be identified with a copy of the Federal Communications Commission (FCC) license documentation.

B. Isolators (if applicable)

All communications fixed transmitter installations shall employ isolators or alternative techniques meeting the same criteria, to minimize spurious radiation and intermodulation products in accordance with the requirements of the Western Washington Cooperative Interference Committee (WWCIC) Engineering Standard #6 dated January 1997 or later.

C. General Engineering Standards

Licensee shall observe the General Engineering Standards as follows:

- i. A bandpass cavity or crystal filter is recommended at the input of all receivers. Its purpose is to protect against RF energy "off frequency" from mixing in a non-linear device such as the first RF amplifier in a receiver, which can re-radiate causing interference.
- ii. The band reject duplexer (cross notch duplexer) may not be used without a cavity/isolator outlined above.
- iii. Single braid coax cable is prohibited. Double shielded cable must have over 98.5% shield coverage.
- iv. Jacketed coaxial cable is required, unjacketed transmission line of any type is prohibited.
- v. Use of "N," "TNC," or "DIN" or other types of constant impedance connectors is preferred over a non-constant impedance types. Every effort should be made to prevent the use of coax adapters.
- vi. All equipment is to be grounded and shielded using the "Single Point Grounding" technique. Grounding is to be done with copper strap or heavy braid to a station ground grid. The "green wire" of the AC power plug is not an acceptable grounding point.
- vii. Transmitting systems must be checked periodically, which includes the isolator, VSWR on the load port of the isolator and overall system insertion loss.
- viii. Bare metallic ties are prohibited for securing transmission lines to towers. In the case of large lines, use of stainless steel or galvanized hangers is permitted. Hardware capable of rusting and dissimilar metals are prohibited. Transmission lines are to be insulated from metallic structures/objects. It is the duty of the installation personnel to prevent "diode junctions" from taking place.

- ix.** All loose wire and metal objects are to be removed from the tower and Site. All new metal fencing associated with transmitter sites shall be plastic coated.
- x.** All equipment shall be licensed and operated in full accordance with all applicable rules and regulations of the regulating agency (FCC, NTIA). There shall be no modifications which violate "FCC Type Acceptance."
- xi.** Licensor equipment shall be labeled with the Licensor name and a current 24-hour telephone contact number.
- xii.** Every effort shall be made to protect the equipment from lightning damage. Feed-through lightning protectors shall be used on all coaxial cable connections to equipment enclosures. Gas, gap and MOV protectors shall be used on control, audio, telephone and power connections.

Exhibit E

INTERFERENCE POLICY STATEMENT

Licensee shall comply with Licensor's Interference Policy Statement. Licensor's Interference Policy Statement follows:

- i. **Radio Interference.** Licensee's Equipment, Work, and operations at the Site and Property shall not interfere with the communications configurations, frequencies or operating equipment of other users that were installed on the Property prior to Licensee's Equipment, Work, and operations. In the event radio interference (**RI**) occurs, all users of the Property are required to participate in solving the problem by providing technical personnel and test equipment to locate the source of the specific problem within a reasonable amount of time. The user(s) found to be causing the interference shall be responsible for resolving such interference at their sole expense. In the event that such interference resulting from users other than Licensee is not corrected within thirty (30) days, Licensee may terminate the Agreement per Section 20 "Termination." Specifically as to Licensee, Licensee shall not use the Site in any way which interferes with the use by Licensor, or any other tenant or licensee who's use of the Property and/or Wireless Communications Facilities commenced prior to the installation date of Licensee's Equipment on the Site, and are operating and continue to operate in compliance with all Applicable Standards and applicable manufacturers' specifications. All equipment located on the Property must be maintained in good working order and meet original manufacturers and FCC specification for reduction of transmitter spurious radiation.
- ii. **Compliance.** Involved systems, not in full compliance with the standards, will be required to comply immediately.
- iii. **Minimum Standards.** The standards listed are minimums found to be good engineering practices in the operation and maintenance of electronic sites.
- iv. **Intermodulation Study.** An intermodulation study shall be performed by the Licensee, and a copy provided to the Licensor, for each transmitter added by the Licensee to the Site.
Intermodulation Study completed by Licensee: 02/06/2020
Intermodulation Study approved by Licensor: Initial: _____ Date: _____
- v. **Examination for Interference.** Licensor reserves the right to use its test equipment to examine for any harmful interference before Licensee initiates service.