DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 – 110TH AVENUE NE, P.O. BOX 90012
BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: Sarah Telschow for **King County Puget Sound Emergency Radio Network (PSERN)**
LOCATION OF PROPOSAL: 12412 Newcastle Way

DESCRIPTION OF PROPOSAL: The applicant requests Conditional Use approval to construct a 170-foot tall communication pole with antennas/other attachments and install associated ground-mounted equipment. Ground-mounted equipment will be screened with a fence and plantings. The location is Bellevue Fire Station #9. Site area for the parcel is 70,292 square feet.

FILE NUMBER: 16-139244-LB

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

- ☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on _____.
- ☒ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on May 18, 2017.
- ☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5:00 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating a proposal's probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project); or if the DNS was procured by misrepresentation or lack of material disclosure.

Carol McLelland
Environmental Coordinator

May 4, 2017
Date

OTHERS TO RECEIVE THIS DOCUMENT:
State Department of Ecology
Army Corps of Engineers
Attorney General
Muckleshoot Indian Tribe

cjk 5/4/17

BACKGROUND INFORMATION

Property Owner:	Bellevue Fire Department		
Address:	766 Bellevue Way SE		
City/State/Zip:	Bellevue, WA 98004	Phone:	
Applicant:	King County Department of Information Technology		
Address:	401 5th Ave, 6th Floor		
City/State/Zip:	Seattle, WA 98104	Phone:	206.263.7846
Agent:	Odelia Pacific Corporation – Sarah Telschow		
Address:	1215 4th Ave Suite 1900		
City/State/Zip:	Seattle, WA 98161	Phone:	206.979.6268

Name of Proposed Project: King County PSERN – Bellevue Station #9

Location of Project:	Bellevue, Washington					
Address:	12412 Newcastle Way					
Quarter:	NE	Section:	28	Township:	24	Range: 5
Tax Parcel Number(s):	195182-0080					

Give an accurate, brief description of the proposal's scope and nature:

1. General description:

   The applicant, King County PSERN, proposes to construct a new emergency communications facility at 12412 Newcastle Way, Newcastle, Washington (Parcel Number 195182-0080). King County PSERN is proposing to construct a new 170' tower with associated equipment in support of upgrading the current system.

2. Acreage of site: *1.61 acres*

3. Number of dwelling units/buildings to be demolished: *None*

4. Number of dwelling units/buildings to be constructed: *None*

5. Square footage of buildings to be demolished: *None*

6. Square footage of buildings to be constructed: ~~312~~ *square feet (total project area – 4,793.75 square feet).*

360 equipment building

7. Quantity of earth movement (in cubic yards): *10 cubic yards of cut and 250 cubic yards of fill (260 cubic yards total).*

✓

8. Proposed land use: *Emergency Communications Facility*

9. **Design features, including building height, number of stories and proposed exterior materials:**

   ***King County PSERN** is proposing to construct a new 170' tower with associated equipment in support of upgrading the current system.*

10. Other

Proposed timing or schedule (including phasing, if applicable):

The construction will commence as soon as all applicable permits are obtained.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

At this time, King County PSERN does not have plans for future additions, expansions, or future activity connected with this project. However, in the future, special conditions could necessitate the need for additional antennas and/or equipment at this location.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

King County PSERN and its agents are not aware of any previous environmental information that has been prepared on the project site that would affect this proposal.

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

King County PSERN and its agents are not aware of any application(s) pending governmental approval(s) that would directly affect the property covered by this project.

List any government approvals or permits that will be needed for your proposal, if known.

The King County PSERN - Bellevue Station #9 project requires the following approvals:

- *Conditional Use Permit (CUP) approval*
- *State Environmental Policy Act (SEPA) approval*
- *Clearing and Grading Permit approval*
- *Mechanical Permit approval*
- *Commercial Building Permit approval*

CD permit

Please provide one or more of the following exhibits, if applicable to your proposal. (Please check appropriate box(es) for exhibits submitted with your proposal):

- [ ] Land Use Reclassification (rezone) Map of existing and proposed zoning
- [ ] Preliminary Plat or Planned Unit Development - Preliminary plat map
- [X] Clearing & Grading Permit - Plan of existing and proposed grading
- [X] Building Permit (or Design Review) - Site Plan and Clearing & Grading Plan
- [ ] Shoreline Management Permit - Site Plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (underline one):
Flat, rolling, hilly, steep slopes, mountainous, other:_____

b. What is the steepest slope on the site (approximate percent slope)?

In the area that the telecommunication facility is proposed the steepest slope does not exceed ten percent (10%).

about 5% slope (east-to west)

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The general types of soil found on the site are Alderwood gravelly sandy loam, 8 to 15 percent slopes. Please see the Soil Map in the SEPA Exhibits for more detailed information.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are no surface indications and/or history of unstable soils in the immediate vicinity of the project.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

There will be grading for scarification and recompaction, approximately ten cubic yards (10y³) of cut and two hundred fifty cubic yards (250y³) of fill. Any excess fill will be dispersed on site. The development and construction of the site shall preserve the existing character of the site as much as possible. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

Potential for erosion as a result of clearing & grading activities

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is unlikely. **However, Best Management Practices (BMP's)** for erosion control will be implemented during construction. ***Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.***

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

King County PSERN is proposing approximately 2,925.00 square feet of new impervious surfaces. The percent of site to be covered with new impervious surfaces will be less than five percent (5%).

Standard erosion control GD permit per BCC 23.76

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

All standard erosion control methods will be utilized to reduce or control erosion, or other impacts to the earth. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Air pollution from dirt and sand dissapating from uncovered loads.

During construction, there will be very minor dust and emissions associated with construction machinery/vehicles. There are no significant emissions associated with project operation.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

King County PSERN and its agents are not aware of any off-site sources of emissions or odor that would affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Covered loads per RCW 46.61.655

All standard measures to reduce and/or control emissions during construction will be utilized. These measures may include the regular use of watering vehicles to attenuate dust particles on-site and proper maintenance of all vehicles to limit emissions. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

3. Water

a. Surface:

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The nearest surface water body is Lake Boren, which is over 3,000 feet from the site.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

This project will not require any work over, in, or adjacent to (within 200 feet) of any waters.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

This project will not fill and/or dredge material from surface water/wetlands.

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

This project will not require surface water withdrawals or diversions.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

This project does not lie within a 100-year floodplain. Please see the FEMA Map in the SEPA Exhibits for more detailed information.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

This proposal does not involve any discharges of waste materials to surface waters.

b. Ground:

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn and/or water discharged to the groundwater.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals ...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste materials will be discharged into the ground from septic tanks or other sources.

c. Water Runoff (including storm water):

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The project will not alter or impact the existing storm drainage system. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

This type project does not generate waste materials. Therefore, it is very unlikely that waste materials would enter the ground or surface waters, however all preventive measures will be taken. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

At this time, there are no proposed measures to reduce or control surface water, groundwater, and runoff. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

4. Plants

a. Check or circle types of vegetation found on the site:

X *deciduous tree: alder, maple, aspen, other*
X *evergreen tree: fir, cedar, pine, other*
X *shrubs*
X *grass*
__ *pasture*
__ *crop or grain*
__ *wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other*
__ *water plants: water lily, eelgrass, milfoil, other*
__ *other types of vegetation*

b. What kind and amount of vegetation will be removed or altered?

5-7 trees will be removed.

Twenty-three trees will be removed. Please see Sheet A-1 and Arborist letter regarding tree removal for more detailed information.

c. List threatened or endangered species known to be on or near the site.

No threatened and/or endangered plant species are known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

A landscaping plan has been proposed for this site. A twenty-foot (20') landscape buffer to the north and east. Please see Sheet L-1 for more detailed information.

20' wide native landscape buffer adjacent to fence

Also, 21 new trees to be installed as mitigation. LUC 20.20.520

5. Animals

a. Underline any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:_____
mammals: deer, bear, elk, beaver, other:_____
fish: bass, salmon, trout, herring, shellfish, other:_____

b. List any threatened or endangered species known to be on or near the site.

No threatened and/or endangered animal species are known to be on or near the site.

c. Is the site part of a migration route? If so, explain.

King County PSERN and its agents are not aware of a migration route near the site.

d. Proposed measures to preserve or enhance wildlife, if any:

At this time, there are no proposed measures to preserve or enhance wildlife.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric power will be utilized to operate the antennas and associated electrical equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The subject proposal will not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

At this time, there are no energy conservation features included in the plans of this proposal.

7. Environmental Health

a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

Potential RF exposure below FCC exposure limits. See report by Andrew Thatcher RF Engineer dated 2/2/17.

No such hazards have been identified with other similar installations.

(1) Describe special emergency services that might be required.

No special emergency services will be required for this proposal.

(2) Proposed measures to reduce or control environmental health hazards, if any:

At this time, there have been no measures proposed to reduce or control environmental health hazards.

b. Noise

PSERN: Construction noise, generator noise

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?

There is not any existing noise in the area that would affect this project.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from site.

Project must meet City of Bellevue Noise Ordinance BCC 9.18.

There will be minor short-term noise associated with the construction phase of the project. There will be no new significant noise associated with operation of the project.

(3) Proposed measures to reduce or control noise impacts, if any:

King County PSERN will comply with all state and local ordinances regarding noise.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The subject property is used by the Bellevue Fire Department Station #9. The adjacent properties accommodate residential uses and a Seattle City Light (SCL) electrical transmission easement.

b. Has the site been used for agriculture? If so, describe.

This property has not been used for agriculture.

c. Describe any structures on the site.

There is an existing Fire Station building.

d. Will any structures be demolished? If so, what?

No structures will be demolished.

e. What is the current zoning classification of the site?

The site is zoned R-5 by the City of Bellevue. Please see the Zoning Map in the SEPA Exhibits for more detailed information.

f. What is the current comprehensive plan designation of the site?

SF-H density

The City of Bellevue has deemed this area Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable to this project.

f. Has any part of the site been classified as an "environmentally critical" area? If so, specify.

King County PSERN and its agents are not aware of the subject area for the proposal being classified as "environmentally sensitive".

i. Approximately how many people would reside or work in the completed project?

The tower is unmanned. One (1) to two (2) employees are on-site for an average of four (4) hours of monthly maintenance checks. This check is typically for preventive maintenance purposes. In the event of a problem, a crew is dispatched to the site immediately.

j. Approximately how many people would the completed project displace?

This project will not displace any people.

k. Proposed measures to avoid or reduce displacement impacts, if any:

This project will not displace any people. Therefore, no measures are needed to avoid or reduce displacement impacts.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

dark green →

The tower and all proposed and future antenna/attachments shall be painted Sherwin Williams Rock Garden (SW6195) using a non-reflective finish. Please see the enclosed tower color sample for more detailed information. The equipment building and fencing will be painted to match the fire station. Please see the photo simulations for more detailed information.

9. Housing

a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

No units will be provided by this project.

b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

No units will be eliminated by this project.

c. Proposed measures to reduce or control housing impacts, if any:

This project will not impact housing. Therefore, no measures are needed to reduce or control housing impacts.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed tower will be one hundred seventy feet (170') in height.

b. What views in the immediate vicinity would be altered or obstructed?

The site will be visible. However, the proposed location of the facility will be screened from view by existing trees and proposed additional landscaping. The tower will not impede views of any significant viewscapes such as the lake, mountain views, and/or expansive views. Please see the photo simulations for more detailed information.

Project location to be moved 8-10' south to provide more buffer to neighbors.

c. Proposed measures to reduce or control aesthetic impacts, if any:

dark green

steel gray →

The tower and all proposed and future antenna/attachments shall be painted Sherwin Williams Rock Garden (SW6195) using a non-reflective finish. The equipment building and fencing will be painted to match the fire station. Additionally, existing and proposed landscaping will provide additional measures to reduce and/or control aesthetic impacts to neighbors.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Generally, this proposal will not produce any light and/or glare.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The proposed tower will not require Federal Aviation Administration (FAA) lighting and has been deemed by the FAA to not be an aviation safety hazard. Please see the submitted FAA determination.

c. What existing off-site sources of light or glare may affect your proposal?

There are no existing off-site sources of light or glare that will affect this proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

Generally, this proposal will not produce any light and/or glare impacts. Therefore, no measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

There is a trail to the east that is over 1,000 feet away and Hazelwood Park approximately 2,000 feet away.

b. Would the proposed project displace any existing recreational uses? If so, describe.

This project would not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

This project would not displace any existing recreational uses. Therefore, no measures are needed to reduce or control recreation opportunities.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

King County PSERN and its agents are not aware of any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the project. The Washington Information System for Architectural & Archaeological Records Data (WISAARD) was reviewed and no historic properties including properties listed on the Heritage Barn Register, Washington Heritage Register (State Register), and the National Register of Historic Places were noted near the subject property.

b. Generally, describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

King County PSERN and its agents are not aware of any landmarks, or evidence of historical, archaeological, scientific, or cultural importance to be on or next to the project.

c. Proposed measures to reduce or control impacts, if any:

King County PSERN's facility will not impact historical and/or cultural areas. Therefore, no additional measures are necessary.

14. Transportation

a. **Identify public streets and highways serving the site, and describe the proposed access to the existing street system. Show on site plans, if any.**

The project is located off Newcastle Way. (Please see Vicinity Map Exhibit.)

b. **Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

Not applicable to this project.

c. How many parking spaces would the completed project have? How many would the project eliminate?

2 stalls *On-site parking has been provided.*

c. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

This proposal will not require any new roads or streets.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

This is an unmanned facility and will not require the use of water, rail or air transportation.

d. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The facility will be unmanned. One (1) to two (2) maintenance visits per month is expected.

g. Proposed measures to reduce or control transportation impacts, if any.

There are no traffic impacts associated with these types of facilities as they are unmanned and require infrequent maintenance, therefore no measures are needed to reduce or control transportation impacts.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

This project will not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

This project will not result in an increased need for public services, therefore no measures are needed to reduce or control direct impacts on public services.

16. Utilities

a. Underline utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in immediate vicinity which might be needed.

Telephone service will be provided by the local telephone company. Electrical power will be provided by the local power provider. Water, sewer and natural gas are not required for this project.

Signature

The above answers are true to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Sarah Telschow, AICP

Digitally signed by Sarah Telschow, AICP
DN: cn=Sarah Telschow, AICP, o=Odelia Pacific Corporation, ou, email=stelschow@odelia.com, c=US
Date: 2017.02.10 11:48:19 -08'00'

Signature

02/10/17

Date

City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	**King County Puget Sound Emergency Radio Network (PSERN) -Bellevue Fire Station #9**
Proposal Address:	12412 Newcastle Way
Proposal Description:	To construct a 170-foot tall communication pole with antennas/other attachments and install associated ground-mounted equipment. Ground-mounted equipment will be screened with a fence and plantings. The location is Bellevue Fire Station #9. Site area for the parcel is 70,292 square feet.
File Number:	16-139244-LB
Applicant:	Sarah Telschow for **King County Puget Sound Emergency Radio Network (PSERN)**
Decisions Included:	Process I, Conditional Use (combined with SEPA) Process II, SEPA Determination
Planner:	Carol Hamlin, Senior Planner Carol Hamlin

State Environmental Policy Act (SEPA) Threshold Determination:
Determination of Non-Significance (DNS)

Carol V Helland

Carol V. Helland, Environmental Coordinator
Development Services Department

Director's Recommendation:

Approval with Conditions
Michael A. Brennan, Director
Development Services Department

By Elizabeth A. Stead, Land Use Director

Notice of Application:	August 8, 2016
Notice of Recommendation:	May 4, 2017
SEPA Notice of Decision:	May 4, 2017
SEPA Appeal Deadline:	May 18, 2017
Hearing Examiner Hearing:	May 18, 2017
Vesting for Decision:	2 years from final approval per LUC 20.40.500

For information on how to appeal a proposal, visit the Development Services Center at City Hall, 450 110th Avenue NE or call (425) 452-6800. Comments on State Environmental Act Determinations can be made with or without appealing the proposal within the noted comment period for the SEPA determination. Appeal of the decision must be received in the City's Clerk's Office by 5 p.m. on the date noted for appeal of the decision.

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Attachments:
A - Project Plans
B - Photo Simulations
C - Acoustical Report
D - City of Bellevue, Type 2 Soil Preparation
E - Microwave Path Survey
F - Property Valuation Study
G - Site Justification Letter
H - RF Emissions Response Letter
I - Stamped Flammability Letter
J - Seattle City Light Letter
K - Alternative Sites Analysis

I. REQUEST/PROPOSAL DESCRIPTION

A. Request

The applicant, King County Puget Sound Emergency Radio Network (PSERN), requests Conditional Use approval and threshold review under the State Environmental Policy Act (SEPA) to construct a 170-foot tall communication pole with antennas and other minor attachments and install associated ground-mounted equipment. Ground-mounted equipment will be screened by an equipment building, fence and plantings. The location is the north wooded area of the Bellevue Fire Station #9 parcel. Site area for Fire Station #9 is 70,292 square feet.

The Bellevue Fire Station #9 emergency radio site is critical for emergency communications coverage in the east Lake Washington area. It and the Cougar Mountain site,[1] a similar PSERN facility, will provide the backbone of the emergency radio coverage for first responders in this area. Further, the Bellevue Fire Station #9 site links the Northeast King County Regional Public Safety Communication Agency (NORCOM) and existing Capitol Hill sites, to provide a critical link in the microwave chain supporting the emergency radio network. Without the Bellevue Fire Station #9 site, PSERN states that they will not be able to provide a high level of emergency radio coverage to the first responders that rely on communication in the field in the greater southern Bellevue area.

The current emergency radio system is more than 20 years old and needs to be upgraded to ensure reliability. This emergency radio system was approved by the King County voters in a 2015 levy with over 65% approval.

B. Proposed Description

Communication Objectives

The proposed facility has been located and designed to provide the best possible emergency radio coverage to a large portion of Bellevue and surrounding communities. This area is underserved by the current emergency radio network and is a known hazard to first responders. The height and location of the proposed tower has been optimized to provide microwave links to both Capitol Hill and NORCOM Dispatch on the top of the Bellevue City Hall. The Emergency Radio Network uses redundant microwave as the primary means of communication as microwave links are the most reliable means of communication after a major disaster. Roads can buckle or break during an event, causing fiber or other land-based communication to fail, but these failures will not affect microwaves. In the worst case, antennas may need to be realigned to restore communication.

The monopole will be located in an approximate 1,892 square foot fenced area (43'-6" x 43'-6"), with landscaping outside of the fenced area. There will be a driveway to the east so the monopole and associated equipment can be maintained. Two parking stalls will be provided. The area of the equipment building is 360 square feet (12' x 30').

Facility Specifications

The facility will include the following:

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[1] The Cougar Mountain PSERN facility is scheduled to begin construction summer 2017. It is located at 180th Avenue SE and Cougar Mountain Drive, in unincorporated King County.

- Antennas – PSERN is proposing to attach four (4) omni antennas to the proposed tower. See Sheet A-2.1, Attachment A, for more detailed information.

- Color – The tower and all proposed and future antenna/attachments will be painted dark green using a non-reflective finish. The equipment building and fencing will be painted steel grey to match the fire station. See the attached photo simulations for more detailed information, Attachment B and graphic below.

- Equipment Building – The equipment building will house all of PSERN's equipment and will meet all applicable noise standards. See the enclosed acoustical report, Attachment C.

- Fencing – A wood fence has been proposed around the equipment building to provide additional screening and noise abatement. The fence will be painted to match the fire station building. See Sheets A-2.0 and A-4.4, Attachment A, for more detailed information.

- Generator – PSERN is proposing a 50kw generator with a one thousand (1,000) gallon diesel tank for emergency back-up power. The proposed generator will be located within the proposed equipment building. It will be required to meet applicable city regulations, including fire standards. The generator will also meet all applicable noise standards. See the enclosed acoustical report, Attachment C.

- Landscaping – A landscaping plan has been proposed for this site. A twenty foot (20') landscape buffer at the north and east sides of the fenced area is proposed. See Sheet L-1, Attachment A, for more detailed information.

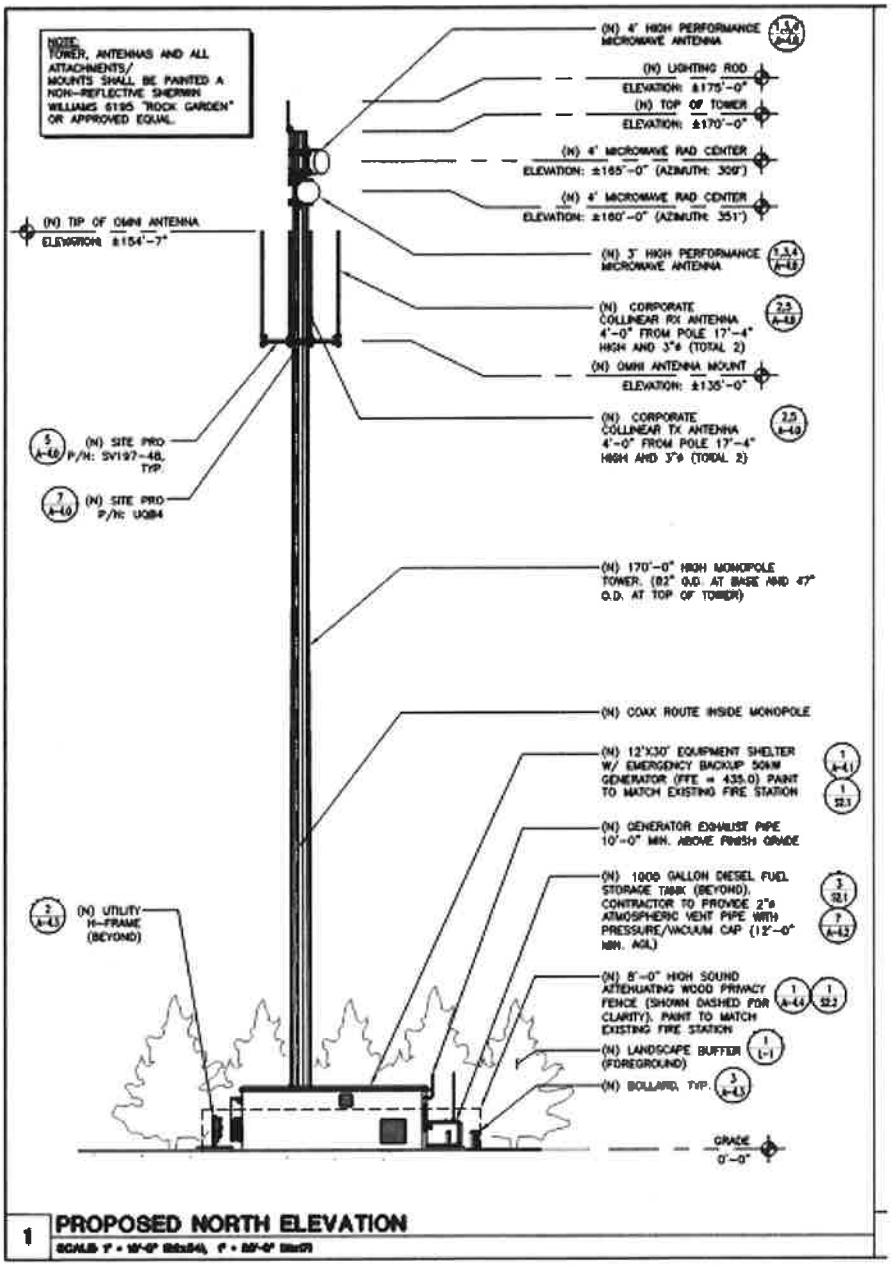
- Microwave Dishes – PSERN is proposing to attach two (2) microwave dishes to the proposed tower. See Sheet A-2.1, Attachment A, for more detailed information.

See Attachment A, Project Plans.

The facility will not be activated until all work included in the project scope and shown on the plans and specifications is completed and inspected. See condition IX.C.2.

PHOTOSIMULATION OF PROPOSAL
LOOKING NW TOWARD THE FIRE STATION

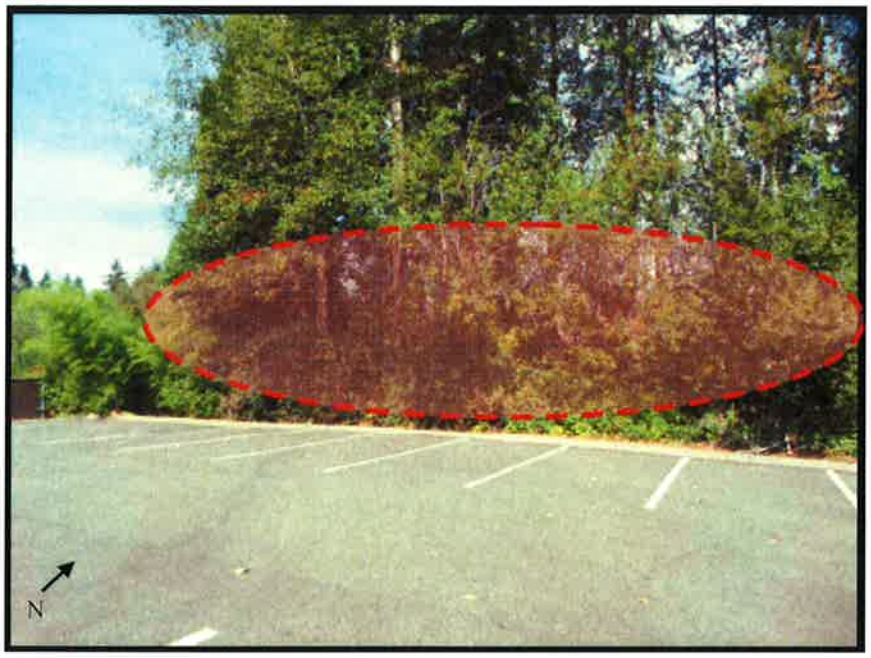
PROPOSAL
NORTH ELEVATION



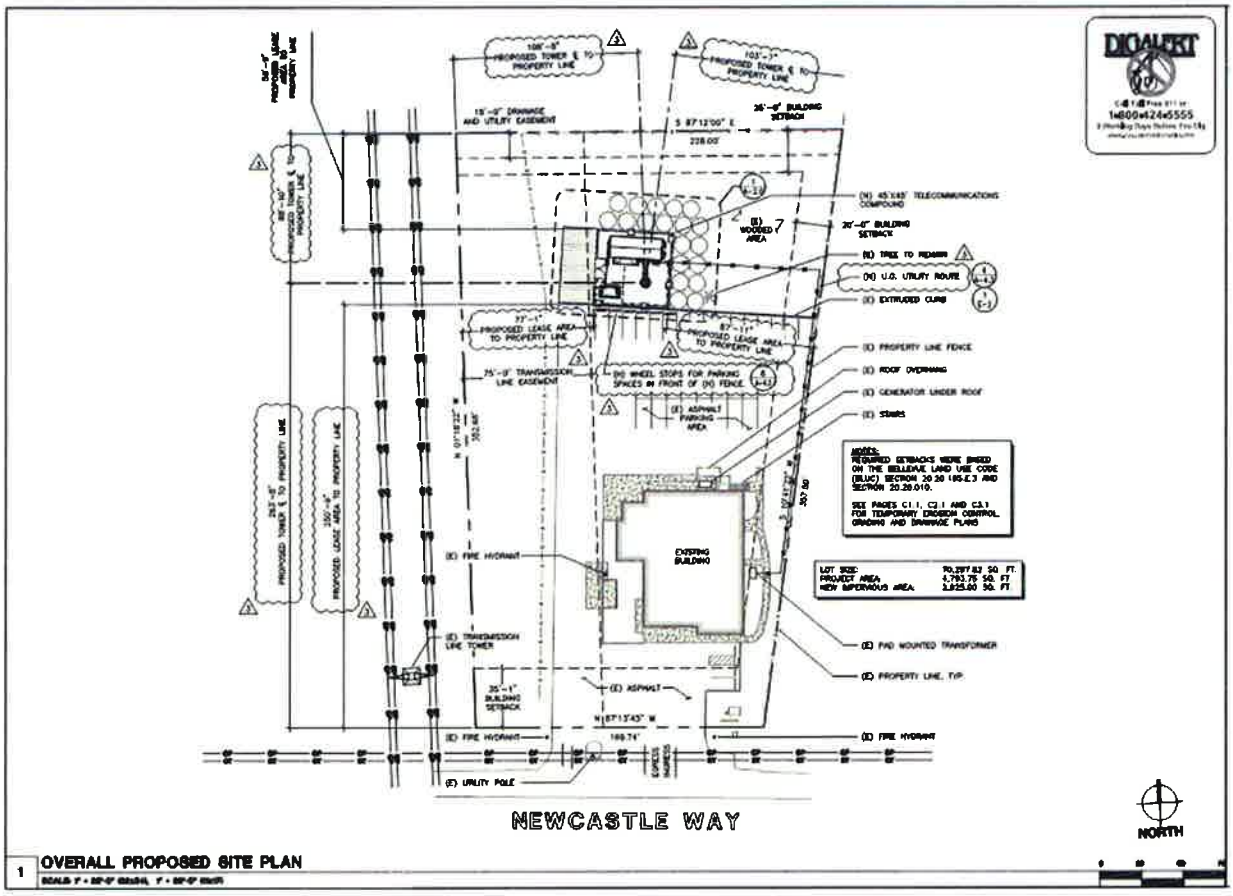
C. Site Design

The proposed monopole is located on the north portion of Bellevue Fire Station #9. It will be located in the wooded portion of the site. The applicant proposes to locate the monopole 88'-10" from the north property line, 103-'7" from the west property line, and 108'-8" from the east property line. The existing fire station and parking will remain. Five to seven (5-7) trees will be removed for the proposal.

AREA OF CONSTRUCTION, LOOKING NORTH



SITE PLAN



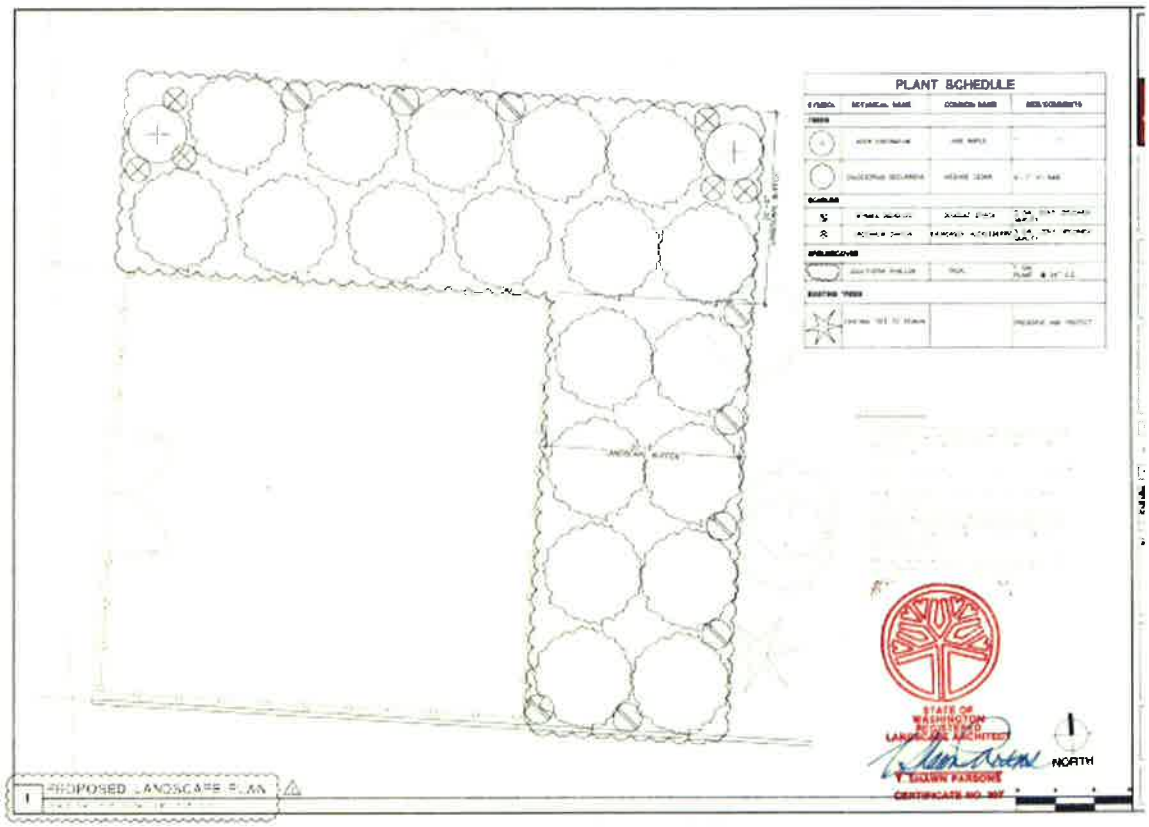
D. Design Intent

The proposed emergency communication facility has been designed to minimize aesthetic impacts to the greatest extent feasible. The tower will be painted a dark green, to blend in with surrounding vegetation. The fence and equipment building will be painted steel grey to match the fire station. See condition IX.C.1. The applicant has proposed to save the majority of the existing trees to maintain the wooded character of the site.

The requested height of 170' is the minimum height necessary for effective functioning of the system. PSERN uses redundant microwave as the primary means of communication to ensure that the system is not impacted by major disasters. Construction of a network consisting of a greater number of smaller less obtrusive facilities is not technically feasible due to the necessary microwave connections to adjacent sites.

Ground-mounted equipment will be located in a covered equipment building. The building has a flat roof and is 10'-51/2" in height. It will be painted steel grey. An 8' fence will enclose the monopole and equipment building. The fence will be painted steel grey.

LANDSCAPE PLAN



The proposed planting plan, with a 20 foot buffer, will provide native trees, shrubs and groundcover to provide screening and visual interest. This plant material includes vine maple, cedar, spirea, huckleberry, and salal.

Proper soil preparation will be required. In addition, new plants will require irrigation.

a. To ensure that interior plants will thrive, the applicant will provide a water schedule to show how plants will be cared for during the establishment period and thereafter.

b. The applicant will include a detail for soil preparation on the clearing and grading permit plans, City of Bellevue, Type 2 Soil Preparation, Attachment D.

See condition IX.B.1, Attachment D.

E. Alternative Sites Considered

The search for an adequate site for the King County PSERN emergency communications facility in this area of King County started in June 2014. The subject area of Bellevue/Newcastle was important in the King County PSERN design due to

the City of Newcastle Police Department indicating that they were experiencing coverage/communications issues in this area of Newcastle and Bellevue. The Bellevue Station #9 site location was selected due to the following:

- A facility in this location and height could provide the necessary emergency radio signal coverage to Bellevue and the surrounding areas – resolving an urgent and ongoing issue of poor communication for first responders in the immediate vicinity.
- A facility in this location and height could achieve necessary microwave links to downtown Bellevue and Capitol Hill.
- This location compared to all alternatives reviewed provided the best overall emergency communications.

The subject property (Bellevue Fire Station #9) is zoned R-5, as well as, the adjacent City of Bellevue residential neighborhoods. The adjacent zoning in the City of Newcastle is also residential. The nearest non-residential zones are the Office (O) and Community Business (CB) to the east in the City of Newcastle. Multiple alternative sites were reviewed as possible locations for the PSERN tower. Sites were evaluated in Seattle, Mercer Island, Newcastle and additional possibilities in Bellevue. The map below documents the locations that were evaluated. Attachment K provides further information about each site.

Aerial Map Showing Alternatives Reviewed and Locations

The proposed project is to construct a new 170-foot tall communication pole with associated ground-mounted equipment. This proposal requires prior Conditional Use approval since it is a new wireless communication facility (monopole) in a residential zoning district (LUC 20.20.195.C.1.c). A Conditional Use application requires a Process I

decision (LUC 20.35.015). For a Process I application, the Director of Development Services issues a recommendation to the Hearing Examiner. The Hearing Examiner holds a publicly noticed hearing and issues a decision within 10 working days. The Hearing Examiner decision is appealable to the City Council.

Any modification to the final approval after construction shall be documented as an Amendment to this Conditional Use per LUC 20.30. The modification will be processed as a new application, an Administrative Amendment to the previously approved Conditional Use or a Land Use Exemption. The applicant shall demonstrate compliance with the Land Use Code. Any modification of the project design must be reviewed for consistency with the design intent. See condition IX.A.1.

Under Land Use Code 20.40.500, the vested status of the Conditional Use approval shall expire two years from the date of the City's final decision, unless a completed building permit application is filed before the end of the two year term. Upon issuance of a building permit, the vested status of a land use permit or approval shall be automatically extended for the life of the building permit. See condition IX.A.2.

II. SITE DESCRIPTION, ZONING AND LAND USE CONTEXT

A. Site Description

The project is located on a 70,292 square foot parcel in South Bellevue, adjacent to the City of Newcastle. The subject parcel is the location of Bellevue Fire Station #9. The station is located on the approximate south 2/3 of the parcel; the proposal is located on the approximate north 1/3 of the site. The northern 1/3 of the site is currently wooded with a parking lot for the station. The site has a gentle slope (east to west) of about 5%. The parcel also has native vegetation along the side property lines. Seattle City Light has an easement over the eastern 75' of the site.

AERIAL PHOTOGRAPH

B. Zoning

The site is zoned Single Family R-5 and is with surrounded by single family zoned neighborhoods.

The following are the adjacent land uses and zoning to the site:

- North: Single Family, R-5
- South: City of Newcastle, Single Family, R-4
- East: Single Family, R-5
- West: Single Family, R-5

ZONING MAP

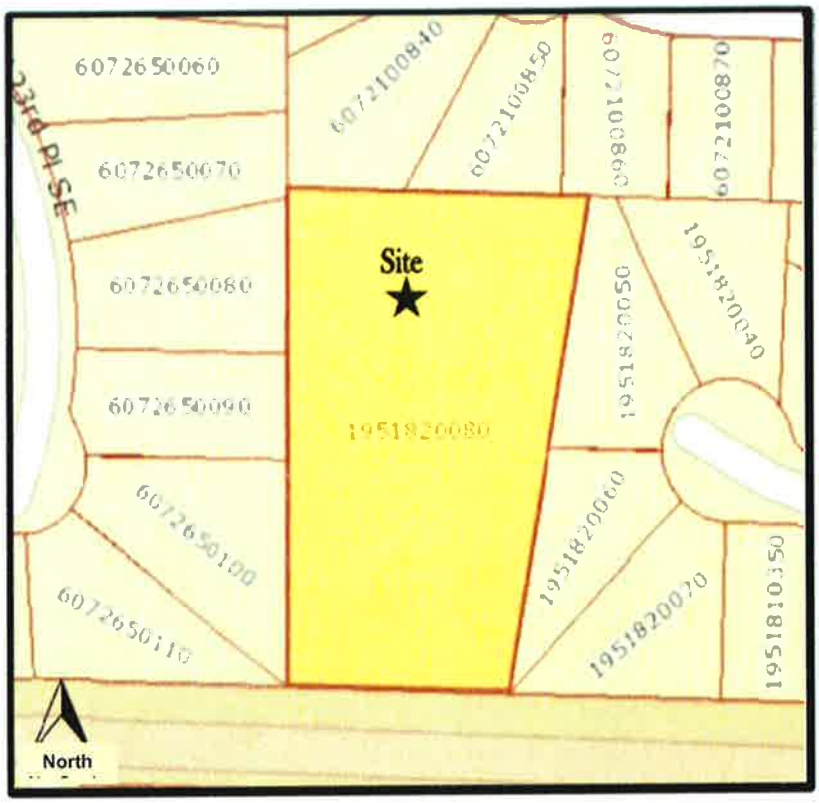
C. Land Use Context

The project is located on a 70,292 square foot parcel in South Bellevue, adjacent to the City of Newcastle. Bellevue Fire Station #9 is located on this parcel (constructed in 1975). The fire station is located on the southern 2/3 of the site. Behind the fire station is a paved parking area for the station. The northern 1/3 is the location of the proposed PSERN monopole.

Single family neighborhoods surround the site – on the north, west and east. These neighborhoods are within the City of Bellevue. To the south of the fire station are single family homes within the City of Newcastle. About ½ mile to the west is the Newcastle shopping area with numerous shops and services. And, to the east about ¼ mile is a new school adjacent to Newcastle Way within the City of Newcastle.

Seattle City Light (SCL) towers are located in an easement (75' wide) to the east of the project area on the Bellevue Fire Station #9 parcel.

PARCEL MAP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North

III. PUBLIC NOTICE, COMMENT AND RESPONSE

On September 29, 2016, Notice of Application was mailed to all property owners within 500 feet of the project site. A Public Information Sign for this proposal was installed on adjacent public right-of-way. A public meeting was held on November 10, 2016. Nine (9) members of the public attended the meeting. Questions included concerns about health effects, aesthetics, noise impacts and property values. The City received several phone calls/emails/letters from adjacent neighbors with concerns, including those mentioned at the public meeting.

The following is a list of neighbor concerns and City response:

A. Property Values

How will the tower affect property values? Market studies of residential home sales indicate that close proximity to a tower reduced home prices between 15% and 21%. Surveys of home buyers indicate a preference to purchase a home without nearby towers. Those with young children were especially unsure about future health problems. The cumulative effects of multiple nearby towers on citizens must be considered in terms of decreased property values.

Response:

King County PSERN retained the services of Integra Realty Resources to provide a market study of potential market value impacts of a tower on residential properties. Integra Realty Resources reviewed the proposed facility and determined the following: "Based on the preceding valuation analysis and subject to the definitions, assumptions, and limiting conditions expressed in the report, it is our opinion that there is no discernable negative impact on single-family home values resulting from the presence of the subject telecommunication tower." See Attachment F - Property Valuation Study.

Additionally, City Codes do not directly address property values. However, through application of the Wireless Communications Facilities section of the Land Use Code (Section 20.20.195), applicants are required to minimize the visual and aesthetic impacts to surrounding neighborhoods and to ensure that Radio Frequency (RF) emissions meet Federal Communication Commission (FCC) standards.

B. Benefit to the Neighborhood and Cities of Newcastle and Bellevue

How will this project benefit our immediate neighborhood? How will the cities of Newcastle and Bellevue benefit from the tower location in our neighborhood?

Response: The project will benefit the immediate neighborhood by ensuring that ongoing issues of poor communication to first responders in this area are resolved. With this project, emergency radio communications will be significantly improved within the City of Bellevue, City of Newcastle, as well as, King County. See Attachment G - Site Justification Letter.

C. RF Emission Measurements

Were any baseline RF emission measurements recorded before other tower projects were constructed? If not, why was this not done?

Response: The applicant did not provide analysis for RF emissions for other tower projects prior to construction. For this project, there were no RF baseline measurements conducted prior to submitting this proposal for review. Following the guidance of Federal Communications Commission Office of Engineering and Technology (OET) Bulletin 65, compliance for a given site may be performed through either direct measurements or via prediction methods as outlined in OET 65. A report calculating the RF emissions from this site was prepared by A.H. Thatcher in February 2017. The conclusion of this report is that the maximum contribution from the proposed PSERN site is below the FCC general public exposure limit. See Attachment H. The applicant will be required to perform post-installation radio frequency emission measurements (upon completion and 6 months thereafter) to document that the project complies with FCC requirements. See condition IX.C.3.

D. Taxpayer Dollars

How much has been spent so far in taxpayer dollars and what will the project cost overall?

Response: The project has spent just under $9 million for the period of 7/1/2015-12/31/2016. Taxpayers approved funding for just under $273 million for the total project costs.

E. Compensation

Will property owners receive any compensation for 'damage' to their property?

Response: No compensation will be provided. The pole will be located on City owned property and will not have any direct effect on or damage to adjacent properties.

F. Choice of Installation Type

Who decided this type of installation was the best option to provide emergency communication for the Factoria area?

Response: King County Puget Sound Emergency Radio Network (PSERN) and their associated experts determined the type of installation required to meet their needs and to address ongoing issues of poor communication to first responders in this area.

G. Impact of RF emissions on Bats, Birds and other Mammals and Scientific Evidence

What is the impact of RF emissions on bats, birds and other mammals? What scientific evidence can be provided to indicate safety for these creatures?

Response: The scientific evidence supports the conclusion that RF exposure does not affect reproduction and development. Birds nesting at the top of the tower are not exposed if behind the antennas. Birds flying to/from the tower would have a negligible exposure as

they would only be in front of the antennas for a few seconds at a time. See report by Andrew H. Thatcher dated February 2, 2017, Attachment H.

H. Other Options for Location

What other options for location were considered and why were they rejected?

Response: Ten (10) other sites were considered for the location of this facility. These alternative locations ranged from Issaquah to Mercer Island to Capitol Hill. Reasons that these sites were rejected included: the microwave paths could not be achieved, the elevation was too low, coverage area could not be achieved, and/or moratorium/restrictions prohibited the proposal from moving forward. See Attachment K, Alternative Sites Analysis.

I. Potential Collapse/Flammability of Cell Towers

The potential for the collapse of cell towers poses a risk of not only property damage but also personal injury or death to citizens. The construction of towers with many components increases the risk of failure of the structure. You-Tube videos show towers burning as they collapsed. There is also the potential for explosion of large fuel storage tanks with tower collapse.

Response: The applicant submitted a letter dated February 6, 2017 by Valmont Structures (recognized in engineered wireless communication structures). The letter states that due to the non-flammability of the steel and zinc, the monopole presents no risk of catching fire under normal operating circumstances. See Attachment I for more information. The proposal will meet all city, state and federal requirements for installation and operation.

J. Federal Regulatory Concerns

It is unfortunate the FCC has allowed runaway construction of towers without independent oversight. The exact location and total numbers of towers is often unavailable to the public. Sadly, the Telecommunications Act of 1996 signed by President Clinton denied all States and local governments of the right to protect citizens from any adverse health effects due to radio frequency/microwave radiation emissions. The levels of RF radiation accepted by the FCC are 10 to 15,000 times higher than the levels rated safe in other countries.

Response:
This comment accurately describes how local government authority to control RF radiation has been preempted by the federal government. The proposed facility will be required to comply with the FCC guidelines for human exposure to radio frequency, and PSERN will be required to monitor RF radiation to ensure that the guidelines are met after the facility is operational. See report by Andrew H. Thatcher dated February 2, 2017, Attachment H.

K. Additional Antennas on Tower

Will this tower have the ability for additional antennas by cellular companies?

Response: Yes, however at this time there are no plans to add additional antennas.

L. International Association of Fire Fighters

The International Association of Fire Fighters opposes the use of fire stations as base stations for any towers or antenna installations. Please refer to their organization website for details.

Response: See International Association of Fire Fighters' (IAFF) website link: http://www.iaff.org/hs/Facts/CellTowerFinal.asp. The above referenced 2004 position refers specifically to, "...cell towers commercial wireless infrastructure on fire department facilities...". The King County PSERN facility is for emergency radio services which are different from commercial wireless facilities/cell towers. The City of Bellevue Fire Department is in support of the project and has raised no concerns.

M. Monopole/Generator Location

The monopole and generator are too close to our houses.

Response: The applicant moved the location of the monopole and equipment building 8-10 feet to the south of the originally proposed location to provide more buffer to the neighbors.

N. Tower height

Why does the tower need to be 170 feet tall?

Response: The Emergency Radio Network uses redundant microwave paths as the primary means of communication. Microwave links are the most reliable means of communication after a major disaster: roads can buckle or break, causing fiber or other terrestrial communication to fail, but these failures will not affect microwave. The height and location of the proposed tower are necessary to provide microwave links to Bellevue City Hall and Capitol Hill (Seattle).

O. Noise

Neighbors expressed concerns about the potential noise from the facility.

Response: Noise levels are regulated by the City of Bellevue Noise Ordinance BCC 9.18. The applicant is proposing to install an equipment building, generator, and sound wall (8' fence). The generator runs weekly for maintenance, this is typically scheduled for mid-day during the week. The maximum noise level during the day is expected to be 37 dBA (under the maximum permissible noise level of 55 dBA). The maximum noise level expected from this facility at night is expected to be 37 dBA (under the maximum permissible noise level of 45 dBA). During maintenance, the maximum noise level is expected to be 59 dBA (under the maximum permissible noise level of 65 dBA for an increase in noise level for a short duration for five minutes in any one hour period. See Attachment C, Acoustical Report. See condition IX.A.7.

P. Interference

Neighbors expressed concerns about how the emergency radio will affect telephone, television signals, cardiac pace makers, radio, Wi-Fi, etc.

Response: The Federal Communications Commission (FCC) licenses all communications by radio, television, cell phones, satellite and cable services to ensure there are no issues with interference. King County PSERN is licensed by the FCC. Emergency radio will not impact and/or affect telephone, television signals, cardiac pace makers, radio, Wi-Fi, etc.

Q. Emissions and Health

Neighbors expressed concerns about the effects of Radio Frequency (RF) energy, including effects to children/adults and mammals. Furthermore, neighbors expressed concerns about the cumulative impact of additional antennas mounted on the pole.

Response:
As part of the application, the applicant submitted required power density calculations and other information to demonstrate that the facility would comply with FCC requirements. See RF Emissions Report, Attachment H. The applicant will be required to perform post-installation radio frequency emission measurements (upon completion and 6 months thereafter) to document that the project does not exceed FCC requirements. See condition IX.C.3.

R. Seattle City Light

Neighbors were concerned if Seattle City Light (SCL) had any issues with the proposal. Also, neighbors expressed concerns that they already have the SCL high voltage system and "enough is enough."

Response: In a letter dated February 13, 2017, Seattle City Light stated that they have no issues and/or concerns with the proposed PSERN facility and associated tower. See Attachment J. The code allows the placement of communication towers with prior Conditional Use Permit approval.

S. Loss of Aesthetics

Neighbors expressed concern about the loss of aesthetics to the neighborhood for the monopole and equipment building.

Response: The applicant has taken measures to mitigate the aesthetic impacts by proposing to paint the pole dark green to blend with the trees and paint the equipment building and fence steel grey to match the fire station.

T. Tree Removal

Neighbors expressed concern about the loss of trees: impact to the aesthetic appeal of the neighborhood and increased potential wind impacts.

Response: The applicant will be removing 5–7 trees for the proposal. This is the minimum necessary for construction of the facility. The proposed trees to be removed will be within a portion of the site interior. Remaining trees onsite will provide wind shelter. The applicant's proposal meets code requirements for tree retention. Landscaping will be provided adjacent to the sound fence. Such landscaping includes the addition of 21 trees as mitigation for the tree removal.

U. Fumes from the Generator

One neighbor expressed concern about fumes from the proposed generator, in addition to, fumes from the fire station generator.

Response: The applicant has been made aware of this concern and will attempt to lessen this odor.

V. SUMMARY OF TECHNICAL REVIEWS

City departments (Transportation, Utilities, Fire, Clear/Grade - Development Services Department) reviewed the proposal and had no concerns. The applicant will be subject to standard permit requirements.

VI. STATE ENVIRONMENTAL POLICY ACT (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the project. The Environmental Checklist together with information submitted (in the official file) adequately discloses expected environmental impacts associated with the proposed Conditional Use approval. The City codes and requirements, including SEPA, Land Use Code, Noise Ordinance, Building Code and other construction codes adequately mitigate expected environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA).

Adverse impacts which are less than significant are typically subject to City Codes or Standards which are intended to mitigate those impacts. Where such impacts and regulatory items correspond, further documentation is not necessary. For other adverse impacts which are less than significant, Bellevue City Code, Section 22.02.140, provides substantive authority to mitigate impacts disclosed through the environmental review process.

The following amendments to the Environmental Checklist are provided by the City of Bellevue:

A. NOISE

As conditioned, short term impacts related to noise generation as a result of the construction will be minimized. Noise related to construction is allowed from 7:00 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday, except for Federal holidays and as further defined by the Bellevue City Code. Exceptions to the construction noise hours limitation contained in the Noise Control Code MAY be granted pursuant to 9.18.020.C.1 when necessary to accommodate construction which cannot be undertaken during exempt hours. Written requests for exemption from the Noise Control Code must be submitted two weeks prior to the scheduled onset of extended hour

construction activity. Such request shall include a noise analysis prepared by a noise consultant, including recommendations for achieving the noise limitations of the Noise Ordinance for new construction. See condition IX.A.3. The use of best available noise abatement technology consistent with feasibility is required during construction to mitigate construction noise impacts to surrounding uses. See condition IX.A.4.

The applicant is proposing to install an equipment building, generator, and sound wall (8' fence). The generator runs weekly for maintenance and is typically scheduled for mid-day during the week. The maximum noise level during the day is expected to be 37 dBA (under the maximum permissible noise level of 55 dBA). The maximum noise level expected from this facility at night is expected to be 37 dBA (under the maximum permissible noise level of 45 dBA). During maintenance, the maximum noise level is expected to be 59 dBA (under the maximum permissible noise level of 65 dBA for an increase in noise level for a short duration for five minutes in any one hour period. See condition IX.A.7. The applicant submitted an Acoustical Report that states noise levels will be below maximum allowed. See Attachment C.

B. AIR POLLUTION

There is the potential for air pollution from dirt and sand dissipating from unsecured loads of construction vehicles and heavy construction equipment. While on city streets, construction vehicles shall meet the requirements of the Revised Code of Washington 46.61.655 for covered loads. See condition IX.A.5.

C. RADIO FREQUENCY RADIATION

The applicant hired an expert in the field, Andrew H. Thatcher, MSHP, CHP,[2] to evaluate this project for potential impacts of radiofrequency radiation to human exposure and compliance with Federal Communications Commission (FCC) Guidelines.

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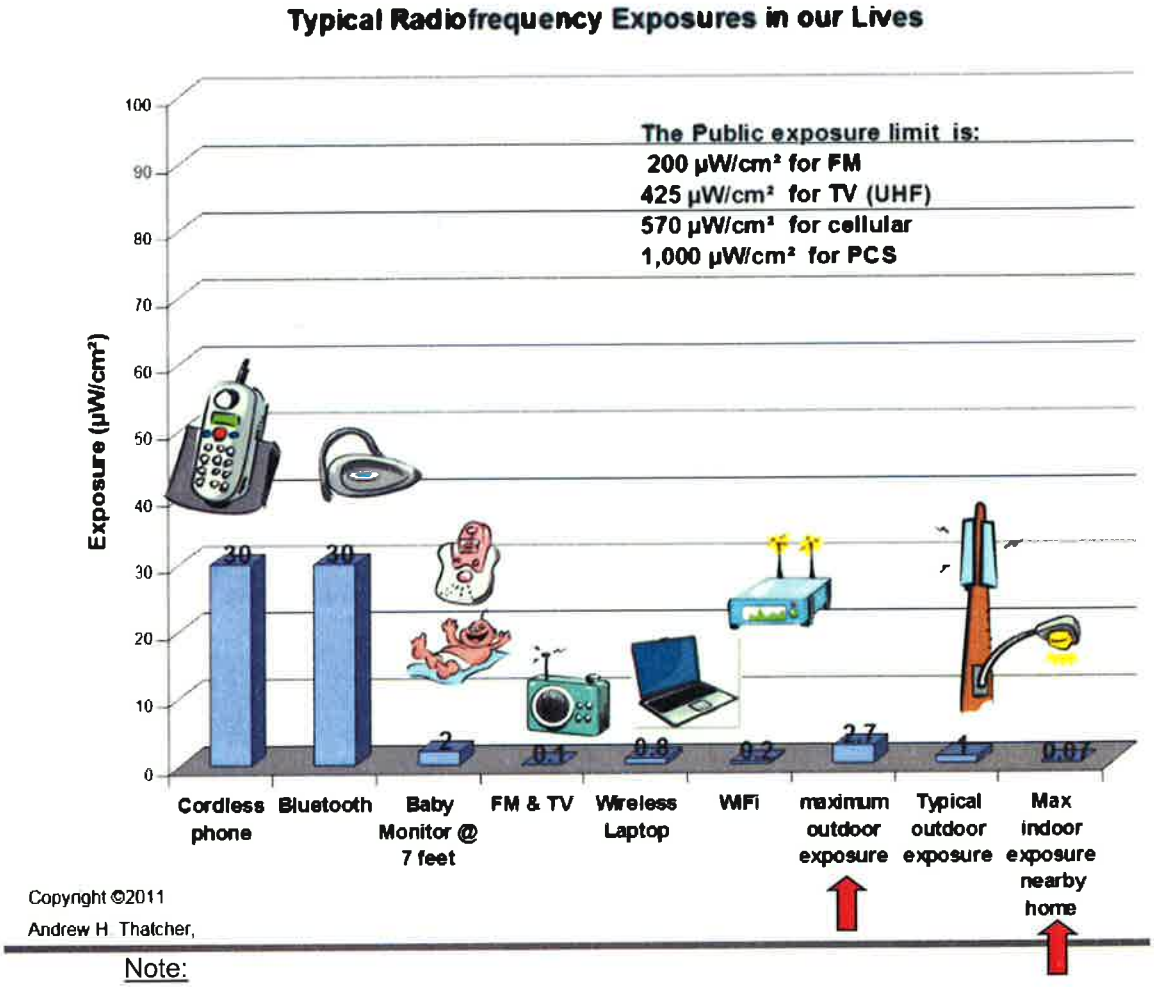
[2] MSHP = Masters of Science in Health Physics
CHP = Certified Health Physicist



Note:

↑= Indicates PSERN exposure at 2.7 for maximum outdoor exposure and 0.07 for maximum indoor exposure at nearby home, in micro Watts per square centimeter. This is a general table for typical radiofrequency exposures and does not take into consideration the contributions from the T-Mobile or Sprint antennas.

According to Andrew H. Thatcher, for the RF exposure measurements, the PSERN site is somewhat complicated since, in addition to the PSERN site, there is also the Sprint site on the Seattle City Light transmission lines and a T-Mobile base station located about 660' away from the PSERN site. Per Andrew H. Thatcher:

> " ... the maximum ground level predicted exposure is 0.023 mW/cm² or 2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123 Ave SE and Newcastle Way."

Summary of Findings by Andrew H. Thatcher dated February 2, 2017

Based on a calculation specified by the Federal Communication Commission, the maximum level of public exposure to RF signal from the proposed antennas will be a fraction of FCC exposure limits. Specifically, the maximum ground level predicted exposure is 0.023 mW/cm² or

2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123rd Avenue SE and Newcastle Way. The maximum contribution from the proposed PSERN site is 0.0027 mW/cm^2.

Technical Data

This report is based on engineering data for the project provided by S. Telschow of Odelia Pacific Corp. No other RF transmitting facility is within 2,000 feet of the proposed facility. The proposed facility consists of a RFI Wireless CC807 series antenna transmitting at 90' in height and a pair of microwave transmitters transmitting in different directions at heights of 165' and 160'. The antennas are the Commscope VHLP3-11W-6WH/A at 160' and the Commscope HPX4-107-P3A/B at 165'. Note that the input power used for the RFI antenna was the 500 W maximum input power recommended by the manufacturer with a coax line loss of 1.7 dB included. The input power for the microwave antennas was assumed to be 1 W with the respective gains included in the EIRP calculations.

Sprint data for their Clearwire site near 12412 Newcastle Way on the Seattle City Light tower was provided by S. Gerdts, RF engineer for Sprint on 2/2/2017. The existing antenna is a Kathrein KAT87DEGXXPOL and operates at 2600 MHz. Data for this older antenna is no longer available so an antenna with similar propagation characteristics was selected (Commscope DBXLH-8585B-VTM). The T-Mobile antenna is located at the corner of 123rd Avenue SE and Newcastle Way. T-Mobile data was provided by F. Morton, RF Engineer for T-Mobile on 2/1/2017. The T-Mobile antenna used is a TMBXX-6516-R2M and operates at the 2100 MHz and 1900 MHz frequencies. Details on the power levels used and antenna height is provided in Table 2 of Attachment H.

Basis of Calculations

Equation 6 of OET Bulletin 65[3] is used as the basis for the calculations as it considers a truly upper limit prediction of power density in an outdoor environment in which 100% of incoming radiation is assumed to reflect off a ground surface, resulting in a doubling of the predicted field strength and a four-fold increase in power density. The signal levels inside buildings will be substantially lower than those calculated using the FCC model because of the substantial absorption of RF energy by building materials.

Discussion

The RF signal levels from the proposed installation will be a tiny fraction of FCC exposure limits at any place of public access, and from the point of view of FCC exposure limits are entirely negligible. The biological effects of RF energy have been extensively studied, and there are several thousand reports in the scientific literature on this subject. These reports have been critically reviewed by numerous independent panels, most recently the IEEE (formerly Institute of Electrical and Electronics Engineers) and the International Commission on Nonionizing Radiation Protection. These groups have affirmed existing health standards, or have developed and proposed standards for exposure to RF energy that are broadly similar to the FCC limits.

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[3] Federal Communications Commission Office of Engineering and Technology (OET). Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 65. 1997.

For further information, the Federal Communications Commission (FCC) maintains a World Wide Web site at http://www.fcc.gov. A general information sheet about possible health and safety issues regarding radiofrequency energy is at: http://www.fcc.gov/oet/rfsafety/cellpcs.html

Conclusions/Recommendations

The maximum contribution from the proposed PSERN site is 0.0027 mW/cm² which is below the FCC general public exposure limit. The applicant will be required to perform post-installation radio frequency emission measurements (upon completion and 6 months thereafter) to document that the project complies with FCC requirements. See condition IX.C.3.

VI. CHANGES TO PROPOSAL DUE TO STAFF REVIEW

Changes to the proposal as a result of staff review include:

- Due to concerns of the neighbors, the applicant moved the monopole and leased/fenced area 8-10' south of the original location adjacent to the parking lot for the fire station.

VII. DECISION CRITERIA

The proposal is consistent with the decision criteria for a Conditional Use Permit per Land Use Code 20.30B.140, as discussed below.

The City may approve or approve with modifications an application for a Conditional Use Permit if:

A. The conditional use is consistent with the Comprehensive Plan;

The proposed King County PSERN project is consistent with the general goals, objectives, policies and standards of the City of Bellevue Comprehensive Plan. The proposed facility meets the City of Bellevue Comprehensive Plan **Utilities** Element as follows:

UT-20: Coordinate emergency preparedness and response with local and regional utility partners.

Finding: The proposal is to enhance the emergency response for the Puget Sound Emergency Radio Network. This area of the city is underserved by the current emergency radio network and is a known hazard to first responders. The height and location of the proposed tower has been optimized to provide microwave links to both Capitol Hill and NORCOM Dispatch on the top of Bellevue City Hall. This proposal furthers policy UT-20 by providing an enhanced emergency radio network which was approved by King County voters in 2015.

The proposed facility meets the City of Bellevue Comprehensive Plan **Neighborhood** Goals and Policies which are as follows:

N-2: Ensure police, fire and emergency services provide high levels of public

safety that respond to growth and changing community needs.
N-4: Plan and prepare for the response, recovery, and mitigation of potential disasters and hazards.

Finding: The proposed PSERN emergency communication facility will ensure that the City of Bellevue and surrounding cities and areas within King County will have the highest level of public safety by providing police, fire and other emergency services with the critical communication that is needed in order to best serve and protect the public. This facility will provide necessary communications during emergencies and disasters. The proposed microwave links provide the most reliable means of communication after a major disaster.

The proposed facility adheres to the City of Bellevue Comprehensive Plan **Capital Facilities** Goals and Policies which are as follows:

CF-2: Plan for the long-term renewal or replacement of aging capital facilities as needed to maintain target service levels.
CF-17: Require essential public facilities to be sited and designed according to city standards and criteria in order to minimize potential impacts to the community, while recognizing the public importance and difficult-to-site nature of such facilities.
CF-18: Participate in inter-jurisdictional efforts to site countywide or statewide essential public facilities. Pursue agreements among jurisdictions to mitigate against the disproportionate burden that may fall on the jurisdiction which becomes the site of a facility.
CF-20: Work to site or expand essential public facilities in ways that equitably balance social, environmental, and economic impacts to achieve citywide and regional planning objectives.

Finding: The proposed PSERN emergency communication facility is an inter-jurisdictional effort throughout King County to upgrade the current King County system that is more than 20 years old and must be upgraded to ensure reliability. The proposed emergency communication facility has been designed and located in order to be the least intrusive while still providing necessary services. The tower will be painted to blend in with surrounding vegetation, the fence and equipment building will be painted to match the adjacent fire station (on the same lot), and additional landscaping has been proposed. The siting of these facilities has been designed throughout King County and Bellevue does not have a disproportionate burden. The proposed enhancement of emergency communications has been located and designed in order to balance social, environmental, and economic impacts to the community while achieving citywide and regional emergency communication needs.

B. The design is compatible with and responds to the existing or intended character, appearance, quality of development and physical characteristics of the subject property and immediate vicinity;

Finding: The proposed emergency communication facility has been designed and located in order to be the least intrusive possible, while still providing necessary critical communication services. The tower will be painted to blend in with surrounding vegetation, the fence and

equipment building will be painted to match the adjacent fire station, and additional landscaping has been proposed. The location of the proposed monopole is at an existing fire station which is a non-residential public facility in the neighborhood. By locating on the fire station parcel, the proposal will be consistent with the non-residential use of the property. There are adjacent utility facilities by Seattle City Light which are consistent with the non-residential use of the property.

C. The conditional use will be served by adequate public facilities including streets, fire protection, and utilities;

Finding: The proposed conditional use will be served by adequate public facilities, including streets (Newcastle Way), fire protection (located at Fire Station #9) and utilities (standard utilities are already serving the parcel with Fire Station #9). Furthermore, the proposed facility is a direct public benefit providing critical emergency communication services to the surrounding area and within the entire network.

D. The conditional use will not be materially detrimental to uses or property in the immediate vicinity of the subject property; and

Finding: The proposed emergency communication facility has been designed and located to be the least intrusive possible while still providing necessary services. As conditioned, the proposed facility will not be materially detrimental to uses and/or property in the immediate vicinity of the project. The monopole will be painted dark green to blend with the adjacent wooded environment. And, the equipment building/fence will be painted to match the fire station. The applicant moved the facility 8-10 feet south toward the fire station and parking lot curb to provide additional buffer to the adjacent neighbors. With this revision, the proposal has setbacks of approximately 88'-10" to the north property line, 103'-7" to the west property line and 108'-8" to the east property line. The additional 8-10 feet will provide an even more generous setback to adjacent properties. The project is conditioned to the submitted plans. See condition IX.A.6. The proposal will meet all required city codes and regulations, state requirements for covered loads, and FCC requirements. According to the submitted property valuation report, property values will not be affected by the installation of this facility.

E. The conditional use complies with the applicable requirements of this Code.

Finding: As conditioned, the proposed emergency communication facility complies with applicable requirements of the Land Use Code for wireless communication facilities (LUC 20.20.195). Further, the proposal meets specific Land Use Code requirements applicable to non-exempt wireless communications facilities per LUC 20.20.195.D, as summarized below.

1. **Height (LUC 20.20.195.D.1):** The requested height of 170' is the minimum height necessary for effective functioning of the system. PSERN uses redundant microwave as the primary means of communication. The microwave path from Bellevue Fire Station #9 to the adjacent sites (NORCOM on the top of the Bellevue City hall and Capitol Hill) requires the 170' height in order to clear the height of trees fairly close to the proposed site. Construction of a network consisting of a greater number of smaller less obtrusive facilities is not technically feasible due to the necessary microwave connections to adjacent sites.

Microwave communication is not strictly line of site, and near line of site obstructions affect the performance of the link. The Fresnel zone is an industry standard that determines the distance around the microwave path that must remain clear of obstruction. In this case, the Fresnel zone is one of the technical considerations to determine required tower height. Further, the system is being engineered to perform for a 20-year life span. All of these factors taken together drive the 170' tower height. See Microwave Path Survey, Attachment E, for more detailed information.

2. **WCF Location and Design**

    a. **Preferred Location (LUC 20.20.195D.2.a):** The proposal is located within a single family zoning district (R-5), which is the least preferred location out of the four location preferences according to the siting criteria of LUC 20.20.195.D.2.a. While non-residential property would be a preferred location, no such option exists given the need for a targeted microwave path. This location compared to all alternatives reviewed provided the best overall emergency communications, and it is located on a property that is developed with a non-residential use (Fire Station #9). See Alternative Sites Analysis, Attachment K.

    b. **Preferred System Design (LUC 20.20.195.D.2.b):** The requirements for wireless communication facilities encourage co-locating on existing facilities versus building new monopoles. Due to the single purpose of this facility (a government emergency communications facility) and need for complete autonomy, a monopole is required.

    c. **Minimizing Adverse Impacts (LUC 20.20.195.D.2.c):** The applicant has minimized potential adverse impacts by locating the facility within a wooded area (on fire station property), moving the pole to the south to provide more buffer for neighbors, providing landscaping for screening, and painting the facility to blend more with the surroundings. Furthermore, generator noise will be restricted to meet city code and hours of construction will be restricted. See conditions IX.A, B, C.

3. **Dispersal Limits (LUC 20.20.195.D.3):** The nearest cellular facilities are the Sprint site on the Seattle City Light transmission lines located about 275 feet away and a T-Mobile base station located about 660' away from the PSERN site, according to the RF engineer of record.

4. **Development Standards (LUC 20.20.195.D.4):** The proposal includes the following development standards to ensure that the WCF minimizes adverse impacts, especially visual and aesthetic impacts, on properties adjacent to and in the vicinity of the facility.

    a. **Paint and Screening Techniques (LUC 20.20.195.D.4.a):**
    The proposal includes painting of the monopole a dark green color to blend with the existing trees. The equipment building and fence will be painted steel grey to match the existing fire station building. Landscaping will be provided adjacent to the fence to provide additional screening. See conditions IX.B.1, C.1.

    b. **Design and Configurations to Minimize Visual Intrusion of the Facility (LUC**

20.20.195.D.4.b):
The proposal minimizes visual intrusion of the facility by locating the facility within a wooded area, moving the pole to the south to provide more buffer for neighbors, providing landscaping for screening, and painting the facility to blend more with the surroundings.

c. **Construction and Site Restoration Techniques (LUC 20.20.195.D.4.c):**
The proposal will use appropriate construction techniques per city code and FCC requirements. A clearing and grading permit will be required for disturbance to the site. Temporary erosion control will be required. The applicant will install a fence and landscaping for site restoration.

d. **WCF Equipment (LUC 20.20.195.D.4.d)**
The proposed WCF equipment is the minimum necessary, as noted in a letter dated April 24, 2017 by Robert Gruhn, Construction Manager – PERSN Project, King County Department of Information Technology (KCIT). Such equipment is located within the equipment building and sight screened with an 8' fence.

e. **Co-location (LUC 20.20.195.D.4.e):**
Co-location is not proposed with this project.

5. **Radio Frequency Emissions (LUC 20.20.195.D.5):**
The applicant's RF engineer states that the facility will meet radio frequency emission standards adopted by the Federal Communications Commission (FCC), and PSERN will be required to monitor RF radiation to ensure that the guidelines are met after the facility is operational. See Attachment H.

6. **Setback Requirements for Freestanding Wireless Communications Facilities (LUC 20.20.195.D.6):**
The equipment shelter meets setback requirements for accessory structures in the R-5 zoning district.

7. **Independent Technical Review** (LUC 20.20.195.D.7): No such review was deemed necessary for this application.

8. **Removal of Abandoned Facilities:** Abandoned facilities shall be removed.
See condition IX.A.8.

9. **Removal upon Undergrounding:** Not applicable.

VIII. RECOMMENDATION OF THE DIRECTOR

After conducting the various administrative reviews associated with this proposal, including applicable Land Use consistency, SEPA, and City Code & Standard compliance reviews, the Director does hereby RECOMMEND WITH CONDITIONS the subject proposal.

IX. CONDITIONS OF APPROVAL

The following conditions are imposed under authority referenced:

COMPLIANCE WITH BELLEVUE CITY CODES AND ORDINANCES: The applicant shall comply with all applicable Bellevue City Codes (BCC) and Ordinances including but not limited to:

Clearing and Grading Code - BCC 23.76 Bellevue Development Standards	Janney Gwo, 425-452-6190 jgwo@bellevuewa.gov
Transportation Code - BCC 14.60 Trans. Improvement Program - BCC.22.16	Ryan K. Miller, 425-452-7915 rkmiller@bellevuewa.gov
Right-of-Way Use Permit - BCC 14.30	Tim Stever, 425-452-4294 tstever@bellevuewa.gov
Bellevue Utilities Code - BCC Title 24	Mark Dewey, 425-452-6179 mdewey@bellevuewa.gov
Construction Codes - BCC Title 23	Mark Chang, 425-452-6997 mchang@bellevuewa.gov
Structural Codes – BCC Title 23	Mark Chang, 425-452-6997 mchang@bellevuewa.gov
Land Use Code - BCC Title 20	Carol Hamlin, 425-452-2731 chamlin@bellevuewa.gov
Sign Code - BCC Title 22B	Carol Hamlin, 425-452-2731 chamlin@bellevuewa.gov
Noise Control - BCC 9.18	Carol Hamlin, 425-452-2731 chamlin@bellevuewa.gov
Uniform Fire Code - BCC 23.11	Travis Ripley, 425-452-6042 tripley@bellevuewa.gov

A. GENERAL CONDITIONS

The following conditions apply to all phases of development.

1. Modification to the Conditional Use Plans

Any modification to this approval after construction shall be documented as an Amendment to this Conditional Use: a new application, an Administrative Amendment or as a Land Use Exemption. The applicant shall demonstrate compliance with the Land Use Code in effect at the time of issuance of this report. Any modification of the project design must be reviewed for consistency with the design intent as stated in Section I.B. of this report. Conditions of Approval run for the life of the project.

Authority: Land Use Code 20.30B.175
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

2. Vesting Status of Land Use Approval

Under Land Use Code 20.40.500, the vested status of the Conditional Use approval shall expire two years from the date of the City's final decision, unless a completed building permit application is filed before the end of the two year term. Upon issuance of a building permit, the vested status of a land use permit or approval shall be automatically extended for the life of the building permit.

Authority: Land Use Code 20.50.500
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

3. Construction Noise Hours

Noise related to construction is allowed from 7:00 a.m. to 6:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday, except for Federal holidays and as further defined by the Bellevue City Code. Exceptions to the construction noise hours limitation contained in the Noise Control Code MAY be granted pursuant to 9.18.020C.1 when necessary to accommodate construction which cannot be undertaken during exempt hours. Written requests for exemption from the Noise Control Code must be submitted two weeks prior to the scheduled onset of extended hour construction activity. Such request shall include a noise analysis prepared by a noise consultant, including recommendations for achieving the noise limitations of the Noise Ordinance for new construction.

Authority: Bellevue City Code 9.18.020, .040
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

4. Use of Best Available Noise Abatement Technology

The use of best available noise abatement technology consistent with feasibility is required during construction to mitigate construction noise impacts to surrounding uses.

Authority: Bellevue City Code 9.18.020F
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

5. Air Pollution from Construction Vehicles and Equipment

Construction vehicles and heavy construction equipment shall emit the least amount of air pollution possible. While on city streets, construction vehicles shall meet the requirements of the Revised Code of Washington 46.61.655 for covered loads.

Authority: State Environmental Policy Act, Bellevue City Code 23.76, Revised Code of Washington 46.61.65

Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

6. Project Plans

The project is subject to the plans submitted with the Conditional Use (attached to this staff report), including landscape plans.

Authority: LUC 20.30.F
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

7. Noise from the Generator

During the day, the maximum permissible noise level is 55 dBA. At night, the maximum permissible noise level is 45 dBA. During maintenance, the maximum noise level is expected to be 59 dBA (under the maximum permissible noise level of 65 dBA) for an increase in noise level for a short duration for five minutes in any one hour period.

Authority: Bellevue City Code 9.18
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

8. Removal of Abandoned Sites

The owner of this facility shall provide the Director with copies of any notice of intent to cease operations that is provided to the FCC. All WCFs and associated equipment shall be removed by the facility owner within 90 days of the date it ceases to be operational.

Authority: LUC 20.20.195
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

B. PRIOR TO ISSUANCE OF THE CLEARING & GRADING PERMIT

The following conditions must be complied with on plans submitted with the Clearing & Grading (GD) permit application:

1. Landscape Plan

a) To ensure that interior plants will thrive, provide a water schedule to show how plants will be cared for during the establishment period and thereafter.

b) The applicant shall include a detail for soil preparation on the clearing and grading permit plans, City of Bellevue, Type 2 Soil Preparation, Attachment D.

c) The applicant shall provide tree protection during construction and show such protection on the clearing and grading plans.

Authority: LUC 20.20.520

Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

C. PRIOR TO ISSUANCE OF THE CD PERMIT AND COMPLETION OF WORK

The following conditions must be complied with on application submitted for the CD permit application:

1. Paint Colors

The proposal is subject to the following paint colors:

a) The tower shall be painted a dark green, to blend in with surrounding vegetation.

b) The fence and equipment building shall be painted steel grey to match the fire station.

Authority: Land Use Code 20.30B.140
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

2. Completion of Work/Facility Activation

The facility shall not be activated until all work included in the project scope and shown on the plans and specifications is completed.

Prior to activation, the applicant shall call for a Land Use Inspection so that Land Use can verify that the facility was installed per the approved plans.

Authority: Land Use Code 20.40.425
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

3. Radio Frequency Testing:

The applicant shall perform post-installation radio frequency emission measurements (upon completion and 6 months thereafter) to document that the project does not exceed FCC requirements. Such reports shall be submitted to the Land Use Division, Development Services Department.

Authority: Land Use Code 20.40.425
Reviewer: Carol Hamlin, 425-452-2731, chamlin@bellevuewa.gov

ATTACHMENT A
PROJECT PLANS

SHEET INDEX

ARCHITECTURAL
T-1 TITLE SHEET
SP-1 GENERAL NOTES
SP-2 SPECIAL INSPECTIONS
SV1 EXISTING SITE SURVEY
C1.1 COVER SHEET AND GENERAL NOTES
C2.1 TEMPORARY EROSION CONTROL PLAN
C3.1 GRADING AND DRAINAGE PLAN
L-1 PROPOSED LANDSCAPE PLAN
A-1.0 ADJACENT PARCEL ZONING & TREE REMOVAL
A-1.1 OVERALL PROPOSED SITE PLAN
A-2.0 ENLARGED PROPOSED SITE PLAN
A-2.1 PROPOSED ANTENNA PLANS
A-3.0 PROPOSED ELEVATIONS
A-3.1 PROPOSED ELEVATIONS
A-3.2 PROPOSED SOUTHWEST VIEW DETAIL
A-4.0 ANTENNA MOUNTING DETAILS
A-4.1 SHELTER DETAILS
A-4.2 FUEL TANKS AND SIGNAGE DETAILS
A-4.3 DETAILS
A-4.4 SOUND ATTENUATING FENCE ASSEMBLY DETAILS
A-4.5 GENERATOR DETAIL
A-4.6 BATTERY SYSTEM

STRUCTURAL
S1.1 STRUCTURAL NOTES
S2.1 BUILDING AND TANK FOUNDATION PLANS
S2.2 SOUND ATTENUATING FENCE ELEVATION AND DETAIL

MONOPOLE TOWER
SLAB FOUNDATION
170' MONOPOLE

MECHANICAL
M1.0 FUEL SYSTEM PIPING PLAN
M1.1 HVAC PLAN

ELECTRICAL
E-1 ONE LINE DIAGRAM & PANEL SCHEDULE
E-2 ELECTRICAL SITE PLAN
E-3 GROUNDING PLAN & NOTES
E-4 GROUNDING DETAILS & NOTES

WASHINGTON STATE CODE COMPLIANCE:

2015 IBC, STANDARDS AND AMENDMENTS, WAC 51-50
2015 IMC, STANDARDS AND AMENDMENTS, WAC 51-52
2015 IFC, STANDARDS AND AMENDMENTS, WAC 51-54
2015 UPC, STANDARDS AND AMENDMENTS, WAC 51-56, 51-57
2014 NEC, STANDARDS AND AMENDMENTS, WAC 296-468
2015 IECC, WASHINGTON STATE ENERGY CODE, WAC 51-11C

PROJECT SUMMARY

PROJECT MANAGER:
KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT)
401 5TH AVENUE, 6TH FLOOR
SEATTLE, WA 98104
CONTACT: HAI PHUNG
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A/E VENDOR:
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5506 6TH AVENUE S., SUITE 202
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EMAIL:: MRiley@Odelia.com

TRANSPORT CARRIER:
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401 5TH AVENUE, 6TH FLOOR
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CONSTRUCTION MANAGER:
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401 5TH AVENUE, 6TH FLOOR
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CONSTRUCTION CONTACT:
SARAH TELSCHOW, AICP
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DESIGN CONSULTANT:
CAMP + ASSOCIATES, INC.
19401 40TH AVE W, SUITE 304
LYNNWOOD, WA 98036
CONTACT: ERIC CAMP
PHONE: 425-740-6382
EMAIL: Eric.Camp@CAMPASSOC.com

SITE NAME: BELLEVUE STATION 9

SITE ADDRESS: 12412 NEWCASTLE WAY
BELLEVUE, WA 98006

LAND OWNER: BELLEVUE FIRE DEPARTMENT
766 BELLEVUE WAY SE
BELLEVUE, WA 98004

JURISDICTION: CITY OF BELLEVUE (KING COUNTY)

PARCEL NUMBER: 195182-0080

PARCEL SIZE: 70,282 SQ. FT. (1.61 ACRES)

ZONING: R-5

OCCUPANCY: U (UNOCCUPIED)

CONSTRUCTION TYPE: V-B

SETBACKS: REQUIRED SETBACKS WERE BASED ON THE BELLEVUE LAND USE CODE (BLUC) SECTION 20.20.195.E.3 AND SECTION 20.20.010

PROJECT AREA: 4,793.75 SQ. FT.

NEW IMPERVIOUS SURFACES: 2,925 SQ. FT.

PROJECT DESCRIPTION:
THE SCOPE OF WORK INCLUDES:
NEW KING COUNTY PUGET SOUND EMERGENCY RADIO NETWORK (PSERN) 170' TOWER AND ASSOCIATED EQUIPMENT TO PROVIDE EMERGENCY RADIO COMMUNICATIONS TO REACH AND COORDINATE WITH EMERGENCY RESPONDERS.

PUGET SOUND EMERGENCY RADIO NETWORK

(NEW BUILD)

BELLEVUE STATION 9

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

LATITUDE: 47° 32' 30.46" N (NAD 83)
LONGITUDE: 122° 10' 28.61" W (NAD 83)
GROUND ELEVATION: 435.0' (NAVD 88)

CONFIDENTIAL AND PROPRIETARY

SIGNATURE BLOCK

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

AREA MAP

DRIVING DIRECTIONS:
1) DEPART 401 5TH AVE., SEATTLE, WA ON 5TH AVE. S (SOUTH) [0.2 MI] 2) TURN RIGHT (WEST) ONTO S JACKSON ST. [164 YDS] 3) TURN LEFT (SOUTH-EAST) ONTO 2ND AVE. EXT S, THEN IMMEDIATELY BEAR RIGHT (SOUTH) ONTO 4TH AVE. S [0.4 MI] 4) ROAD NAME CHANGES TO WA-519 [0.1 MI] 5) KEEP STRAIGHT ONTO 4TH AVE. S [21 YDS] 6) KEEP RIGHT ONTO RAMP [0.1 MI] 7) TURN LEFT (EAST) ONTO EDGAR MARTINEZ DR. S [32 YDS] 8) TAKE RAMP ONTO I-90 [7.2 MI] 9) AT EXIT 10A, TURN RIGHT ONTO RAMP [0.5 MI] 10) TAKE RAMP (RIGHT) ONTO I-405 [0.6 MI] 11) AT EXIT 10, TURN RIGHT ONTO RAMP [0.3 MI] 12) KEEP LEFT TO STAY ON RAMP [43 YDS] 13) TURN LEFT (SOUTH) ONTO COAL CREEK PKWY (SE) [0.4 MI] 14) KEEP STRAIGHT ONTO COAL CREEK PKWY (SE) [0.7 MI] 15) BEAR RIGHT (SOUTH) ONTO COAL CREEK PKWY (SE) [1.4 MI] 16) TURN RIGHT (WEST) ONTO NEWCASTLE WAY (SE 69TH WAY) [0.6 MI] 17) ARRIVE 12412 NEWCASTLE WAY, BELLEVUE, WA 98006

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

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FAX: (425) 252-2880
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AIO
APPROVED BY: PN

02/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
09/07/16	PLAN REVIEW COMMENTS
08/03/16	ISSUED FOR PERMIT
07/28/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
ERIC M. CAMP
STATE OF WASHINGTON

SHEET NAME
TITLE SHEET

SHEET NUMBER
T-1

CONTRACTOR NOTES:

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

GENERAL NOTES:

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

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

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

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

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

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

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

ANTENNA SUPPORTING TOWER IS FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION SUB-CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PERSONNEL AND PROPERTY FROM HAZARDOUS EXPOSURE TO OVERHEAD DANGERS.

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

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

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

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

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

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

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

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

CIVIL NOTES:

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

SUBGRADE AND BASE PREPARATION:

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

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301, A.C.I. 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 POUNDS PER SQUARE INCH AT 28 DAYS. TYPE I-II PORTLAND CEMENT WILL BE USED WITH A MAXIMUM AGGREGATE SIZE OF 3/4" AND 6% ±1% AIR ENTRAINMENT. ALL CONCRETE WILL HAVE A MAXIMUM WATER/CEMENT (W/C) RATIO OF 0.48.
3. ALL CONCRETE FLATWORK SHALL HAVE A STIFF BROOM FINISH AND HAVE A SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, DEFORMED.
5. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILING OF CONC. REINFORCEMENT" (A.C.I. 315-80, REV. 1986).
6. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE CLASS B CONFORMING TO ACI 318-95.
7. A CHAMFER OF 1" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH A.C.I. 301 SECTION 4.2.4 UNLESS OTHERWISE NOTED.
8. CONCRETE WORK SHALL BE COORDINATED WITH THE MECHANICAL, EQUIPMENT, AND ELECTRICAL WORK TO ASSURE THAT ALL AFFECTED PIPES, CONDUITS INSERTS, ETC. ARE IN PLACE AND VERIFIED BEFORE PLACING CONCRETE.
9. CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE FOLLOWING UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
   - CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: 2 INCHES
   - CONCRETE CAST AGAINST EARTH: 3 INCHES
10. COORDINATE LOCATION OF STEEL ANCHOR BOLTS WITH STEEL FABRICATOR PRIOR TO INSTALLATION IN FIELD.
11. CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL WALL/SLAB PENETRATIONS (PIPING, CONDUIT, ETC.) POWER, TELCO AND COAX TO ENTER SITE UNDER EQUIPMENT SLAB.

METAL NOTES:

PART 1 – GENERAL

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

PART 2 – PRODUCTS

1. MATERIALS:

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

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

PART 3 – EXECUTION

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

ELECTRICAL NOTES:

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

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

UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE I, CONFORMING TO UL ARTICLE 651. WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED T PIPE: SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS. (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK).

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

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

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

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

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

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

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

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

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

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

GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
4. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
5. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS, UNLESS NOTED OTHERWISE.
6. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
7. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
9. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"ø 10-FT. LONG (OR NOTED OTHERWISE ON PLANS), AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
10. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
12. GROUND RING SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
13. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE.
14. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
16. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM).
17. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
18. CONTRACTOR TO VERIFY CURRENT GROUNDING STANDARDS PRIOR TO CONSTRUCTION.

1 **GENERAL NOTES**

King County

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PUGET SOUND EMERGENCY RADIO NETWORK

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PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

△	02/01/17	SITE RELOCATION
△	10/14/16	PLAN REVIEW COMMENTS
△	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
PAUL FENTON
STATE OF WASHINGTON

SHEET NAME
GENERAL NOTES

SHEET NUMBER
SP-1

TABLE 1705.6
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

AISC 360 - TABLE N5.4-1
INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	O
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 PLANE)	O	O
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O

AISC 360 - 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 TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

AISC 360 - TABLE N5.6-3
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 PREFORMED BY STEEL FABRICATOR OR ERECTOR.

QA = QUALITY ASSURANCE TASKS TO BE PREFORMED BY A SPECIAL INSPECTION AGENCY OR INDIVIDUALS DEFINED BY AWS B5.1 OR INDIVIDUALS QUALIFIED UNDER THE PROVISIONS OF AWS D1.1/D1.1M SUBCLAUSE 8.1.4.

O = 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.

WABO-CERTIFIED SPECIAL INSPECTION AGENCY: 1

KRAZAN & ASSOCIATES, INC.
4303 198TH STREET SW
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PHONE: 425-485-3519

REVISED THIS SHEET 3

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	–	X	ACI 318: CH. 20, 25.2, 25.3, 26.6.1–26.6.3	1908.4
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: 26.6.4	–
3. INSPECT ANCHORS IN CAST CONCRETE.	–	X	ACI 318: 17.8.2	–
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: 17.8.2.4 ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
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 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X	ACI 318: 26.5.3–26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	– –	ACI 318: 26.10	–
10. INSPECT ERECTION 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: 26.11.2	–
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	X	ACI 318: 26.11.1.2	–

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 CAACITY, 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.	–	–

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PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

3	02/01/17	SITE RELOCATION
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PLAN REVIEWERS SIGNATURE

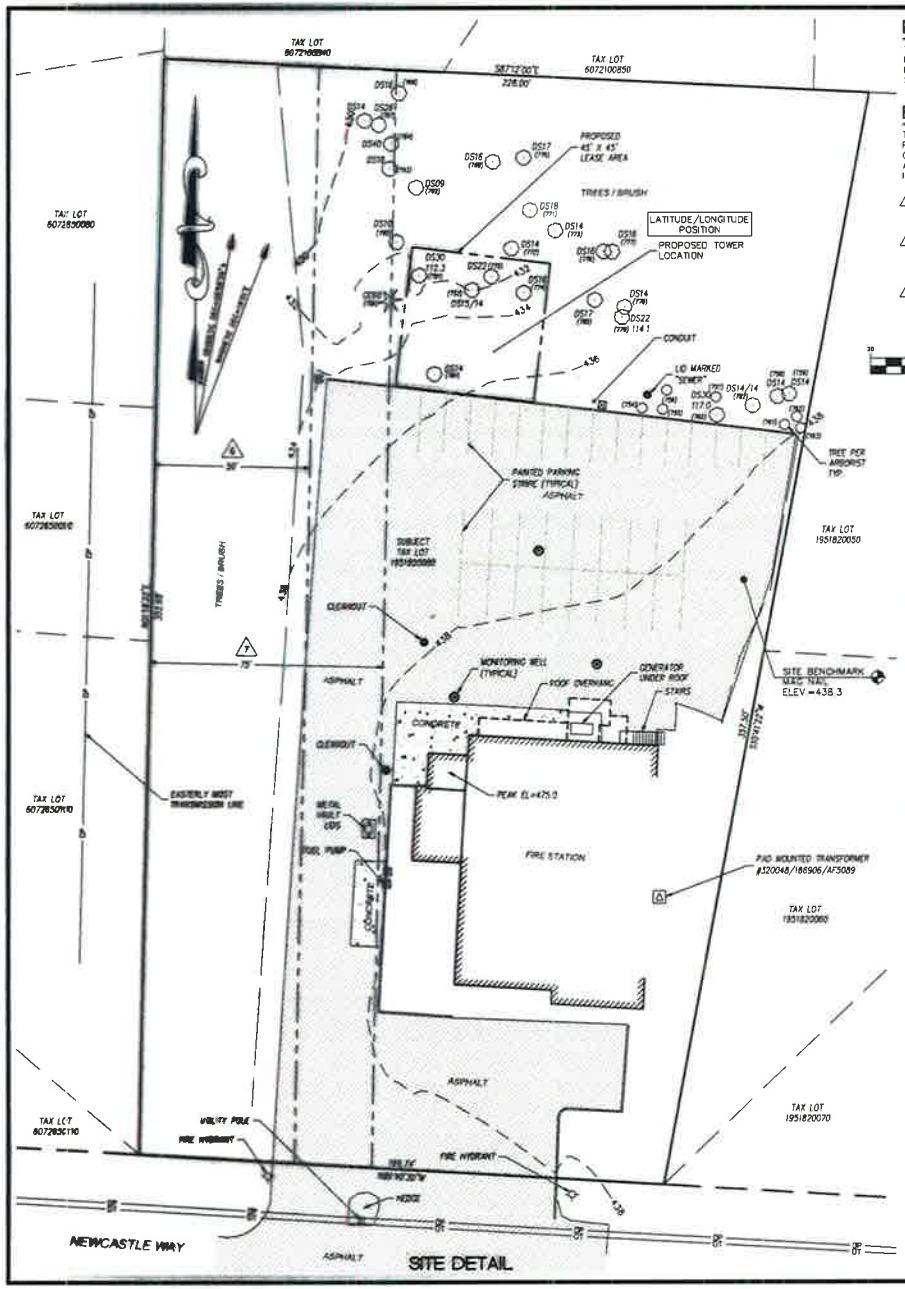
ARCHITECTS STAMP

7727 REGISTERED ARCHITECT PAUL NAVE STATE OF WASHINGTON

SHEET NAME
SPECIAL INSPECTIONS

SHEET NUMBER
SP-2

1 **SPECIAL INSPECTIONS**
-



LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO. 4, AS RECORDED IN VOLUME 96 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON. SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

EASEMENTS

(#) CORRESPONDS WITH ITEM NO. SCHEDULE B" OF TITLE REPORT.

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN.

(6) ELECTRIC TRANSMISSION LINE EASEMENT, RECORDING NO. 2342829, RECORDS OF KING COUNTY, SHOWN.

(7) EASEMENT AND THE TERMS AND CONDITIONS FOR A ELECTRIC TRANSMISSION LINE AS PROVIDED IN CITY OF SEATTLE ORDINANCE NO. 59599, ORDINANCE DESCRIBES THE WEST 75 FEET OF THE SUBJECT PROPERTY, SHOWN.

(9) MATTERS CONTAINED IN PLAT OF DEL-MAR WOODS DIV 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY – DOCUMENT CONTAINS INSUFFICIENT INFORMATION TO LOCATE HEREON, NOT SHOWN.

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

LATITUDE/LONGITUDE POSITION

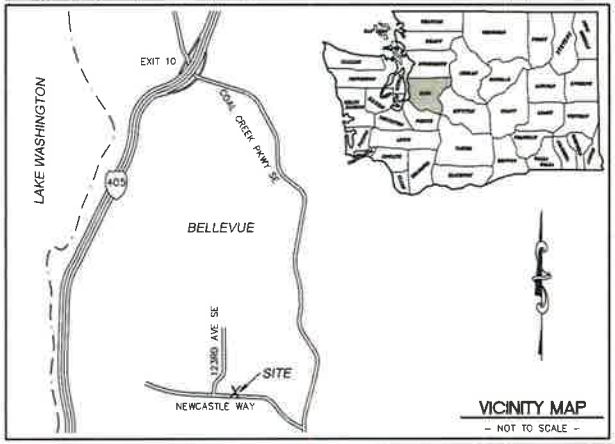
COORDINATE DATA AT PROPOSED TOWER LOCATION:
NAD 83
LAT = 47°32'30.46" N
LONG = 122°10'28.61" W
NAVD 88
ELEV = 435.0 FEET

BENCHMARK IS "BLVU"
WSRN GPS CORS STATION
ELEV = 51.2'

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

NOTES

1) TITLE INFORMATION PER GUARANTEE NO. 20371668-410-T20, PROVIDED BY FIDELITY NATIONAL TITLE OF WASHINGTON, INC., DATED SEPTEMBER 29, 2015.
2) FIELD WORK CONDUCTED IN JULY, 2015.
3) BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE (NAD83)
4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
5) FEMA DESIGNATION: ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN), PANEL 666 OF 1725, FIRM MAP NUMBER 53033C0666F, EFFECTIVE DATE MAY 16, 1995.



LEGEND

- SUBJECT BOUNDARY LINE
- RIGHT-OF-WAY CENTERLINE
- RIGHT-OF-WAY LINE
- ADJACENT BOUNDARY LINE
- SECTIONAL BREAKDOWN LINE
- OP — OVERHEAD POWER LINE
- UP — BURIED POWER LINE
- G — BURIED GAS LINE
- OT — OVERHEAD TELEPHONE LINE
- UT — BURIED TELEPHONE LINE
- W — BURIED WATER LINE
- SS — BURIED SANITARY SEWER
- SD — BURIED STORM DRAIN
- DITCH LINE/FLOW LINE
- ROCK RETAINING WALL
- VEGETATION LINE
- CHAIN LINK FENCE
- WOOD FENCE
- X — BARBED WIRE/WIRE FENCE

△	TRANSFORMER		FIRE HYDRANT
☆	LIGHT STANDARD	⋈	GATE VALVE
P	POWER VAULT	⊞	WATER METER
⊠	UTILITY BOX		FIRE STAND PIPE
⌀	UTILITY POLE	□	CATCH BASIN, TYPE I
⟵	POLE GUY WIRE	⊕	CATCH BASIN, TYPE II
G	GAS VALVE	⫠	SIGN
G	GAS METER	○	BOLLARD
T	TELEPHONE VAULT	▭	MAIL BOX
▫	TELEPHONE RISER	234.21	SPOT ELEVATION

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

TREE LEGEND

DECIDUOUS TREE
AL12 — TRUNK DIAMETER (IN)
TYPE

EVERGREEN TREE
DF15 / 185.2
HEIGHT AGL IF MEASURED

AL=ALDER
MP=MAPLE
DS=DECIDUOUS
MA=MADRONA
OK=OAK
CH=CHERRY
CE=CEDAR
DF=DOUGLAS FIR
HE=HEMLOCK
PI=PINE
EVG=EVERGREEN

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

SITE INFORMATION

TAX LOT NUMBER	1951820080
SITE ADDRESS	12412 NEWCASTLE WAY BELLEVUE, WA 98006
SITE CONTACT	
PHONE NUMBER	
ZONING	R5 (CITY OF BELLEVUE)
TOTAL LOT AREA	70,282± S.F.(1.61 AC.)
PROJECT AREA	2,025 S.F.

SURVEY REFERENCE

1. PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY.
2. PLAT OF NEWPORT HILLS NO. 18, RECORDED IN VOLUME 78, PAGE 36, RECORDS OF KING COUNTY.

BOUNDARY DISCLAIMER

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

CAUTION!

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

1-800-424-5555

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PACIFIC CORPORATION

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

SITE
BELLEVUE STA. #9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
KING COUNTY

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FLD. CREW:	CR/CT
FLD. BOOK:	370/63
DRAWN BY:	RLP
JOB #:	15385.05
DATE:	7/15/15

REVISIONS

DATE	DESCRIPTION	BY
2/03/17	REVISE LEASE AREA AND TOWER LOCATION	KJW
10/05/16	ADD TAG NUMBERS AND ARBORIST TREES	KJW
8/16/16	ADD TREES AND TAG NUMBERS	KJW
3/30/16	REVISED LEASE AREA AND TOWER LOCATION	LAC
10/14/15	ADD NEW TITLE REPORT	JA
7/31/15	REVISED LEASE AREA AND TOWER LOCATION, ADDED EASEMENTS	LAC

KEITH J. WALKER
STATE OF WASHINGTON
21606
REGISTERED LAND SURVEYOR
2/02/17

SHEET TITLE
EXISTING SITE SURVEY
SEC 28, TWP 24 N, RNG 5 E, WM

SHEET NUMBER
SV1

SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.

BELLEVUE STATION 9

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

APPLICANT

ODELIA PACIFIC CORP
1215 4TH AVE, SUITE 1900
SEATTLE, WA
206 490 3R04
CONTACT: SARAH TELSCHOW

CONSULTANTS

ARCHITECT
CAMP & ASSOCIATES
19401 40TH AVE W, SUITE 304
LYNNWOOD, WA 98036
425 740 6390
CONTACT ERIC CAMP

CIVIL ENGINEER
CG ENGINEERING
250 4TH AVE S, SUITE 200
EDMONDS WA 98020
425 778 8500 FAX 778 5536
CONTACT JARED UNDERBRINK

SURVEYOR
DUNCANSON COMPANY, INC
145 SW 155TH ST, SUITE 102
SEATTLE, WA 98166
206 244 4141
CONTACT JON BECKER

SOIL/GEOTECH ENGINEER
TETRATECH
2525 PALMER ST, SUITE 2
MISSOULA, MT 59808
406 543 3045
CONTACT JEREMY DIERKING

LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO 4, AS RECORDED IN VOLUME 96 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON. SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON

BENCHMARK

BENCHMARK IS "BLVU"
WSRN GPS CORS STATION
ELEV = 51 2

DATUM

NAVD 88

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
C2.1	TEMPORARY EROSION CONTROL PLAN
C3.1	GRADING & DRAINAGE PLAN

FLOW CONTROL BMP(s):
1. SHEET FLOW DISPERSION PER BMP T5.12 OF THE DEPT OF ECOLOGY STORMWATER MANUAL FOR WESTERN WASHINGTON

SUGGESTED TEMPORARY EROSION CONTROL BMPs:

REFER TO VOLUME II OF THE DEPARTMENT OF ECOLOGY FOR BMP DETAILS AND FOR ADDITIONAL BMP MEASURES. BMP NUMBERING FOR ESC PLAN REFERS TO 2012 DEPARTMENT OF ECOLOGY MANUAL, VOLUME II, SECTION 4

1. PLASTIC OR METAL FENCE (BMP C103)
2. TEMPORARY CONSTRUCTION ENTRANCE (BMP C107)
3. TEMPORARY & PERMANENT SEEDING (BMP C122)
4. PLASTIC COVERING (BMP C123)
5. SILT FENCE (BMP C233)

SITE AREAS

PARCEL SIZE:	1 61	ACRES
NEW IMPERVIOUS:	2 925	SQ FT
REPLACED IMPERVIOUS:	0	SQ FT
NEW PLUS REPLACED IMPERVIOUS:	2 925	SQ FT

VICINITY MAP
NTS
★ = PROJECT SITE

GENERAL NOTES

EROSION CONTROL PLAN NOTES:

1. ALL CLEARING & GRADING CONSTRUCTION MUST BE IN ACCORDANCE WITH CITY OF BELLEVUE (COB) CLEARING & GRADING CODE, CLEARING & GRADING DEVELOPMENT STANDARDS, LAND USE CODE, UNIFORM BUILDING CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THESE REQUIREMENTS. ANY VARIANCE FROM ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE CITY OF BELLEVUE DEVELOPMENT SERVICES (DSD) PRIOR TO CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE APPLICANT AND THE PROFESSIONAL CIVIL ENGINEER TO CORRECT ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS. ALL CORRECTIONS SHALL BE AT NO ADDITIONAL COST OR LIABILITY TO THE COB
2. APPROVAL OF THIS EROSION/SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E G SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)
3. A COPY OF THE APPROVED PLANS AND DRAWINGS MUST BE ON-SITE DURING CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR OBTAINING ANY OTHER REQUIRED OR RELATED PERMITS PRIOR TO BEGINNING CONSTRUCTION
4. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED
5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE
7. ALL LOCATIONS OF EXISTING UTILITIES MAY HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS AND TO DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN
8. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION
9. CLEARING SHALL BE LIMITED TO THE AREAS WITHIN THE APPROVED DISTURBANCE LIMITS. EXPOSED SOILS MUST BE COVERED AT THE END OF EACH WORKING DAY WHEN WORKING FROM OCTOBER 1ST THROUGH APRIL 30TH. FROM MAY 1ST THROUGH SEPTEMBER 30TH, EXPOSED SOILS MUST BE COVERED AT THE END OF EACH CONSTRUCTION WEEK AND ALSO AT THE THREAT OF RAIN
10. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A TRAPPED CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM
11. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT
12. THE CONTRACTOR MUST MAINTAIN A SWEEPER ON SITE DURING EARTHWORK AND IMMEDIATELY REMOVE SOIL THAT HAS BEEN TRACKED ONTO PAVED AREAS AS RESULT OF CONSTRUCTION
13. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING
14. ANY EXCAVATED MATERIAL REMOVED FROM THE CONSTRUCTION SITE AND DEPOSITED ON PROPERTY WITHIN THE CITY LIMITS MUST BE DONE IN COMPLIANCE WITH A VALID CLEARING & GRADING PERMIT. LOCATIONS FOR THE MOBILIZATION AREA AND STOCKPILED MATERIAL MUST BE APPROVED BY THE CLEARING AND GRADING INSPECTOR AT LEAST 24 HOURS IN ADVANCE OF ANY STOCKPILING
15. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT. 16. FINAL SITE GRADING MUST DIRECT DRAINAGE AWAY FROM ALL BUILDING STRUCTURES AT A MINIMUM 5% SLOPE, PER THE INTERNATIONAL RESIDENTIAL CODE (IRC) R401 3

STORM DRAINAGE GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE 2013 EDITION OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT ENGINEERING STANDARDS AND THE DEVELOPER EXTENSION AGREEMENT
2. STORM PIPE SHALL BE PVC CONFORMING TO ASTM D-3034 SDR 35 (4" - 15") OR ASTM F 679 (18" 27"). BEDDING AND BACKFILL SHALL BE AS SHOWN IN THE STANDARD DETAILS
3. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE EXCAVATOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HERE ON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. IMMEDIATELY NOTIFY THE ENGINEER IF A CONFLICT EXISTS
4. THE FOOTING DRAINAGE SYSTEM AND THE ROOF DOWNSPOUT SYSTEM SHALL NOT BE INTERCONNECTED AND SHALL SEPARATELY CONVEY COLLECTED FLOWS TO THE CONVEYANCE SYSTEM OR TO ON-SITE STORMWATER FACILITIES
5. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO ENSURE THAT SEDIMENT OR OTHER HAZARDOUS MATERIALS DO NOT ENTER THE STORM DRAINAGE SYSTEM IN ACCORDANCE WITH THE SITES APPROVED CSWPPP. FOR ALL CONSTRUCTION DURING THE RAINY SEASON, DOWNHILL BASINS AND INLETS MUST BE PROTECTED WITH CATCH BASIN INSERTS. SIMPLY PLACING FILTER FABRIC UNDER THE GRATE IS NOT ACCEPTABLE
6. PRIOR TO FINAL INSPECTION AND ACCEPTANCE OF STORM DRAINAGE WORK, PIPES AND STORM DRAIN STRUCTURES SHALL BE CLEANED AND FLUSHED. ANY OBSTRUCTIONS TO FLOW WITHIN THE STORM DRAIN SYSTEM, (SUCH AS RUBBLE, MORTAR AND WEDGED DEBRIS), SHALL BE REMOVED AT THE NEAREST STRUCTURE. WASH WATER OF ANY SORT SHALL NOT BE DISCHARGED TO THE STORM DRAIN SYSTEM OR SURFACE WATERS
7. ENDS OF EACH STORM DRAIN STUB AT THE PROPERTY LINE SHALL BE CAPPED AND LOCATED WITH AN 8' LONG 2" X 4" BOARD, EMBEDDED TO THE STUB CAP AND EXTENDING AT LEAST 3 FEET ABOVE GRADE, AND MARKED PERMANENTLY "STORM". A COPPER 12 GA LOCATE WIRE FIRMLY ATTACHED. THE STUB DEPTH SHALL BE INDICATED ON THE MARKER
8. ALL GRATES IN ROADWAYS SHALL BE DUCTILE IRON, BOLT-LOCKING, VANED GRATES PER THE STANDARD DETAILS. STRUCTURES IN TRAFFIC LANES OUTSIDE OF THE CURBLINE WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH ROUND, BOLT LOCKING SOLID COVERS. OFF-STREET STRUCTURES WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH BOLT-LOCKING SOLID COVERS
9. SIDE STORM STATIONS ARE REFERENCED FROM NEAREST DOWNSTREAM MANHOLE/ CATCH BASIN
10. ALL TRENCHES SHALL BE COMPACTED, AND HOT MIX ASPHALT IN PLACE IN PAVED AREAS, PRIOR TO TESTING STORM LINES FOR ACCEPTANCE
11. STORM STUBS SHALL BE TESTED FOR ACCEPTANCE AT THE SAME TIME THE MAIN STORM IS TESTED
12. THE CONTRACTOR SHALL USE A VACUUM STREET SWEEPER TO REMOVE DUST AND DEBRIS FROM PAVEMENT AREAS AS DIRECTED BY THE ENGINEER. FLUSHING OF STREETS SHALL NOT BE PERMITTED WITHOUT PRIOR CITY APPROVAL
13. STORM DRAINAGE MAINLINES, STUBS AND FITTINGS SHALL BE CONSTRUCTED USING THE SAME PIPE MATERIAL AND MANUFACTURER. CONNECTIONS BETWEEN STUBS AND THE MAINLINE WILL BE MADE WITH A TEE FITTING. TEE FITTING SHALL BE FROM SAME MANUFACTURER AS PIPE. CUT-IN CONNECTIONS ARE ONLY ALLOWED WHEN CONNECTING A NEW STUB TO AN EXISTING MAINLINE
14. MANHOLES, CATCH BASINS AND VAULTS ARE CONSIDERED TO BE PERMIT-REQUIRED CONFINED SPACES. ENTRY INTO THESE SPACES SHALL BE IN ACCORDANCE WITH CHAPTER 296-809 WAC
15. CALL 1-800-424-5555, OR 8-1-1, 72 HOURS BEFORE CONSTRUCTION FOR UTILITY LOCATES
16. THE CONTRACTOR SHALL PERFORM A VIDEO INSPECTION AND PROVIDE A DVD OF THE STORM PIPE INTERIOR FOR THE CITY'S REVIEW. THE VIDEO SHALL PROVIDE A MINIMUM OF 14 LINES PER MILLIMETER RESOLUTION AND COVER THE ENTIRE LENGTH OF THE APPLICABLE PIPE. THE CAMERA SHALL BE MOVED THROUGH THE PIPE AT A UNIFORM RATE (≤ 30 FT/MIN), STOPPING WHEN NECESSARY TO ENSURE PROPER DOCUMENTATION OF THE PIPE CONDITION. THE VIDEO SHALL BE TAKEN AFTER INSTALLATION AND CLEANING TO INSURE THAT NO DEFECTS EXIST. THE PROJECT WILL NOT BE ACCEPTED UNTIL ALL DEFECTS HAVE BEEN REPAIRED
17. CLEARLY LABEL PUBLIC AND PRIVATE SYSTEMS ON THE PLANS. PRIVATE SYSTEMS SHALL BE MARKED "PRIVATE" AND SHALL BE MAINTAINED BY THE PROPERTY OWNER(S)
18. CONTRACTOR SHALL INSTALL, AT ALL CONNECTIONS TO EXISTING DOWNSTREAM MANHOLES/CATCH BASINS, SCREENS OR PLUGS TO PREVENT FOREIGN MATERIALS FROM ENTERING EXISTING STORM DRAINAGE SYSTEM. SCREENS OR PLUGS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE CONSTRUCTION AND SHALL BE REMOVED ALONG WITH COLLECTED DEBRIS AT THE TIME OF FINAL INSPECTION AND IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT
19. SURFACE RESTORATION OF EXISTING ASPHALT PAVEMENT SHALL BE AS REQUIRED BY THE RIGHT-OF-WAY USE PERMIT
20. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF FIVE FEET (5') HORIZONTAL SEPARATION BETWEEN ALL WATER AND STORM DRAINAGE LINES. ANY CONFLICT SHALL BE REPORTED TO THE UTILITY AND THE DEVELOPER'S ENGINEER PRIOR TO CONSTRUCTION
21. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT NO CONFLICTS EXIST BETWEEN STORM DRAINAGE LINES AND PROPOSED OR EXISTING UTILITIES PRIOR TO CONSTRUCTION
22. BEFORE COMMENCEMENT OF TRENCHING, THE CONTRACTOR SHALL PROVIDE FILTER FABRIC FOR ALL DOWNHILL STORM DRAIN INLETS AND CATCH BASINS, WHICH WILL RECEIVE RUNOFF FROM THE PROJECT SITE. THE CONTRACTOR SHALL PERIODICALLY INSPECT THE CONDITION OF ALL FILTER FABRIC AND REPLACE AS NECESSARY
23. MINIMUM COVER OVER STORM DRAINAGE PIPE SHALL BE 2 FEET, UNLESS OTHERWISE SHOWN
24. AVOID CROSSING WATER OR SEWER MAINS AT HIGHLY ACUTE ANGLES. THE SMALLEST ANGLE MEASURE BETWEEN UTILITIES SHOULD BE 45 DEGREES
25. WHEN WORK IS TO OCCUR IN EASEMENTS, THE CONTRACTOR SHALL NOTIFY THE EASEMENT GRANTOR AND BELLEVUE UTILITIES IN WRITING A MINIMUM OF 48 HOURS IN ADVANCE OF BEGINNING WORK (NOT INCLUDING WEEKENDS OR HOLIDAYS). FAILURE TO NOTIFY GRANTOR AND BELLEVUE UTILITIES WILL RESULT IN A STOP WORK ORDER BEING POSTED UNTIL THE MATTER IS RESOLVED TO THE SATISFACTION OF BELLEVUE UTILITIES. A WRITTEN RELEASE FROM THE EASEMENT GRANTOR SHALL BE FURNISHED TO THE UTILITIES INSPECTOR PRIOR TO PERMIT SIGN-OFF
26. THE CONTRACTOR SHALL RESTORE THE RIGHT-OF-WAY AND EXISTING PUBLIC STORM DRAINAGE EASEMENT(S) AFTER CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN CONDITION PRIOR TO ENTRY. THE CONTRACTOR SHALL FURNISH A SIGNED RELEASE FROM ALL AFFECTED PROPERTY OWNERS AFTER RESTORATION HAS BEEN COMPLETED
27. WHERE A NEW UTILITY LINE CROSSES BELOW AN EXISTING AC MAIN, THE AC PIPE SHALL BE REPLACED WITH DI PIPE TO 3 FEET PAST EACH SIDE OF THE TRENCH AS SHOWN ON STANDARD DETAIL W-8. ALTERNATIVELY, WHERE DIRECTED BY THE UTILITY, THE TRENCH SHALL BE BACKFILLED WITH CONTROLLED DENSITY FILL (CDF, AKA FLOWABLE FILL) FROM BOTTOM OF TRENCH TO BOTTOM OF AC MAIN

RECOMMENDED CONSTRUCTION SEQUENCE:

1. HOLD THE PRE-CONSTRUCTION MEETING
2. POST SIGN WITH NAME AND PHONE NUMBER OF CSWPP/ESC SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN)
3. FLAG OR FENCE CLEARING LIMITS
4. INSTALL CATCH BASIN PROTECTION, IF REQUIRED. INSTALL FLOW CONTROL BMP AREA PROTECTION, IF REQUIRED
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S)
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.)
7. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT. CONSTRUCT SWPPS IN ANTICIPATION OF SCHEDULED CONSTRUCTION ACTIVITY (E G , CONCRETE RELATED PH MEASURES FOR UTILITY VAULT OR ROADWAY CONSTRUCTION)
8. MAINTAIN EROSION CONTROL AND SWPPS MEASURES IN ACCORDANCE WITH CITY OF BELLEVUE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS
9. RELOCATE EROSION CONTROL AND SWPPS MEASURES, OR 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
10. 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 FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT
11. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE
12. SEED, SOD, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS
13. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPS IF APPROPRIATE

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
ADJACENT PROPERTY LINE		
CENTERLINE		
CLEARING LIMITS		
SILT FENCE		
CONTOUR LINE	100	100
FENCE		
SANITARY SEWER LINE		
MANHOLE		
STORM DRAIN MAIN		
STORM DRAIN PIPE		
ROOF DRAIN		
FOOTING DRAIN		
PRESSURE LINE		
CATCH BASIN (TYPE 1)		
CATCH BASIN (TYPE 2)		
CLEANOUT		
CLEANOUT AND WYE		
GRADE BREAK		
SURFACE SWALE		
DRAINAGE ARROW		
WATER LINE		
WATER METER		
FIRE HYDRANT		
FDC		
PIV		
GATE VALVE		
TEE		
90° BEND		
THRUST BLOCKING		
CAP		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		
CRUSHED SURFACING		
ROCKERY		
SPOT ELEVATION		20.6
TELEPHONE LINE		
POWER LINE		
GAS LINE		
SIGN		

ABBREVIATIONS

ABN	ABANDONED	MIN	MINIMUM
BLDG	BUILDING	MJ	MECHANICAL JOINT
BOW	BOTTOM OF WALL	MON	MONUMENT
℄	CENTERLINE	NTS	NOT TO SCALE
CB	CATCH BASIN	OC	ON CENTER
CMP	CORRUGATED METAL PIPE	PC	POINT OF CURVATURE
CO	CLEANOUT	PI	POINT OF INTERSECTION
CONC	CONCRETE	PIV	POST INDICATOR VALVE
CONST	CONSTRUCTION	℘	PROPERTY LINE
CP	CONCRETE PIPE	PT	POINT OF TANGENCY
CU YD	CUBIC YARD	PVC	POLYVINYL CHLORIDE PIPE
DDCVA	DOUBLE DETECTOR CHECK VALVE ASSEMBLY	PVI	POINT OF VERTICAL INTERSECTION
DI	DUCTILE IRON PIPE	PVMT	PAVEMENT
DIA	DIAMETER	PVT	POINT OF VERTICAL TANG
DIP	DUCTILE IRON PIPE	R	RADIUS
EA	EACH	REINF	REINFORCEMENT
EJ	EXPANSION JOINT	RJ	RESTRAINED JOINT
ELEV	ELEVATION	RET	RETAINING
EOP	EDGE OF PAVEMENT	RT	RIGHT
EX	EXISTING	SD	STORM DRAIN
FDC	FIRE DEPT. CONNECTION	SECT	SECTION
FFE	FINISHED FLOOR ELEVATION	SDMH	STORM DRAIN MANHOLE
FH	FIRE HYDRANT	SIM	SIMILAR
FL	FLANGE	SQ	SQUARE
FT	FEET/FOOT	SS	SANITARY SEWER
GV	GATE VALVE	SSMH	SANITARY SEWER MANHOLE
HP	HIGH POINT	STA	STATION
HT	HEIGHT	STD	STANDARD
ID	INSIDE DIAMETER	STL	STEEL
IE	INVERT ELEVATION	TB	THRUST BLOCK
L	LENGTH/LINE	TOC	TOP OF CURB
LCPE	LINED CORRUGATED POLYETHYLENE PIPE	TOW	TOP OF WALL
LF	LINEAL FOOT	TOP	TOP ELEVATION
LP	LOW POINT	TYP	TYPICAL
LT	LEFT	VC	VERTICAL CURVE
MAX	MAXIMUM	W/	WITH
MECH	MECHANICAL	WM	WATER METER
MH	MANHOLE		

King County

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

CC PROJECT# 16015.902

PROJECT MANAGER	JPU
PREPARED BY	ZOS
APPROVED BY	GAC

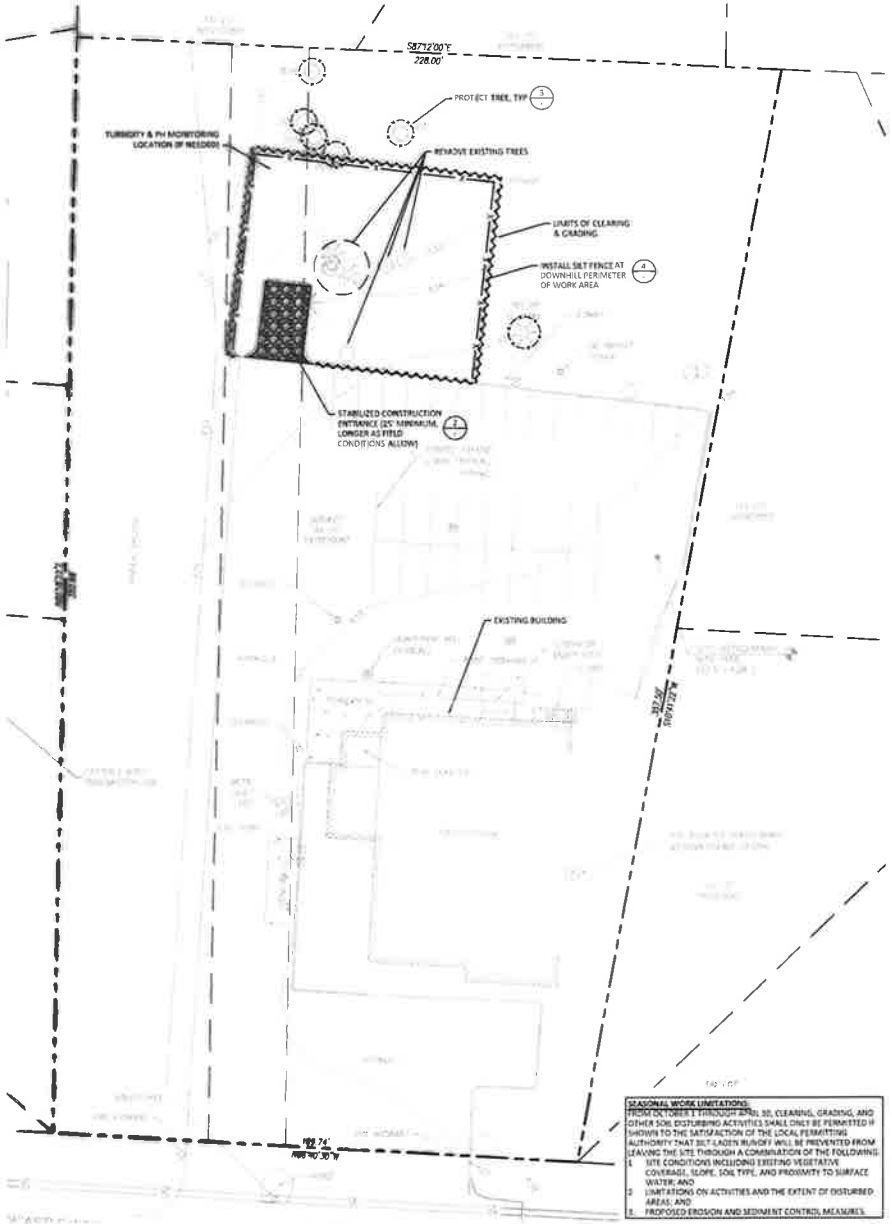
REV	DATE	DESCRIPTION
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]
	[illegible]	[illegible]

PLAN REVIEWERS SIGNATURE

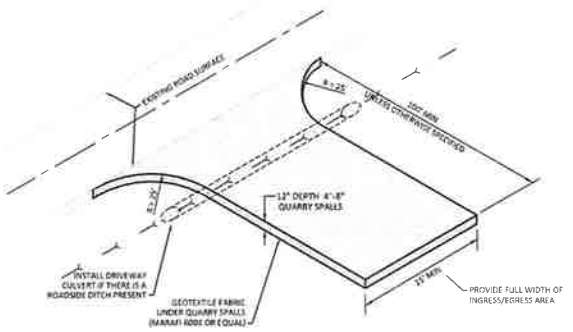
SHEET NAME
COVER SHEET AND GENERAL NOTES

SHEET NUMBER
C1.1

SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.



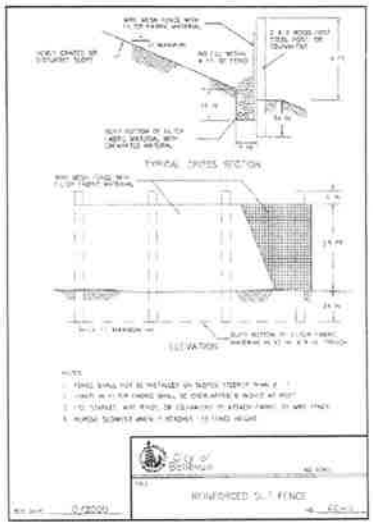
1 TEMPORARY EROSION CONTROL PLAN
SCALE: 1" = 20'



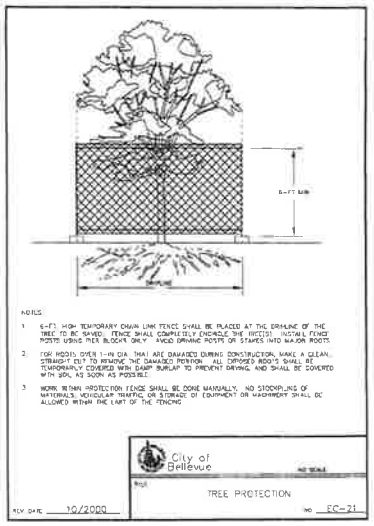
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. INSTALLATION: THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE QUARRY SPALLS SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS IN THE PLAN. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. AGGREGATE: 4" TO 8" QUARRY SPALLS PER WSDOT STD. SPECS. SEC. 9-13.6.\
3. ENTRANCE DIMENSIONS: THE AGGREGATE LAYER MUST BE AT LEAST 12" THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 100 FEET (UNLESS OTHERWISE APPROVE BY CIVIL INSPECTOR)
4. WASHING: IF CONDITIONS ON THE SITE ARE SUCH THAT MOST OF THE MUD IS NOT REMOVED FROM VEHICLE TIRES BY CONTACT WITH THE ROCK ENTRANCE, THEN THE TIRES MUST BE WASHED BEFORE VEHICLES ENTER A PUBLIC ROAD. WASH WATER MUST BE CARRIED AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE.
5. MAINTAINENCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAY OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY BY SWEEPING. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY.

2 STABALIZED CONSTRUCTION ENTRANCE
SCALE: NTS



3 CITY OF BELLEVUE STANDARD DETAIL
SCALE: NTS



4 CITY OF BELLEVUE STANDARD DETAIL
SCALE: NTS

King County

BELLEVUE STATION 9

(NEW BUILD)

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CG ENGINEERING
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CG PROJECT# 16015.902

PROJECT MANAGER	JPU
PREPARED BY	ZDS
APPROVED BY	GAG

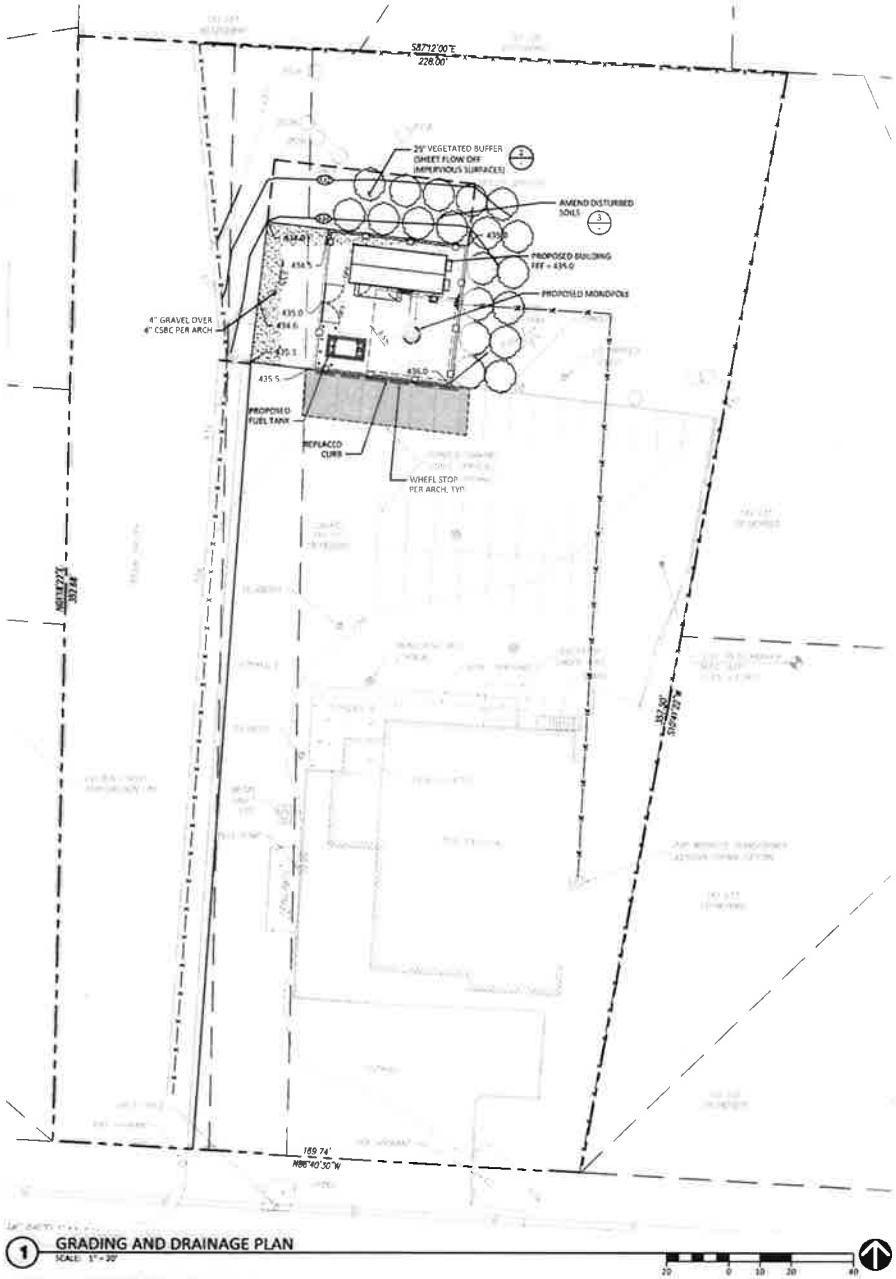
REV	DATE	DESCRIPTION
1	07/07/17	PERMIT RESUBMITTAL
2	07/27/17	PERMIT RESUBMITTAL
3	08/31/17	PERMIT RESUBMITTAL
4	02/19/18	PERMIT SUBMITTAL

PLAN REVIEWERS SIGNATURE

SHEET NAME
TEMPORARY EROSION CONTROL PLAN

SHEET NUMBER
C2.1

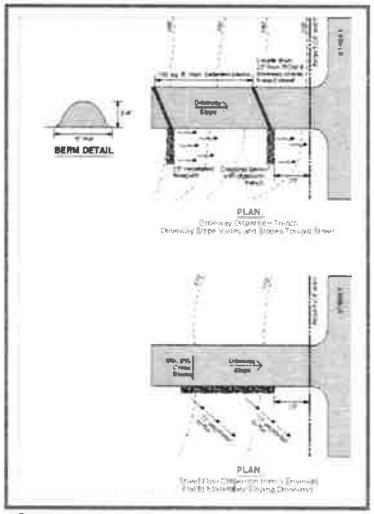
SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.



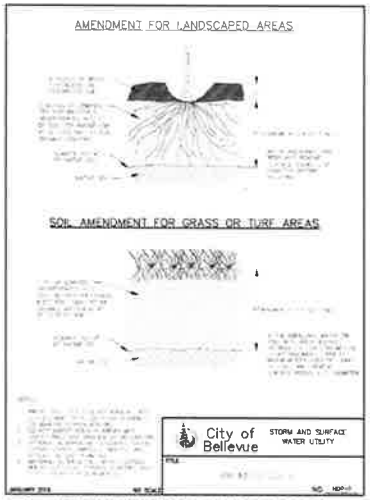
1 GRADING AND DRAINAGE PLAN
SCALE: 1" = 20'

GRADING QUANTITIES	
TOTAL EXCAVATION (CUT)	50 CU YDS TOTAL
EMBANKMENT (FILL)	250 CU YDS
TOTAL	200 CU YDS

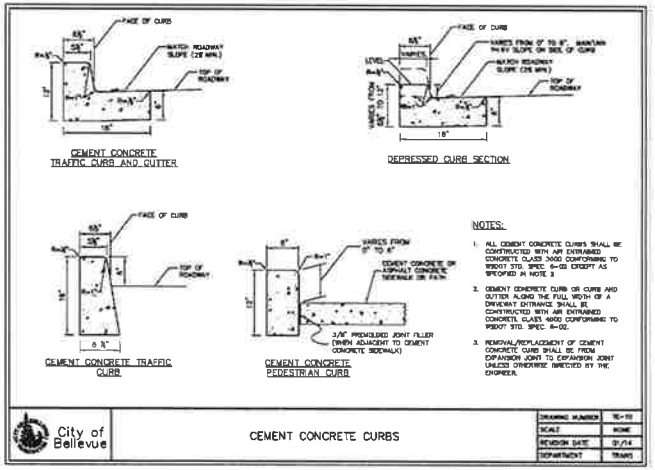
THE QUANTITIES SHOWN ABOVE ARE FOR THE PERMIT PROCESS ONLY. THESE VALUES ARE APPROXIMATE. DO NOT USE FOR BIDDING, PAYMENT, OR ESTIMATING PURPOSES.



2 SHEET FLOW DISPERSION DETAIL
SCALE: NTS



3 CITY OF BELLEVUE STANDARD DETAIL
SCALE: NTS



4 CITY OF BELLEVUE STANDARD DETAIL
SCALE: NTS

King County

BELLEVUE STATION 9

(NEW BUILD)

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CG ENGINEERING
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FAX (425) 778-5538

CG PROJECT # 16015.902

PROJECT MANAGER	JPU
PREPARED BY	ZDS
APPROVED BY	GAC

REV	DATE	DESCRIPTION
1	[illegible]	PERMIT RESUBMITTAL
2	[illegible]	PERMIT RESUBMITTAL
3	[illegible]	PERMIT RESUBMITTAL
4	[illegible]	PERMIT RESUBMITTAL
5	[illegible]	PERMIT SUBMITTAL

PLAN REVIEWERS SIGNATURE

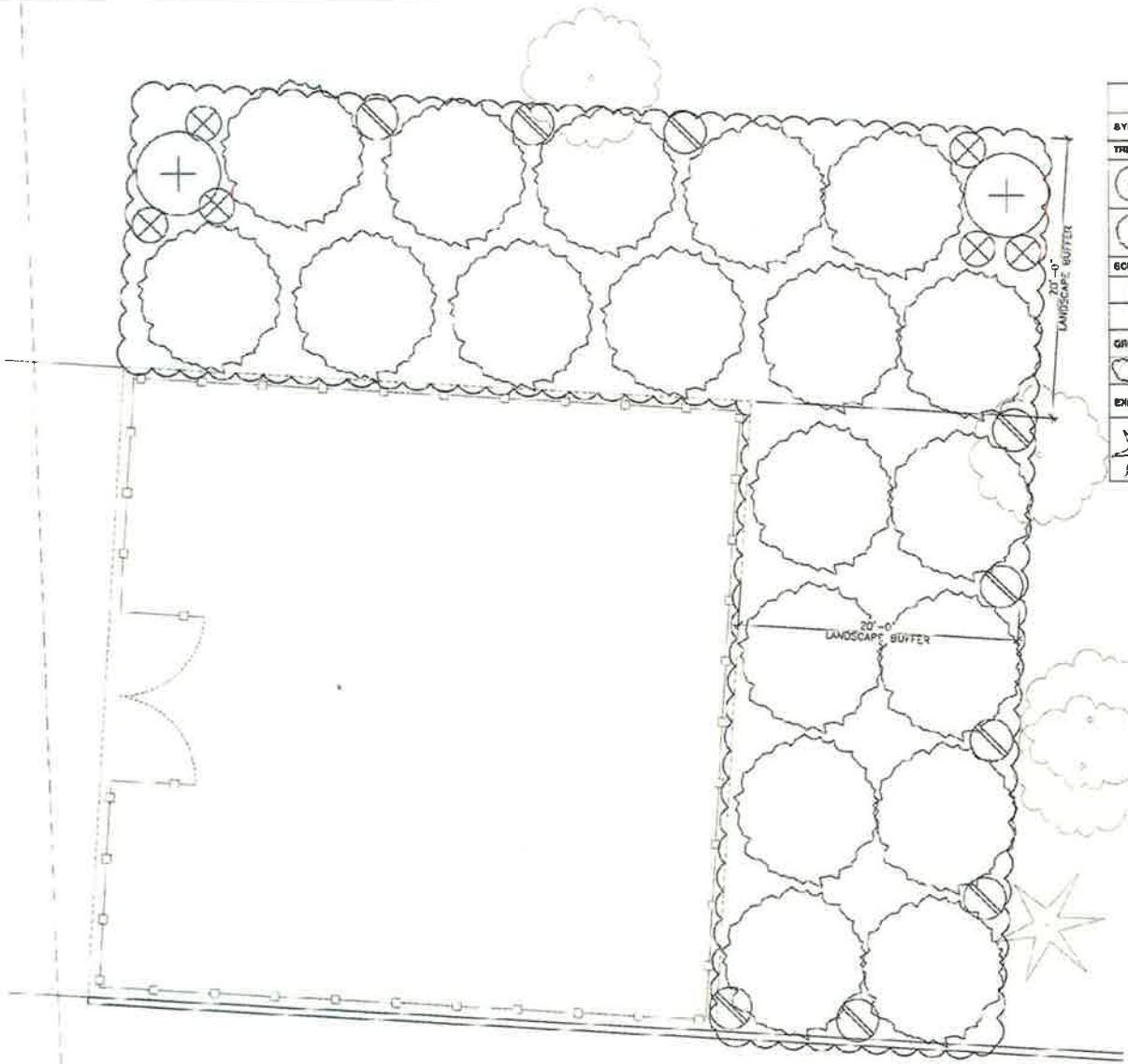
GREG GUILLEN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

SHEET NAME

GRADING AND DRAINAGE PLAN

SHEET NUMBER

C3.1



PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE/COMMENTS
TREES			
+	ACER CIRCINATUM	VINE MAPLE	8'-10" HT. B&B
◯	CALOCEDRUS DECURRENS	INCENSE CEDAR	6-7" HT B&B
SCHRUBS			
⊘	SPIRAEA DOUGLASII	DOUGLAS SPIREA	5 GAL. CONT. SPECIMEN QUALITY
⊗	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	5 GAL. CONT. SPECIMEN QUALITY
GROUNDCOVER			
▭	GAULTHERIA SHALLON	SALAL	1 GAL. PLANT @ 24" O.C.
EXISTING TREES			
✶	EXISTING TREE TO REMAIN		PRESERVE AND PROTECT

LANDSCAPE NOTES:

1. A TEMPORARY IRRIGATION SYSTEM SHALL BE PROVIDED FOR OPERATION THROUGHOUT TWO GROWING SEASONS, MAY 1ST TO SEPTEMBER 30TH, FOLLOWING PLANT INSTALLATION.
2. PROVIDE 3" BARK MULCH THROUGHOUT ALL PLANTING BEDS.
3. AMEND DISTURBED SOILS AS PER CITY STANDARDS (SEE DETAILS SHEET C3.1)
4. PRESERVE ALL EXISTING TREES OUTSIDE OF LEASE AREA AND PROPOSED LANDSCAPE BED AREAS. FOR TREE PROTECTION FOLLOW CITY DETAIL STANDARDS (SEE SHEET C2.1)
5. PROVIDE MINIMUM 6" OF TOPSOIL THROUGHOUT AND PIT PLANTING SOIL OF 2x SIZE OF ROOT BALL

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
T. SHAWN PARSONS
CERTIFICATE NO. 307

NORTH

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

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

DOTLAN Public Development
1208 6TH AVE S, SUITE 207
SEATTLE, WA 98134
PHONE: (206) 486-1629
FAX: (206) 652-0136
WWW.DOTLAN.COM

CAMP+ ASSOCIATES
LANDSCAPE ARCHITECTURE

PROJECT MANAGER: PK
PREPARED BY: M/AO
APPROVED BY: PN

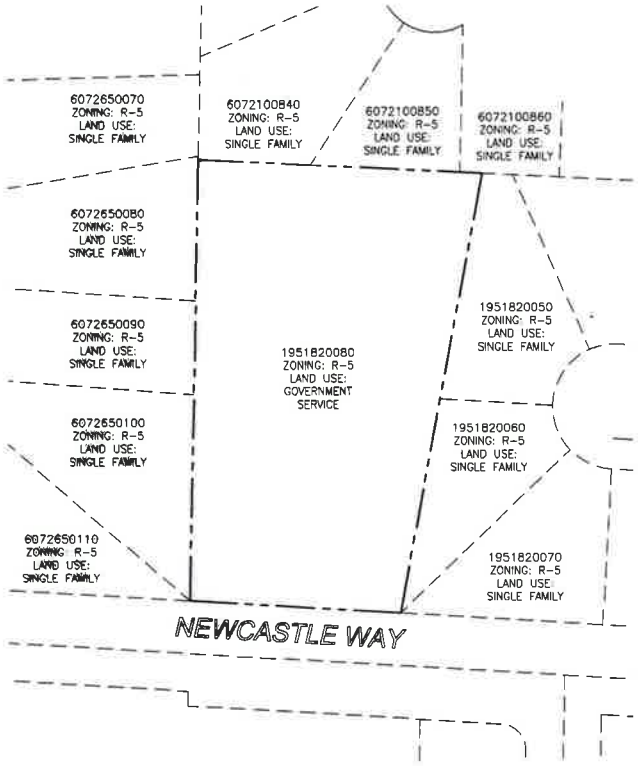
03/31/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
09/01/16	PLAN REVIEW COMMENTS
08/05/16	ISSUED FOR PERMIT
07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
PROPOSED LANDSCAPE PLAN

SHEET NUMBER
L-1

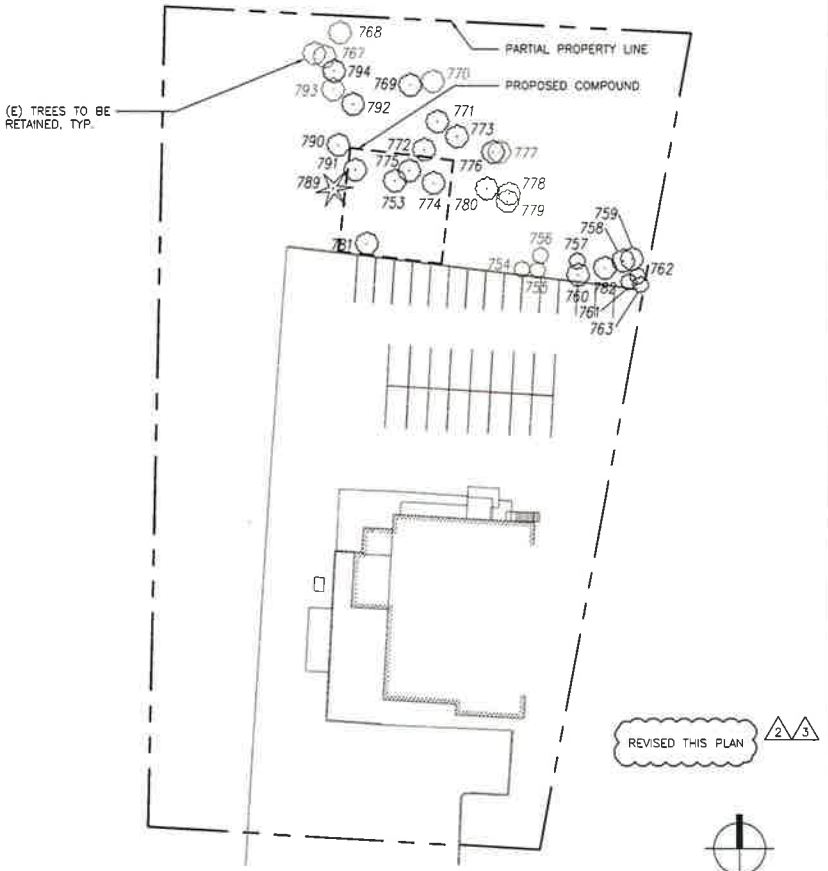


1 **ADJACENT PARCEL ZONING AND LAND USE**

SCALE: NONE

NO.	TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
753	DECIDUOUS (DS15/14)	15"/14"	112.3'	1
757	DECIDUOUS (DS30)	30"	117.0'	1
758	DECIDUOUS (DS14)	14"	–	1
759	DECIDUOUS (DS14)	14"	–	1
760	DECIDUOUS (DS14)	14"	–	1
761	DECIDUOUS (DS11)	11"	–	1
762	DECIDUOUS (DS25)	25"	–	1
763	DECIDUOUS (DS26)	26"	–	1
769	DECIDUOUS (DS16)	16"	–	1
771	DECIDUOUS (DS18)	18"	–	1
772	DECIDUOUS (DS14)	14"	–	1
773	DECIDUOUS (DS14)	14"	–	1

NO.	TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
774	DECIDUOUS (DS16)	16"	–	1
775	DECIDUOUS (DS22)	22"	–	1
776	DECIDUOUS (DS16)	16"	–	1
780	DECIDUOUS (DS17)	17"	–	1
781	DECIDUOUS (DS14)	14"	–	1
782	DECIDUOUS (DS14/14)	14"/14"	–	1
789	CEDAR (CE60)	60"	–	1
790	DECIDUOUS (DS10)	10"	–	1
791	DECIDUOUS (DS30)	30"	112.3'	1
792	DECIDUOUS (DS09)	9"	–	1
794	DECIDUOUS (DS40)	40"	–	1
			TOTAL	23



2 **TREES TO BE REMOVED**

SCALE: NONE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

QUELLA PACIFIC CORPORATION
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WWW.QUELLA.COM

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PHONE: (425) 741-0392
FAX: (425) 282-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

2	03/01/17	SITE RELOCATION
1	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

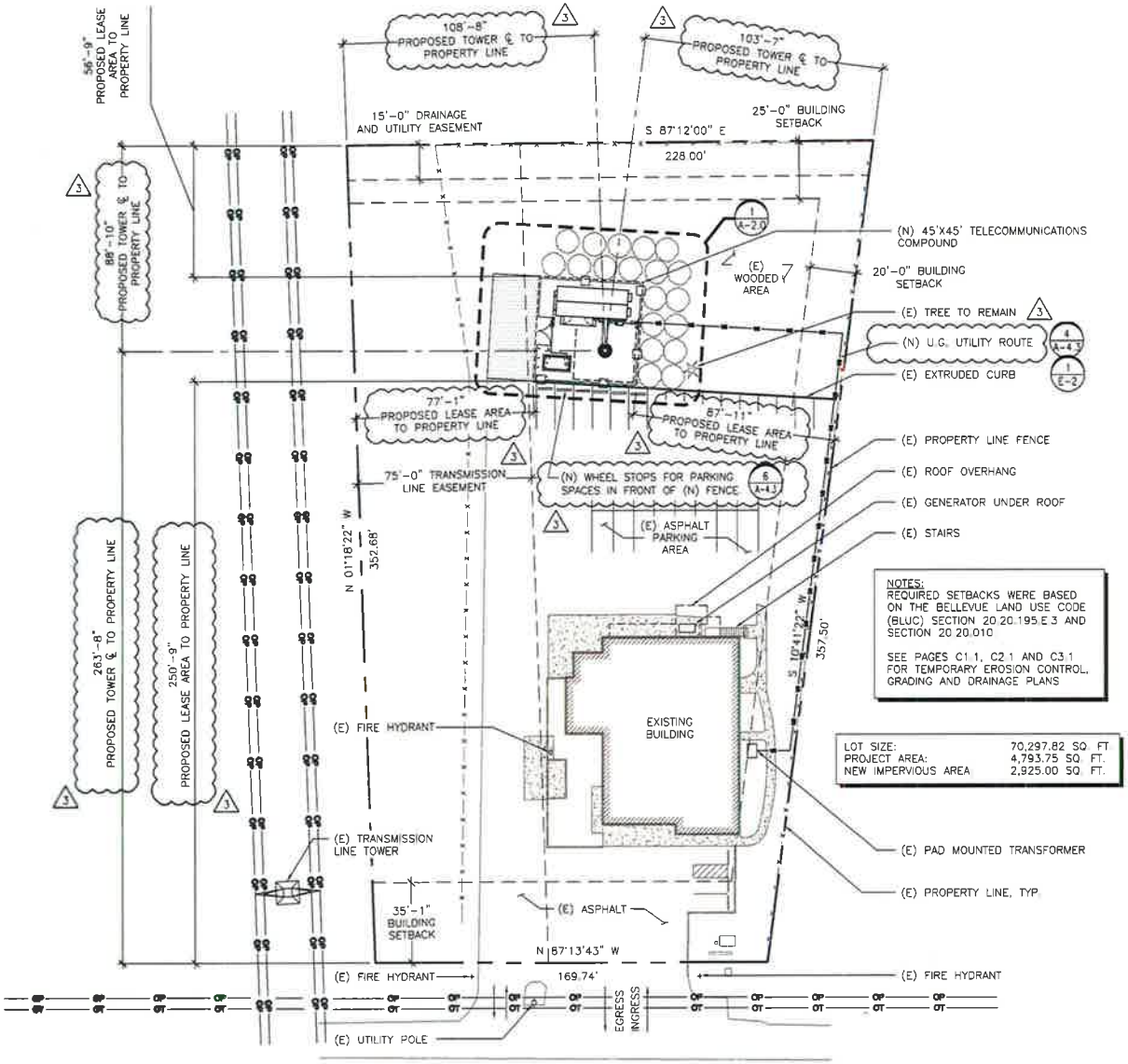
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

7/27 REGISTERED ARCHITECT PAUL NAKATA STATE OF WASHINGTON

SHEET NAME
ADJACENT PARCEL ZONING & TREE REMOVAL

SHEET NUMBER
A-1.0



1 OVERALL PROPOSED SITE PLAN

SCALE: 1" = 25'-0" (22"x34"), 1" = 50'-0" (11x17)

DIGALERT
Call Toll Free 811 or
1-800-424-5555
2 Working Days Before You Dig
WWW.CALLBEFOREYOUDIG.ORG

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
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BELLEVUE, WA 98006

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FAX: (206) 490-3835
WWW.OSELLA.COM

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LYNNWOOD, WA 98036
PHONE: (425) 740-6280
FAX: (425) 252-2966
WWW.CAMPXSOC.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AID
APPROVED BY: PN

1	02/01/17	SITE RELOCATION
2	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
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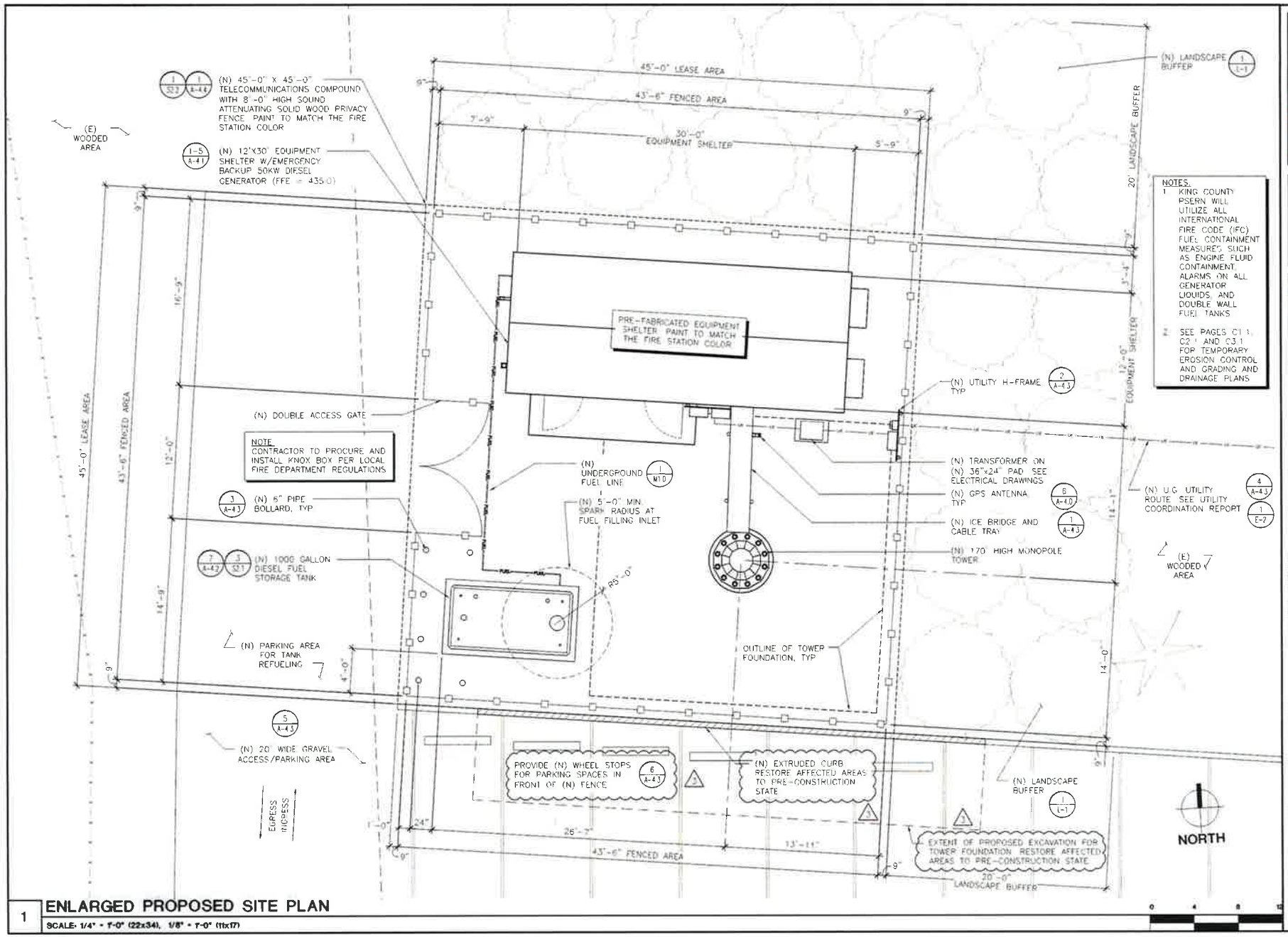
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
OVERALL PROPOSED SITE PLAN

SHEET NUMBER
A-1.1



1 **ENLARGED PROPOSED SITE PLAN**

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

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

ODELIA PACIFIC CORPORATION
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SEATTLE, WA 98108
PHONE: (206) 494-3835
FAX: (206) 494-3836
WWW.ODELIA.COM

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LYNNWOOD, WA 98036
PHONE: (425) 744-0397
FAX: (425) 253-2800
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM / AIO

APPROVED BY: PN

02/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
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08/05/16	ISSUED FOR PERMIT
07/28/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
ENLARGED PROPOSED SITE PLAN

SHEET NUMBER
A-2.0

ANTENNA / COAX SCHEDULE

RAD CENTER	PATH	MOUNTING HEIGHT	AZIMUTH	TOWER LEG	QTY	DESCRIPTION	COAX	COAX LENGTH
165'-0"	CAPITOL HILL	-	309°	-	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±200'
160'-0"	NORCOM	-	351°	-	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±195'
-	-	135'-0"	-	-	2	17'-4" COLLINEAR RX OMNI ANTENNA	AVA5-50FX	±165'
-	-	135'-0"	-	-	2	17'-4" COLLINEAR TX OMNI ANTENNA	AVA5-50FX	±165'

NOTE

PROVIDE (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM

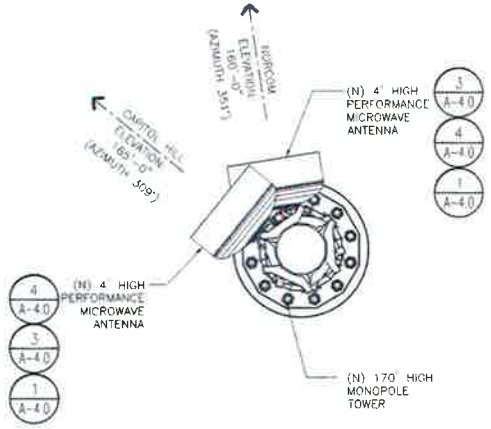
SYSTEM SHALL INCLUDE (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM (TTA)

(4) 7/8" COAXIAL CABLES (2 LINE ARE JUMPERS FROM THE TTA TO ANTENNAS)

(1) 1/2" COAXIAL CABLE (FSJ4-50B)

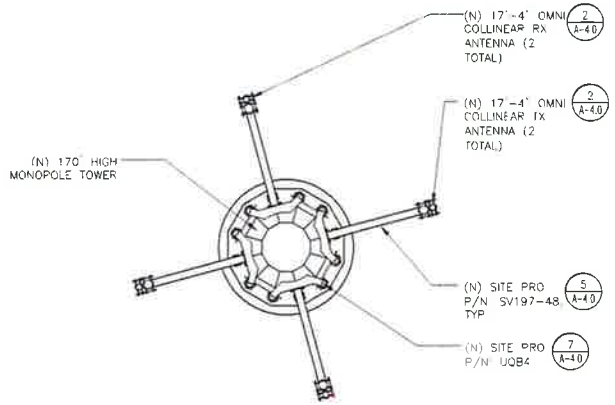
GENERAL NOTES

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.



1 **MW ANTENNA PLAN AT 160' AND 165'**

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



NORTH

2 **ANTENNA PLAN AT 135'**

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

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

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WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

02/01/17	SITE RELOCATION
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07/29/16	ISSUED FOR PRELIM. PERMIT

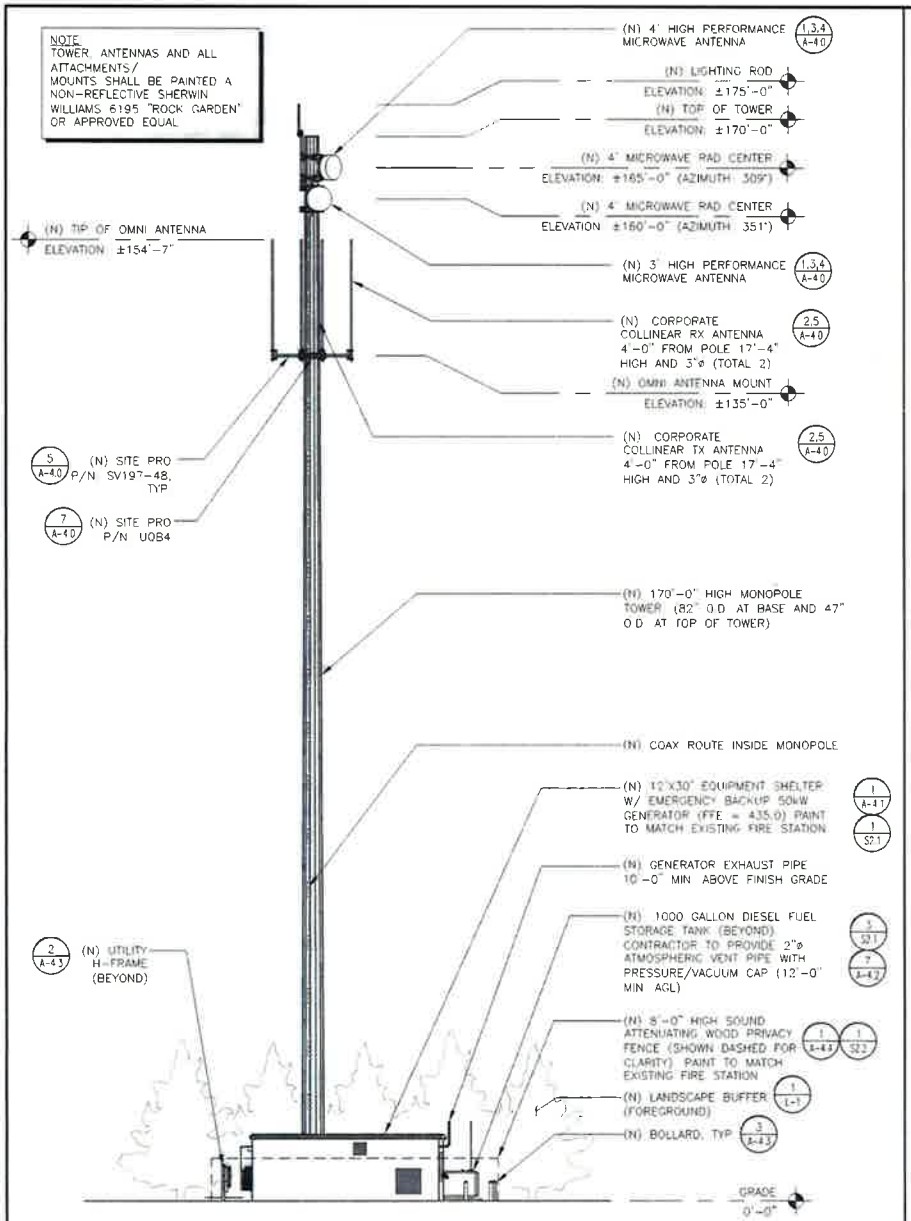
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
ALLA AIDOR
STATE OF WASHINGTON

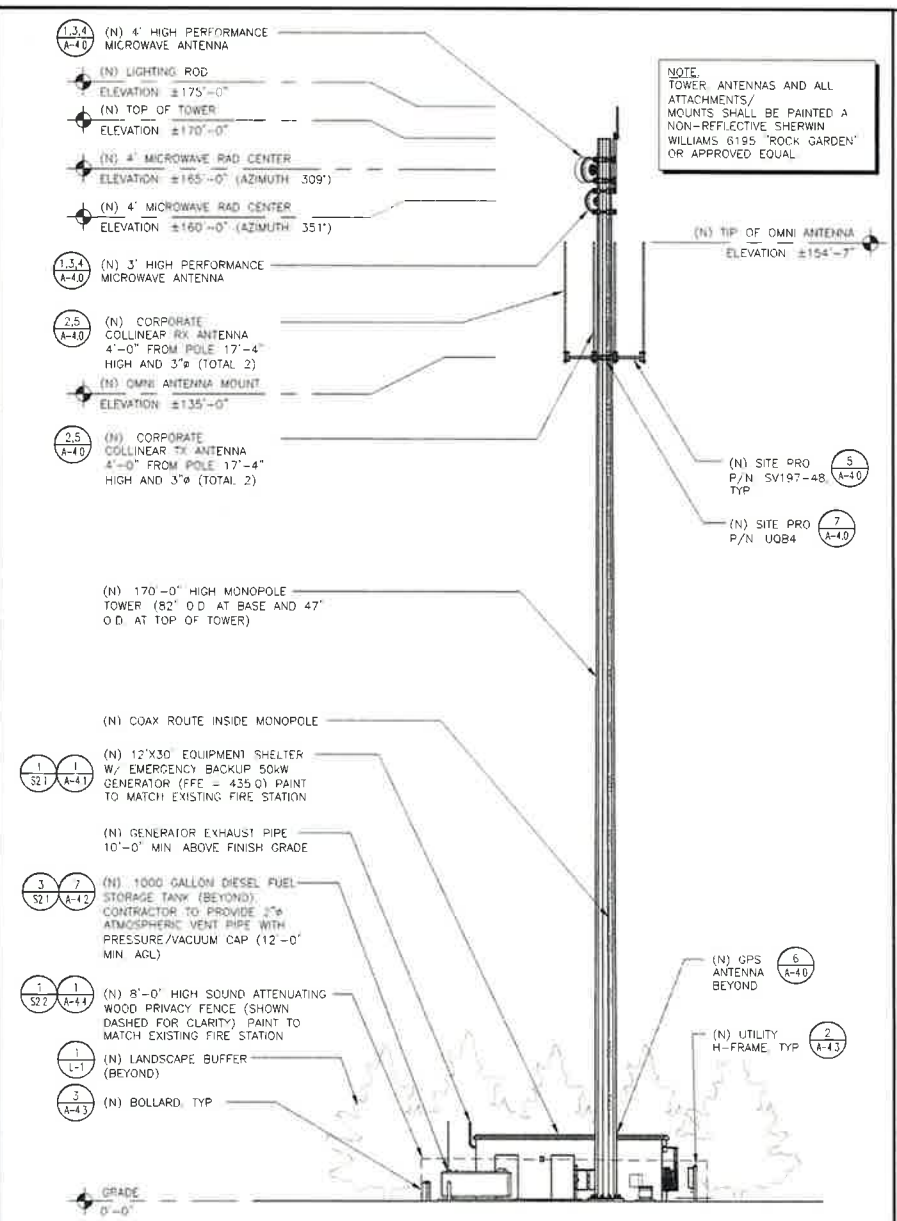
SHEET NAME
PROPOSED ANTENNA PLAN

SHEET NUMBER
A-2.1



1 PROPOSED NORTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 PROPOSED SOUTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

ODEUM PACIFIC CORPORATION
10605 4TH AVE. E., SUITE 202
SEATTLE, WA 98168
PHONE: (206) 499-3826
FAX: (206) 499-3830
WWW.ODEUM.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-0382
FAX: (425) 252-2660
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM / AIO

APPROVED BY: PN

1	02/01/17	SITE RELOCATION
1	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
	06/06/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

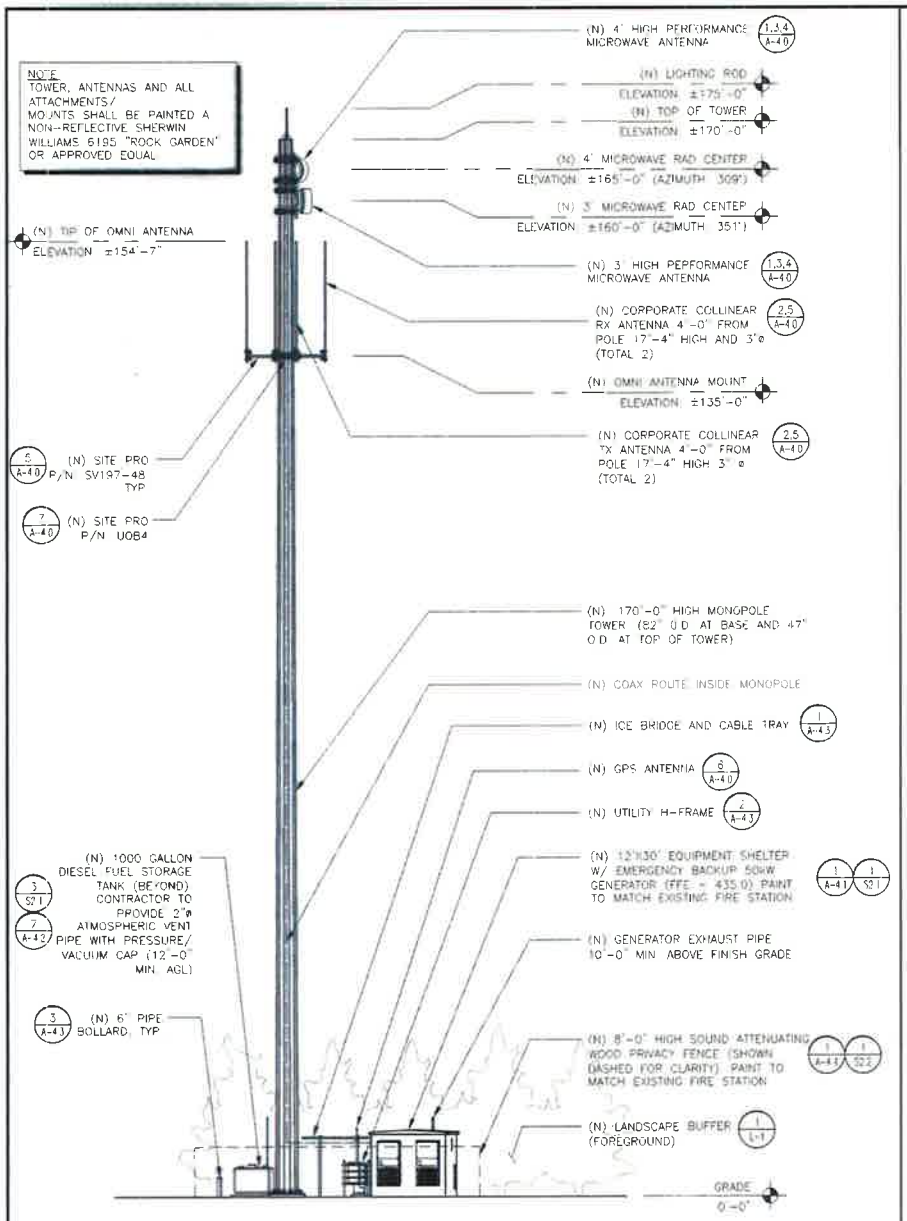
REGISTERED ARCHITECT
PAUL A. PATTEN
STATE OF WASHINGTON

SHEET NAME

PROPOSED ELEVATIONS

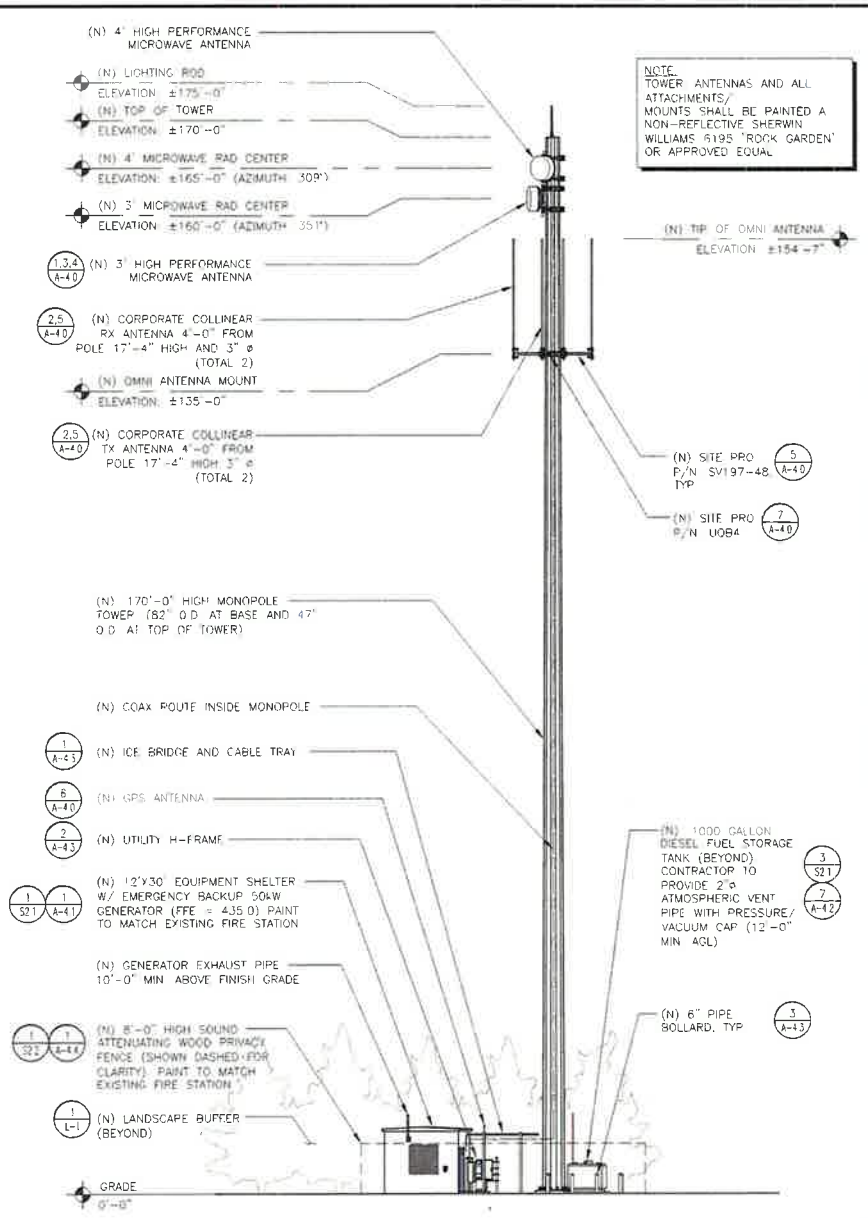
SHEET NUMBER

A-3.0



1 PROPOSED EAST ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 PROPOSED WEST ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

ODELIA PACIFIC CORPORATION
1506 6TH AVE. S., SUITE 202
SEATTLE, WA 98101
PHONE: (206) 496-3826
FAX: (206) 496-3835
WWW.ODELIA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-8592
FAX: (425) 252-2880
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

1	02/01/17	SITE RELOCATION
2	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

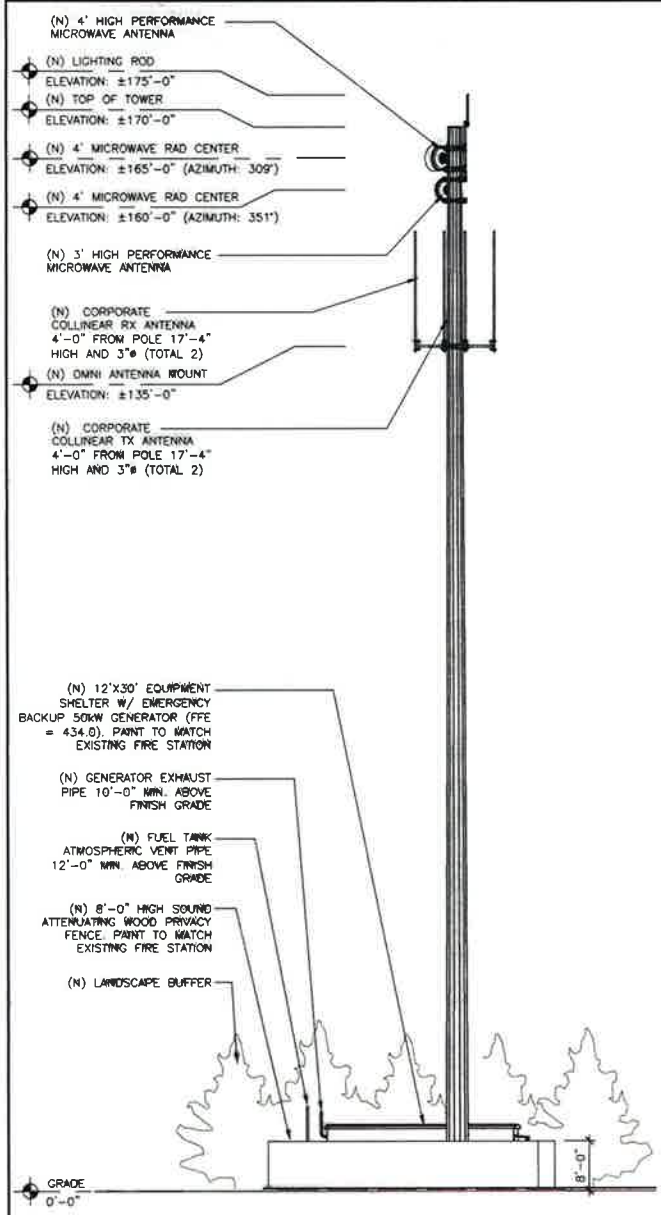
7727 REGISTERED ARCHITECT STATE OF WASHINGTON

SHEET NAME

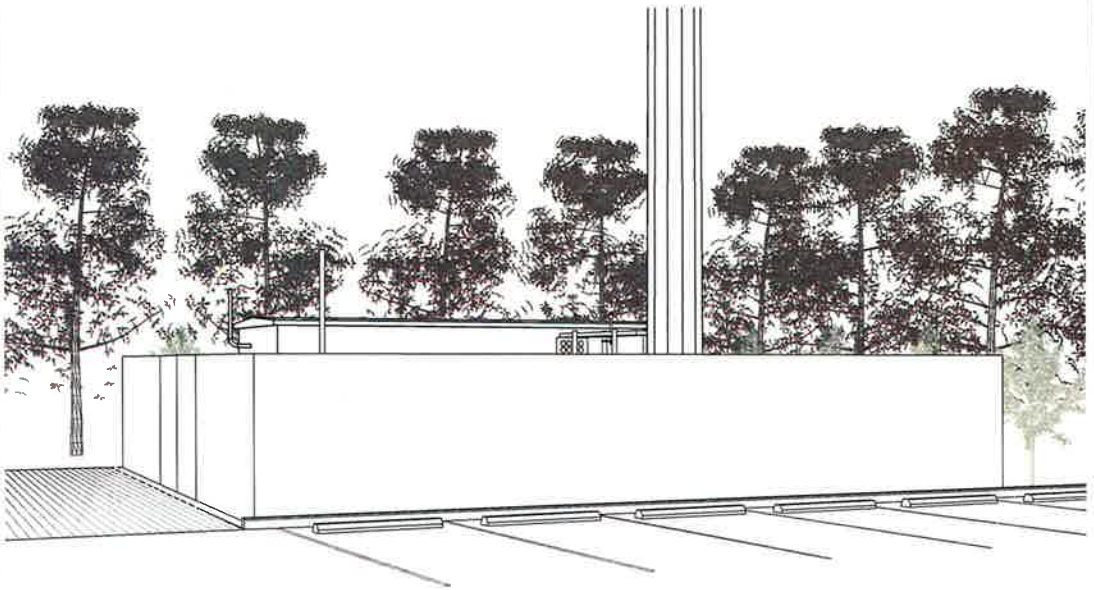
PROPOSED ELEVATIONS

SHEET NUMBER

A-3.1



1 **PROPOSED SOUTH ELEVATION**
NOT TO SCALE



2 **PROPOSED SOUTHWEST VIEW DETAIL** △3
NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

OSELLA PACIFIC CORPORATION
5308 6TH AVE. S. SUITE 207
SEATTLE, WA 98108
PHONE: (206) 450-1626
FAX: (206) 499-3631
WWW.OSELLA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 740-4392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: CJC
PREPARED BY: LM/AIO
APPROVED BY: PN

△3	02/01/17	SITE RELOCATION
△2	10/14/16	PLAN REVIEW COMMENTS
△1	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
7777 REGISTERED ARCHITECT PAUL NOON STATE OF WASHINGTON

SHEET NAME
PROPOSED SOUTHWEST VIEW DETAIL

SHEET NUMBER
A-3.2

GENERAL NOTES

GENERAL NOTES:

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

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

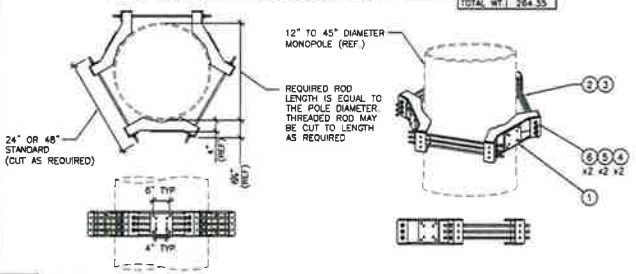
3. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS TO CONFIRM LENGTHS OF CABLE TRAYS AND ELECTRICAL LINES AND ANTENNA MOUNTING.

-

UNIVERSAL RING MOUNT ASSEMBLY (SITEPRO P/N: LWRM)

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
①	3	X-LWRM	RING MOUNT WELDMENT		68.16	204.48
②	9	GSBR-48	5/8" x 48" THREADED ROD (HDG)	48 IN	0.35	3.16
③	9	GSBR-24	5/8" x 24" THREADED ROD (HDG)	24 IN	0.35	3.16
④	18	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.61
⑤	18	GSBLW	5/8" HDG LOCKWASHER		0.03	0.47
⑥	18	ASBNUT	5/8" HDG A325 HEX NUT		0.13	2.34
					TOTAL WT.	264.35

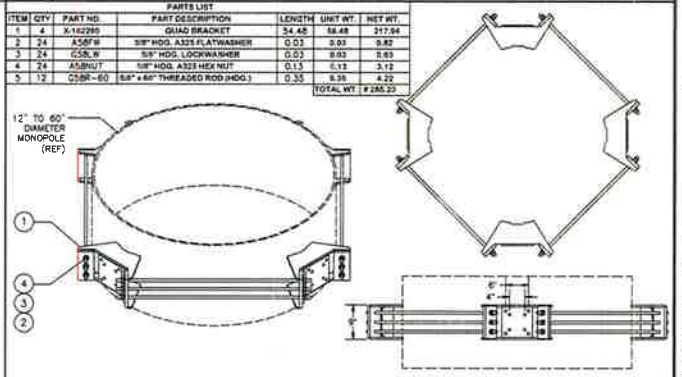


3 NOT TO SCALE

SITE PRO QUAD UNIVERSAL RINGMOUNT UQB4 DETAIL

PARTS LIST

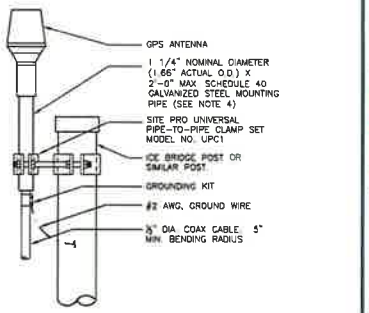
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-162295	QUAD BRACKET	54.48	54.48	217.94
2	24	A58FW	5/8" HDG. A325 FLATWASHER	0.03	0.03	0.82
3	24	GSBLW	5/8" HDG. LOCKWASHER	0.03	0.03	0.83
4	24	ASBNUT	1/8" HDG. A325 HEX NUT	0.13	0.13	3.12
5	12	GSBR-60	5/8" x 60" THREADED ROD (HDG.)	0.35	0.35	4.22
					TOTAL WT.	#245.23



7 NOT TO SCALE

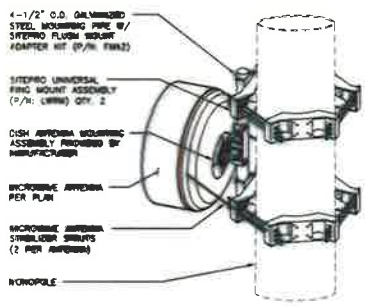
NOTES:

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



6

DISH ANTENNA MOUNTING

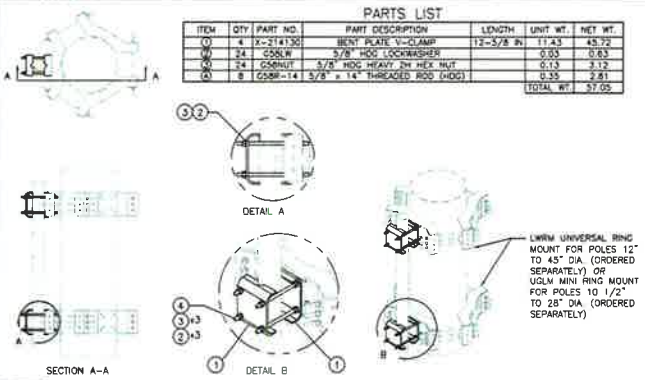


1 NOT TO SCALE

FLUSH MOUNT ADAPTER KIT (SITEPRO P/N: FMA2)

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
①	4	X-214130	BENT PLATE V-CLAMP	12-3/8 IN.	11.43	45.72
②	24	GSBLW	5/8" HDG LOCKWASHER		0.03	0.83
③	24	GSBNUT	5/8" HDG HEAVY 2H HEX NUT		0.13	3.12
④	8	GSBR-14	5/8" x 14" THREADED ROD (HDG)		0.35	2.81
					TOTAL WT.	57.05



4 NOT TO SCALE

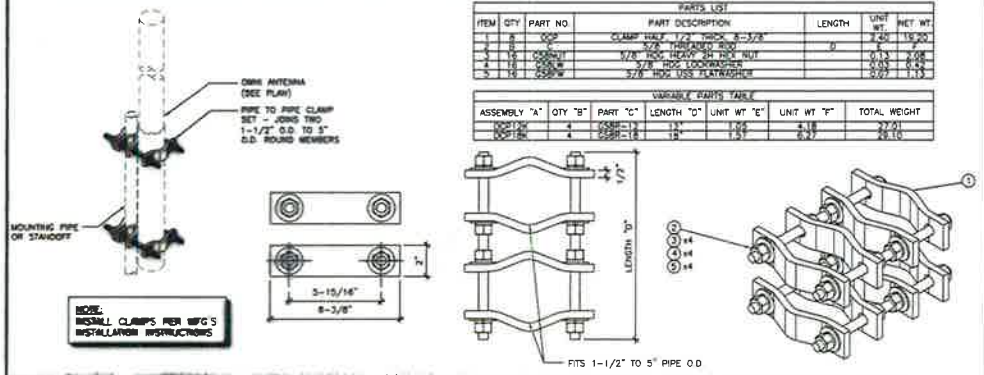
OMNI ANTENNA MOUNTING WITH SITE PRO DCPXK PIPE TO PIPE CLAMP

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	8	DCP	CLAMP HALF, 1/2" THICK, 8-3/8"		2.40	19.20
2	8	C	5/8" THREADED ROD	"D"	#	#
3	16	GSBNUT	5/8" HDG HEAVY 2H HEX NUT		0.13	2.08
4	16	GSBLW	5/8" HDG LOCKWASHER		0.03	0.42
5	16	GSBFW	5/8" HDG USS FLATWASHER		0.07	1.13

VARIABLE PARTS TABLE

ASSEMBLY "A"	QTY "B"	PART "C"	LENGTH "D"	UNIT WT "E"	UNIT WT "F"	TOTAL WEIGHT
DCPXK	4	GSBR-12	12"	1.09	5.18	27.01
DCPXK	4	GSBR-18	18"	1.31	6.27	33.10

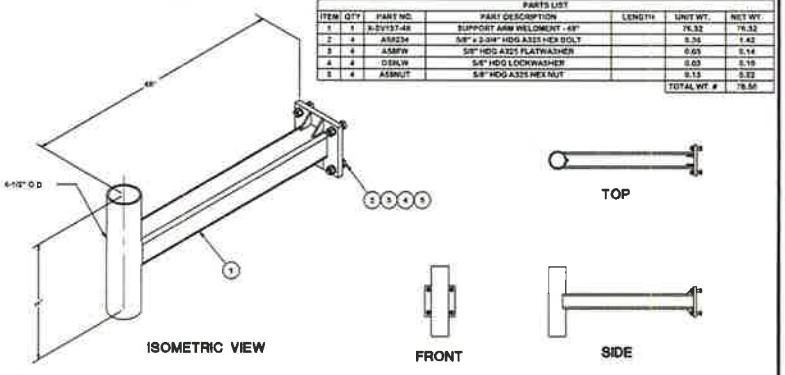


2 NOT TO SCALE

SITE PRO 48" SUPPORT ARM SV197-48 DETAIL

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	X-SV197-48	SUPPORT ARM WELDMENT - 48"		76.32	76.32
2	4	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT		0.36	1.42
3	4	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.14
4	4	GSBLW	5/8" HDG LOCKWASHER		0.03	0.15
5	4	ASBNUT	5/8" HDG A325 HEX NUT		0.13	0.52
					TOTAL WT. #	78.55



5 NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

ODELL PACIFIC CORPORATION
5508 8TH AVE. S., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 400-3826
FAX: (206) 400-3839
WWW.ODELW.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-5392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

2	02/01/17	SITE RELOCATION
1	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
	08/03/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

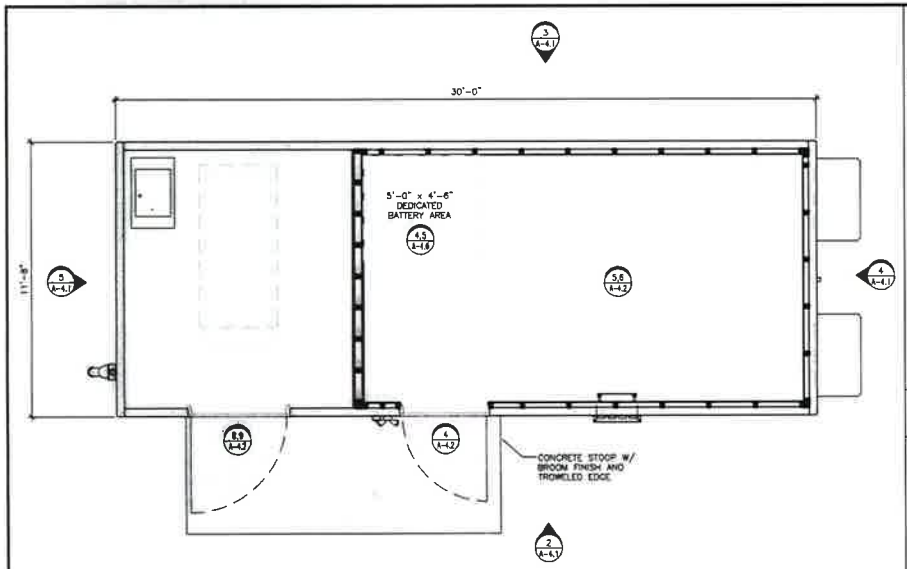
2727 REGISTERED ARCHITECT PAUL NIXON STATE OF WASHINGTON

SHEET NAME

ANTENNA MOUNTING DETAILS

SHEET NUMBER

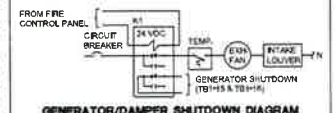
A-4.0



NOTES:
1. SHELTER IS OWNER FURNISHED, CONTRACTOR INSTALLED (O.F.C.I.)
2. ALL MEASUREMENTS SHALL BE VERIFIED WITH PREFABRICATED SHELTER SHOP DRAWING PRIOR TO ANY CONSTRUCTION WORK OR COORDINATION.
3. REFER TO STRUCTURAL DRAWINGS FOR SHELTER FOUNDATION AND SHELTER ANCHORING TO FOUNDATION DETAILS.
4. CONTRACTOR TO USE EXOTHERMIC WELD AT ALL GROUND TAILS FROM BUILDING TO GROUND RING, SEE ALSO GROUNDING PLAN.

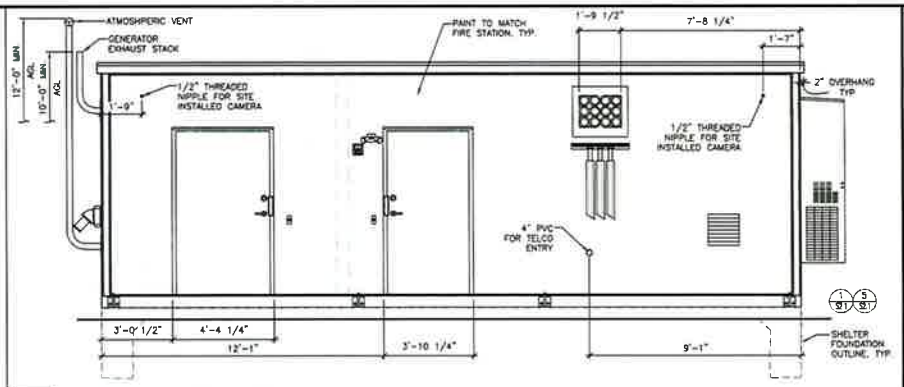
FM-200 CLEAN AGENT FIRE SUPPRESSION SYSTEM

FIRE CONTROL PANEL ALARM SIGNAL SHUTS DOWN AIR HANDLER UNITS AND CLOSES FIRE/SMOKE DAMPERS. DAMPERS SHALL BE INTERLOCKED WITH GENERATOR.

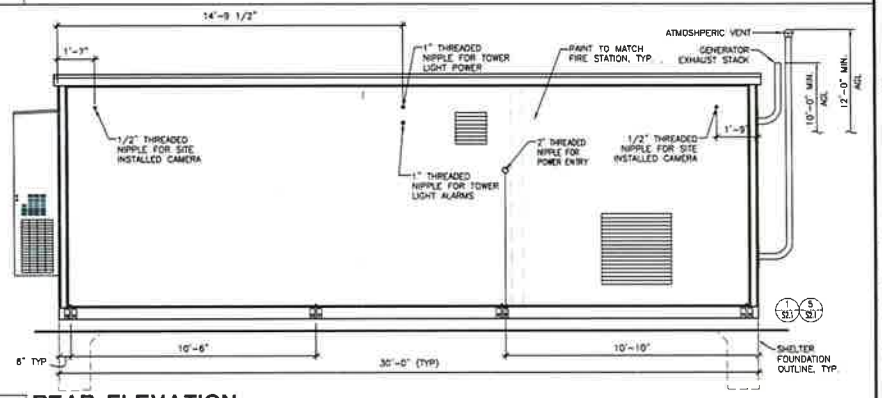


GENERATOR/DAMPER SHUTDOWN DIAGRAM
SCALE: NONE

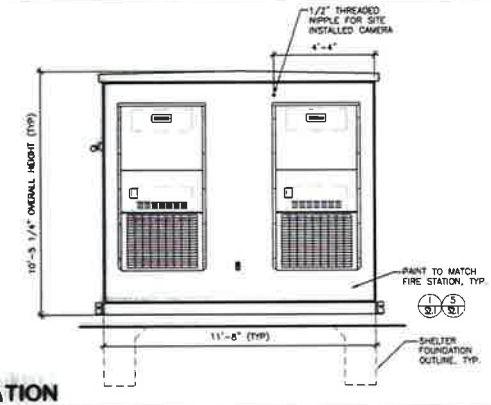
1 TYPICAL SHELTER PLAN VIEW
SCALE 3/8" - 1'-0" (22x34) 3/16"- 1'-0" (11x17)



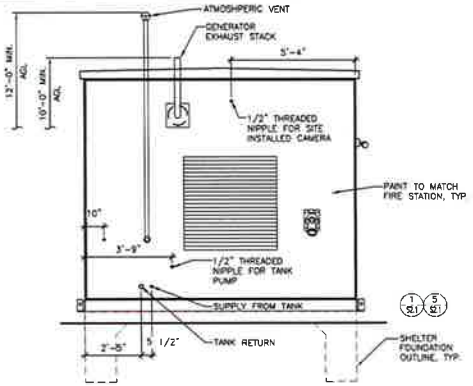
2 FRONT ELEVATION
SCALE 3/8" - 1'-0" (22x34) 3/16"- 1'-0" (11x17)



3 REAR ELEVATION
SCALE 3/8" - 1'-0" (22x34) 3/16"- 1'-0" (11x17)



4 RIGHT ELEVATION
SCALE 3/8" - 1'-0" (22x34) 3/16"- 1'-0" (11x17)



5 LEFT ELEVATION
SCALE 3/8" - 1'-0" (22x34) 3/16"- 1'-0" (11x17)

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

PACIFIC DEMPSEY CORPORATION
5500 6TH AVE. S., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 450-9535
FAX: (206) 450-9533
WWW.DEMPSEY.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 742-6792
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AIO
APPROVED BY: PN

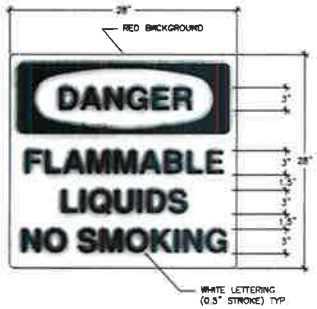
02/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
09/07/16	PLAN REVIEW COMMENTS
08/25/16	ISSUED FOR PERMIT
07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
7727 REGISTERED ARCHITECT PAUL N. POON STATE OF WASHINGTON

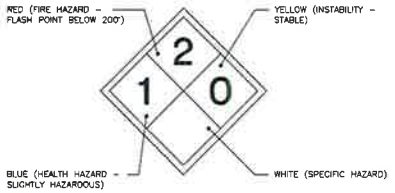
SHEET NAME
SHELTER DETAILS

SHEET NUMBER
A-4.1



9 **FLAMMABLE LIQUIDS SIGN**

NOT TO SCALE



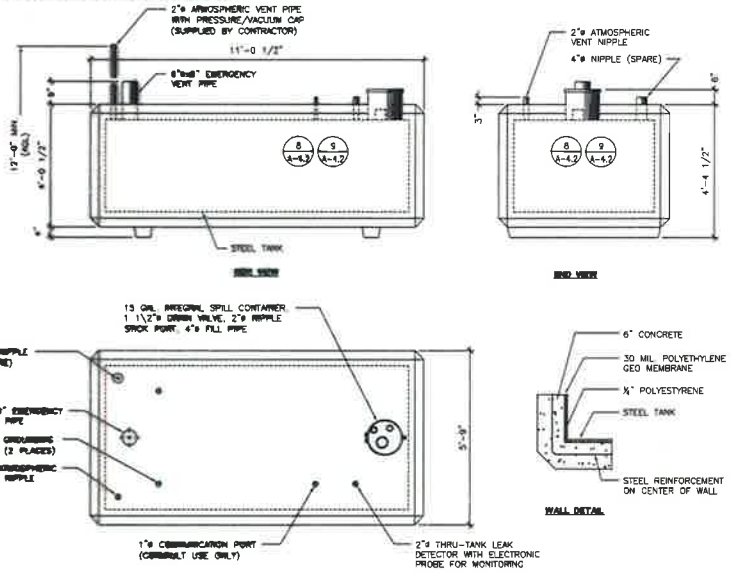
8 **HAZARDOUS MATERIAL CLASSIFICATION SIGN (DIESEL)**

NOT TO SCALE

NOTE:
INSTALL PER MANUFACTURER SPECIFICATIONS AND FCC GUIDELINES

4 **RF WARNING SIGN**

NOT TO SCALE

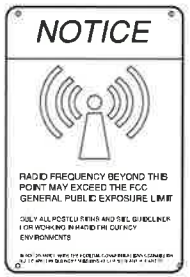


CONVAULT 1000 GAL. TANK NOTES:

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 SKIN 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



NOTE:
INSTALL PER MANUFACTURER SPECIFICATIONS AND FCC GUIDELINES

5 **RF WARNING SIGN**

NOT TO SCALE

⚠ NOTICE ⚠

GUIDLINES FOR WORKING IN RADIO FREQUENCY ENVIRONMENTS

- All personnel should have electromagnetic energy (EME) awareness training
- All personnel entering this site must be authorized
- Obey all posted signs
- Assume all antenna are active
- Before working on antennas, notify owners and disable appropriate transmitters
- Maintain minimum 3 feet clearance from all antennas
- Do not stop in front of antennas
- Use personal RF monitors while working near antennas
- Never operate transmitters without shields during normal operation
- Do not operate base station antennas in equipment room

6 **RF NOTICE SIGN**

NOT TO SCALE

1 **NOT USED**

2 **NOT USED**

3 **NOT USED**

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

DGELA Pacific Geomorphon
5030 6TH AVE. S., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 430-3626
FAX: (206) 430-9835
WWW.DGELA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 740-6392
FAX: (425) 252-2880
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/A/O

APPROVED BY: PN

3	02/01/17	SITE RELOCATION
2	10/14/16	PLAN REVIEW COMMENTS
1	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
MAX NOOR
STATE OF WASHINGTON

SHEET NAME

FUEL TANK AND SIGNAGE DETAILS

SHEET NUMBER

A-4.2

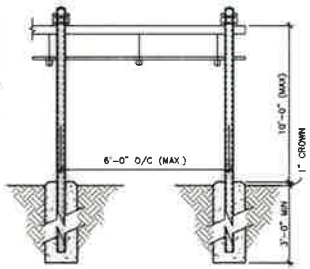
NOTES:

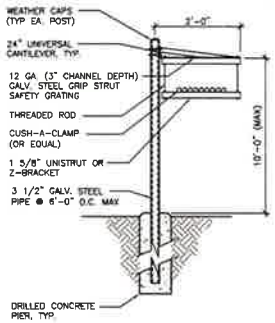
CONNECT EACH SUPPORT LEG TO GROUND RUNS PER GROUNDING DETAILS AND SPECS.

ALL STEEL PLATES, BOLTS, PIPES OR OTHER COMPONENTS TO BE HOT ROLLED GALVANIZED AND CONFORM W/ THE STANDARD FENCE SPECS

CABLE SUPPORT SPACING EVERY 3'-0" O.C.

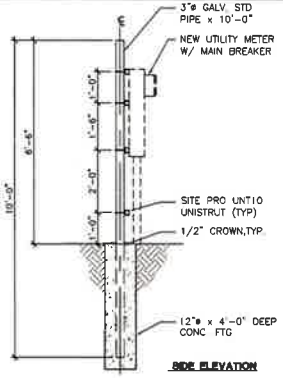
WAVEGUIDE BRIDGE TO BE SUPPLIED BY CONTRACTOR



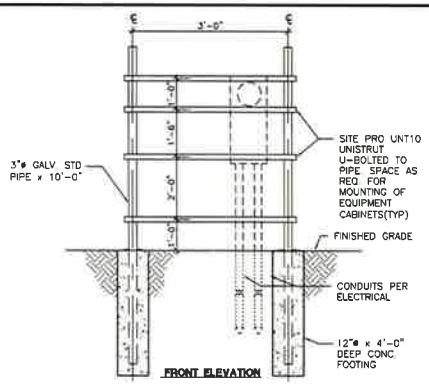


1 ICE BRIDGE DETAIL

NOT TO SCALE

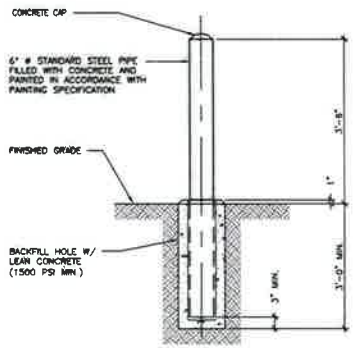


SIDE ELEVATION



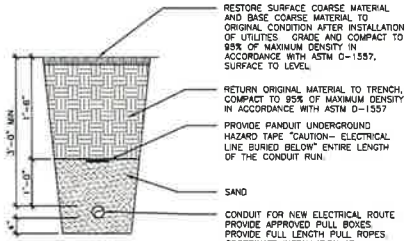
FRONT ELEVATION

2 UTILITY RACK DETAIL



3 BOLLARD DETAIL

NOT TO SCALE



NOTE:
BACKFILL MATERIAL SHOULD BE SUITABLE MATERIAL FREE OF ORGANIC MATERIAL WITHOUT ANY ROCK GREATER THAN 4" IN SIZE IN THE GREATEST DIMENSION.

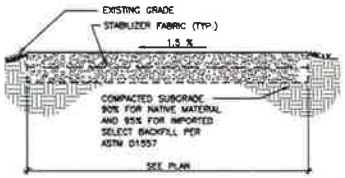
4 ELECTRICAL TRENCH DETAIL

NOT TO SCALE

LEASE AREA

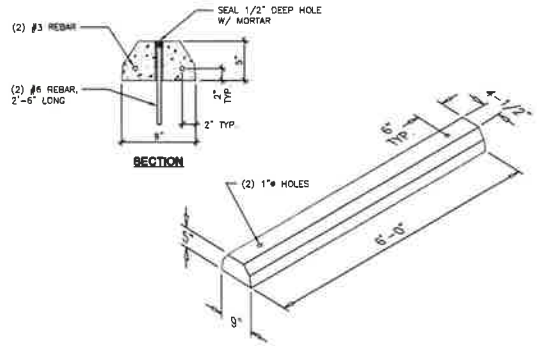
BASE COURSE: 4" MIN. OF COMPACTED A-8 COARSE AGGREGATE

TOP COURSE: 4" MIN. OF COMPACTED 3/4 WASHED ROCK



5 GRAVEL PAVING DETAIL

NOT TO SCALE



6 PRECAST CONCRETE WHEEL STOP

NOT TO SCALE

3

7 NOT USED

-

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

PACIFIC CORPORATION
1506 8TH AVE. S., SUITE 202
SEATTLE, WA 98109
PHONE: (206) 439-3520
FAX: (206) 439-3539
WWW.ODELIN.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-8392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

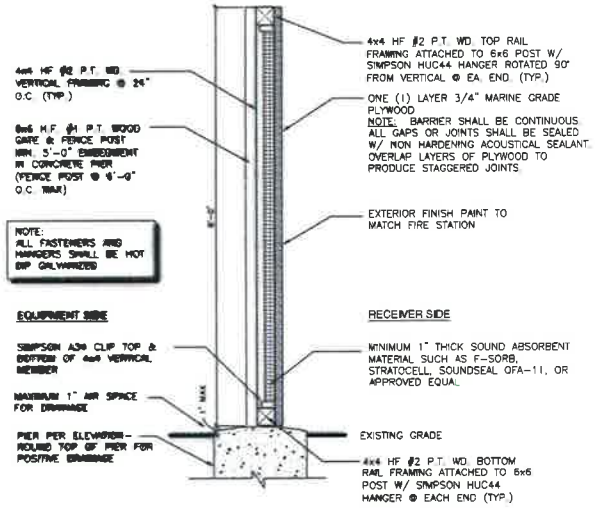
REGISTERED ARCHITECT
PAUL NIXON
STATE OF WASHINGTON

SHEET NAME

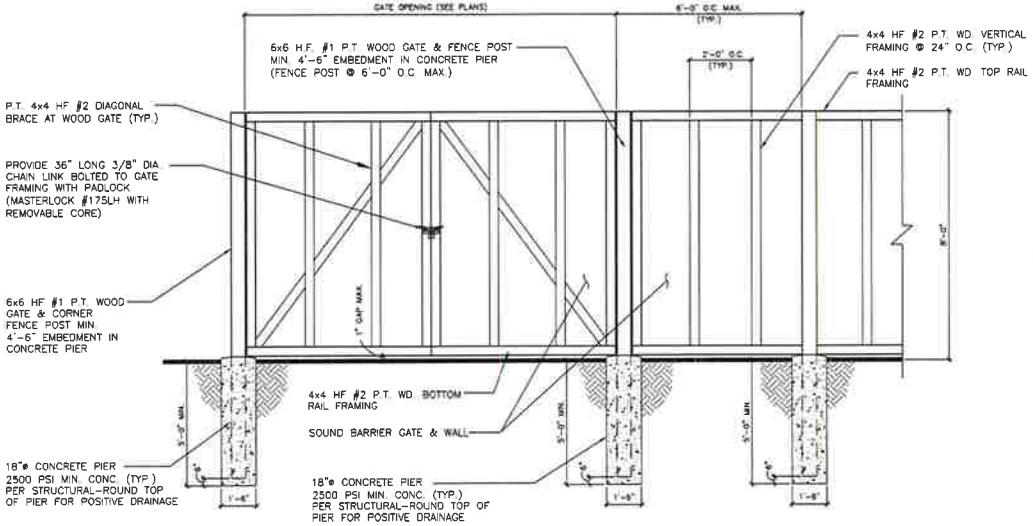
DETAILS

SHEET NUMBER

A-4.3



SECTION



ELEVATION

NOTES:

1. MATERIALS SUCH AS SIDING MAY BE ADDED TO THE EXTERIOR SIDE OF THE BARRIER WALL CONSTRUCTION BUT MAY NOT SUBSTITUTE FOR REQUIRED BARRIER MATERIALS SUCH AS PLYWOOD OR SHEET METAL.
2. SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION

1 **SOUND ATTENUATING FENCE ASSEMBLY DETAILS**

NOT TO SCALE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

ODELL PACIFIC CORPORATION
5500 6TH AVE. S., SUITE 222
SEATTLE, WA 98108
PHONE: (206) 430-3636
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19431 45TH AVE. W. SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 740-9392
FAX: (425) 250-2560
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

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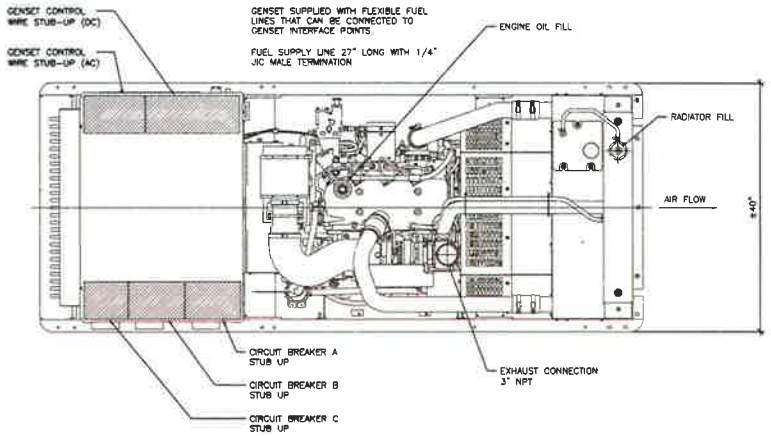
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

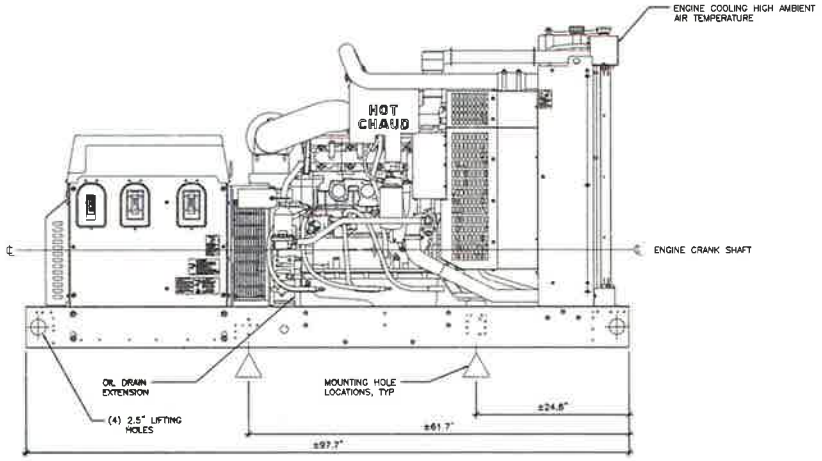
SHEET NAME
SOUND ATTENUATING FENCE ASSEMBLY DETAILS

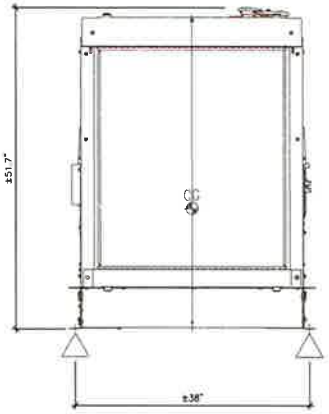
SHEET NUMBER
A-4.4



MANUFACTURERS SPECS.	
MANUFACTURER	CUMMINS
MODEL	C50 D6
DIMENSION	97.7"(L) x 40"(W) x 51.7"(H)
POWER	STANDBY KW (HZ): 50 (60)
FUEL	DIESEL
WEIGHT DRY	1434 LBS
SPL AT 23 FEET dB(A)	80.9

NOTES:
1. OWNER SHALL UTILIZE ALL INTERNATIONAL FIRE CODE (IFC) FUEL CONTAINMENT MEASURES SUCH AS ENGINE FLUID CONTAINMENT, ALARMS ON ALL GENERATOR LIQUIDS, AND DOUBLE WALL FUEL TANKS
2. GENERATOR MUST BE SCHEDULED TO COMPLETE MAINTENANCE OPERATION DURING DAYTIME HOURS
3. INFORMATION OBTAINED FROM MANUFACTURER PUBLISHED DATA SHEET. CONTRACTOR TO VERIFY BEFORE ORDERING ANY PARTS.





ADDED SHEET 3

1 **CUMMINS 50KW OPEN GENSET**
NOT TO SCALE

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY BELLEVUE, WA 98006

Pacific Corporation
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WWW.CGELPC.COM

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PHONE: (425) 740-8392
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PROJECT MANAGER: EJC
PREPARED BY: LM/AIO
APPROVED BY: PN

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

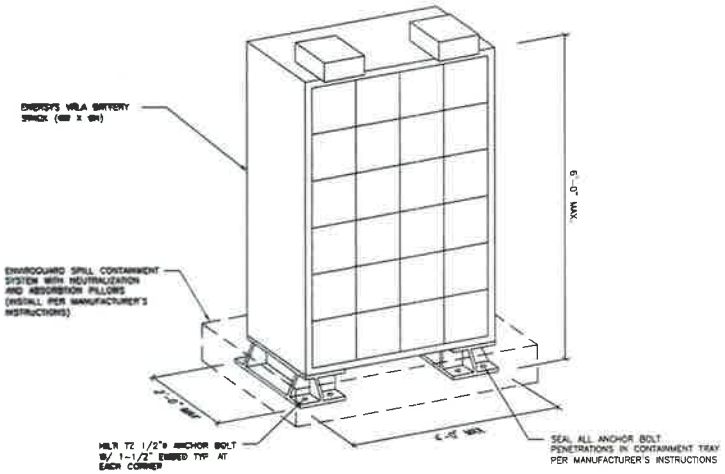
SHEET NAME
GENERATOR DETAIL

SHEET NUMBER
A-4.5

BATTERY SYSTEM DATA

BATTERY MFG.	ENERSYS POWERSAFE SBH	NO. OF CELLS PER MODULE	1
BATTERY TYPE	VRLA (VALVE REGULATED LEAD ACID)	ELECTROLYTE VOLUME PER CELL (GAL.)	3.79
NO. OF BATTERIES	24 (2X1 x 6V)	ELECTROLYTE VOLUME TOTAL (GAL.)	88.9
MODEL NUMBER	30HX25-27	DIMENSIONS	48.3" W x 22.5" D x 49.8" H
NOMINAL 8H CAPACITY	1125	TOTAL WEIGHT CELLS AND RACK	4,770 LBS
NON-SPILLABLE CLASSIFICATION UNLESS RECOGNIZED BY UL 1989		CELL IS NEBB CERTIFIED	

NOTE: REFER TO DEPARTMENT OF LABOR AND INDUSTRIES – FACTORY BUILT STRUCTURES PLANS AND CALCULATIONS FOR PROPER WORK INSTALLATION AND T.I. PERMIT CONSTRUCTION SPECIFICATIONS.



3 BATTERY SYSTEM

NOT TO SCALE

BATTERY REQUIREMENTS

REQUIREMENTS	NON-RECOMBINANT		RECOMBINANT	
	FLOODED LEAD ACID BATTERIES	FLOODED NICK-CAD Pb-Ca BATTERIES	VALVE REGULATED LEAD ACID (VRLA) BATTERIES	LITHIUM-ION BATTERIES
RELIEF VALVE	N/A	N/A	YES 608.2.2	N/A
COMMENTS: RELIEF VALVE OPERATES AT 2–3 PSI AND IS COMPLETE WITH INTEGRAL FLAME ARRESTOR.				
THERMAL RUNAWAY MANAGEMENT	N/A	N/A	YES 608.3	N/A
COMMENTS: BATTERY SYSTEM SHALL BE INSTALLED WITH BATTERY MONITORING SYSTEM (DETAIL 6/A–4.6) FOR THERMAL RUNAWAY PREVENTION AND PROTECTION. (MFR: BY CELLWATCH OR APPROVED EQUAL ACCEPTED BY THE CITY OF BELLEVUE FIRE MARSHAL.)				
SPILL CONTROL	N/A	N/A	YES 608.5	N/A
COMMENTS: PROVIDE ENVIROGUARD SPILL CONTAINMENT SYSTEM WITH NEUTRALIZATION AND ABSORBTION PILLOWS (INSTALL PER MANUFACTURER'S INSTRUCTIONS).				
NEUTRALIZATION	N/A	N/A	YES 608.5.2	N/A
COMMENTS: NEUTRALIZATION AND ABSORBTION PILLOWS SHALL BE PROVIDED WITH ENVIROGUARD SPILL CONTAINMENT SYSTEM (INSTALL PER MANUFACTURER'S INSTRUCTIONS).				
VENTILATION	N/A	N/A	YES 608.6.1, 608.6.2	N/A
COMMENTS: 1095 CFM EXHAUST FAN IS PROVIDED WITH SHELTER				
SIGNAGE	N/A	N/A	YES 608.7.1	N/A
COMMENTS: CODE SPECIFIED BATTERY ROOM SAFETY SIGNAGE, HAZARDOUS MATERIAL SIGNAGE (4 DIAMOND) AND THERMAL RUNAWAY PROCEDURE SIGNAGE SHALL ALL BE CLEARLY POSTED IN ALL BATTERY AREAS.				
SEISMIC PROTECTION	N/A	N/A	YES 608.8	N/A
COMMENTS: REFER TO BATTERY SYSTEM DETAIL (3/A–4.6) FOR ANCHORAGE.				
SMOKE DETECTION	N/A	N/A	YES 608.8	N/A
COMMENTS: AUTOMATIC SMOKE DETECTION AND FIRE SUPPRESSION SYSTEM (FM–200) TO BE INSTALLED.				

NOTE: CODE REFERENCES ARE TO 2015 INTERNATIONAL FIRE CODE FOR STATIONARY STORAGE BATTERY SYSTEMS.

1 BATTERY REQUIREMENTS

-

4 CORROSIVE LIQUIDS SIGN

NOT TO SCALE

Thermal Runaway Procedure Posting
Attachment A to Thermal Runaway Procedure

Handling Overheating Batteries or Thermal Runaway

(A 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 or:

- There is a fire or smoke
- If the fire alarms are sounding
- 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 turning 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 1-800-499-7900

Do not overexert in battery extinguishing. Burning 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).

5 THERMAL RUNAWAY PROCEDURE

NOT TO SCALE

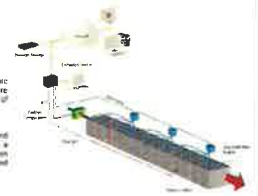
CELLWATCH
PIONEERING CONFIDENCE

Cell Level Battery Monitoring
Cellwatch Frontier measures voltage and ohmic value for each jar or cell as well as temperature and DC current to provide a complete picture of battery health.

Cell Level Alarms
Frontier triggers alarms when any value is beyond its acceptable range, indicating an issue with a battery or cell. Alarm conditions are indicated on device LEDs, site web pages and centralized network management systems.

Flexible and Scalable
With its modular architecture, Cellwatch Frontier is designed for easy installation supporting essentially any combination of 2 to 15 volt cells configured for short or long duration discharge. Installers can customize the setup to reflect the variation from site to site, accommodating deployment nuances as they arise.

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



Cellwatch Frontier systems are comprised of two major components: the Frontier device and a Data Collection Module (DCM). DCMs are connected to each cell and measure its voltage and ohmic value. DCMs are networked with the Frontier device via fiber optic cable for electrical isolation and safety. The Frontier unit aggregates the data from the DCMs along with current and temperature information to provide a complete picture of the health of all the cells in the battery plant on a site. Cellwatch Frontier integrates with site or network management systems (NMS) to provide a unified view of the battery health across all the distributed sites.

Cellwatch's unique testing method does not impact on the cell's capacity and no impact on the cell's useful life.

6 BATTERY MONITORING SYSTEM

-

ADDED SHEET 3

2 NOT USED

-

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

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12412 NEWCASTLE WAY
BELLEVUE, WA 98006

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
BATTERY SYSTEM

SHEET NUMBER
A-4.6

STRUCTURAL NOTES

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

CODE

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

DESIGN LOADS

DEAD LOADS:
BUILDING WEIGHT — 100 5 KIPS (80 KIPS SELF WT + 20 5 KIPS EQUIPMENT)

LIVE LOADS
ROOF (SNOW LOAD) — 60 5 PSF
ROOF LIVE — 150 PSF (PER MFR)

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

EARTHQUAKE LOADS:

EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7-10 SECTION 12 8

SITE CLASS (ASSUMED) — D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s) — 1 419
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1) — 0 541
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{DS}) — 0.946
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{D1}) — 0 541
RISK CATEGORY — III
SEISMIC IMPORTANCE FACTOR (I_E) — 1 5
SEISMIC DESIGN CATEGORY — D
BASIC SEISMIC FORCE-RESISTING-SYSTEM — ORDINARY REINFORCED CONC SHEAR WALLS

RESPONSE MODIFICATION FACTOR, (R) — 4 0
SEISMIC RESPONSE COEFFICIENT (C_s) — 0 355

W = TOTAL SEISMIC DEAD LOAD AS DEFINED PER ASCE 7-10 SECTION 12 7 2

BASE SHEAR (V), $V = C_sW = \frac{S_{DS}}{R/I_E}W$ — 21 8 KIPS (ASD)

WIND LOADS

BASIC WIND SPEED (3 SECOND GUST) — 115 MPH
EXPOSURE — B
K_d — 1 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 1704 4 OF THE IBC

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			
EXCAVATION & FILL		X	GEOTECH ENGINEER
FOUNDATION BEARING CAPACITY VERIFICATION		X	
CONCRETE			
REINFORCING PLACEMENT		X	
ANCHOR BOLTS		X	
CONCRETE PLACEMENT	X		
EXPANSION ANCHORS		X	IF REQ'D
TESTING FOR F'c, AIR CONTENT, SLUMP	X		

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

FOUNDATIONS:

SOILS REPORT — REPORT NO: 114 570974; PREPARED BY: TETRA TECH; DATED: NOV 16, 2015

ALLOWABLE SOIL PRESSURE — 3000 PSF

LATERAL EARTH PRESSURE:
PASSIVE — 350 PCF
COEFFICIENT OF FRICTION — 0 45

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR 12" OF COMPACTED STRUCTURAL FILL AS REQUIRED AND AT LEAST 1.5' BELOW ADJACENT EXTERIOR 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% FINES (PASSING THE #200 SIEVE)

FILL AND BACKFILL MATERIAL SHOULD BE PLACED IN LEVEL LIFTS NOT EXCEEDING TWELVE (12") INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM TEST METHOD D1557 00

BACKFILL BEHIND ALL RETAINING WALLS WITH WELL-DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE. PROVIDE DAMPPROOFING AT EXTERIOR FACE OF ALL FOUNDATION WALLS EXPOSED TO EARTH PER ARCHITECTURAL SPECIFICATIONS

EXCAVATIONS AND DRAINAGE INSTALLATION SHALL BE OBSERVED BY A SOILS ENGINEER RETAINED BY THE OWNER. IF EXCAVATION SHOWS SOIL CONDITIONS TO BE OTHER THAN THOSE ASSUMED ABOVE NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN

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 301)

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

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

TYPE OF CONSTRUCTION	F'c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MAXIMUM SHRINKAGE STRAIN
SLABS ON GRADE	4000 PSI	0.55	5 1/2 SACK	N/A
FOOTINGS	4000 PSI	0.55	5 1/2 SACK	N/A
GRADE BEAMS	4000 PSI	0.55	5 1/2 SACK	N/A
ALL OTHER CONC	4000 PSI	0.55	5 SACK	N/A

THE MINIMUM AMOUNT OF CEMENT LISTED ABOVE MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER, AND ADMIXTURES AS WELL AS THE WATER-CEMENT RATIO, SLUMP, CONCRETE YIELD, AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH 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, W0, & C0

REINFORCING STEEL

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

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. PROVIDE WELDED WIRE FABRIC IN SHEETS NOT ROLLS. LAP WELDED WIRE FABRIC 12" AT SIDES AND ENDS

REINFORCING STEEL SHALL BE DETAILED INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH SP-66 AND ACI 318R, LATEST EDITIONS. UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE

MECHANICAL SPLICING OF REINFORCING BARS, WHERE INDICATED ON THE DRAWINGS, SHALL BE BY AN ICBO APPROVED SYSTEM, SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

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 SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE AS TABULATED BELOW:

BAR SIZE	DEVELOPMENT LENGTH — TENSION — TOP BARS	DEVELOPMENT LENGTH — TENSION — OTHER BARS	DEVELOPMENT LENGTH — COMPRESSION — ALL BARS	LAP SPLICE — TENSION — TOP BARS	LAP SPLICE — TENSION — OTHER BARS	LAP SPLICE — COMPRESSION — ALL BARS
	F'c = 4000 PSI					
#3	19	15	8	24	19	12
#4	25	19	10	33	25	15
#5	31	24	12	41	31	19
#6	37	29	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 SPLICES ARE CLASS B
3 "TOP BARS" ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER 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

VERTICAL BARS SHALL START FROM TOP OF FOOTING. HORIZONTAL BARS SHALL START A DISTANCE OF 1/2 THE NORMAL BAR SPACING FROM TOP OF FOOTING AND TOP OF FRAMED SLABS. IN ADDITION, THERE SHALL BE A HORIZONTAL BAR AT A MAXIMUM OF 3' FROM TOP OF WALL AND BOTTOM OF FRAMED SLABS

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

PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS ON GRADE TO BREAK UP SLAB INTO RECTANGULAR AREAS OF NOT MORE THAN 400 SQUARE FEET EACH. AREAS TO BE AS SQUARE AS PRACTICAL AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS TO BE APPROVED BY THE ARCHITECT

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY PREPARED IMMEDIATELY PRIOR TO POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE AND SPACING AS MAIN REINFORCING DETAILED BEYOND JOINT

SEE ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOF. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (1) #5 x 4' 0" DIAGONAL AT EACH CORNER. EXTEND BARS 2' 0" BEYOND 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

SHAPES SHALL CONFORM TO ASTM A992, Fy = 50 KSI

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

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

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

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

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

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

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITH 70 KSI LOW HYDROGEN ELECTRODES. WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE 5 8 IN AWS D1 1, LATEST EDITION

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

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

EXISTING BUILDING

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

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

GENERAL

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

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

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

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

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

FOUNDATION PLAN NOTES:

1 REFERENCE TO SLAB ELEVATION SHOWN ON PLAN AND VERIFY W/ ARCH DRAWINGS. EXTERIOR FOOTINGS SHALL BEAR A MIN OF 1'-6" BELOW ADJACENT GRADE
2 FOOTINGS AND SLAB ON GRADE SHALL BEAR ON FIRM NATIVE SOIL OR COMPACTED STRUCTURAL FILL AS SPECIFIED IN THE SOILS REPORT
3 WHERE SLAB ON GRADE IS INDICATED, SLAB SHALL BE 4" THICK W/ 6x6-W1 4 x W1 4 WELDED WIRE FABRIC REINF. SLAB SHALL BE POURED OVER A 2" SAND LAYER OVER A 10 MIL VAPOR BARRIER OVER 4" OF 5/8" CRUSHED ROCK
4 REFER TO PLAN AND "CONCRETE GENERAL NOTES" ON SHEET S1 1 FOR CONTROL JOINT PLACEMENT AND DETAIL 2/S4 1 FOR CONTROL JOINT CONSTRUCTION
5 PLACE ALL REINFORCEMENT PER THE STRUCTURAL NOTES AND FOUNDATION DETAILS. REFER TO SHEET S1 1 FOR ADDITIONAL CONCRETE DETAILING REQUIREMENTS
6 CONTRACTOR SHALL VERIFY ALL DIMENSIONS, WALL LOCATIONS, AND CONCRETE ROUGH OPENINGS WITH ARCHITECTURAL DRAWINGS AND NOTIFY ALL PARTIES OF ANY DISCREPANCIES
7 CONTRACTOR SHALL PROVIDE FOOTING AND SLAB SUBSTRATE PREPARATION, WATERPROOFING, AND BACKFILL & DRAINAGE BEHIND RETAINING WALLS PER GEOTECHNICAL REPORT. GEOTECHNICAL ENGINEER SHALL OBSERVE EXCAVATED SOIL CONDITIONS DURING CONSTRUCTION (AND GROUNDWATER CONDITIONS) AS REQUIRED, AND PROVIDE ADDITIONAL RECOMMENDATIONS IF NECESSARY BASED ON ACTUAL SITE CONDITIONS

ABBREVIATIONS			
(A)	ABOVE	GLB	GLUE-LAMINATED BEAM
AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ALT	ALTERNATE	KP	KING POST
ARCH	ARCHITECT	KSI	KIPS PER SQUARE INCH
(B)	BELOW	L	ANGLE
BD	BAR DIAMETER	MECH	MECHANICAL
BLKG	BLOCKING	MF	MOMENT FRAME
BM	BEAM	MTL	METAL
BOT	BOTTOM	NS	NEAR SIDE
BRNG	BEARING	OC	ON CENTER
BTWN	BETWEEN	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	PL	PLATE
CLR	CLEAR	PLCS	PLACES
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
COL	COLUMN	PSF	POUNDS PER SQUARE FOOT
CONC	CONCRETE	P/T	POST TENSIONED
CONN	CONNECTION	PT	PRESSURE TREATED
CONT	CONTINUOUS	REINF	REINFORCING
COORD	COORDINATE	REQ'D	REQUIRED
DBL	DOUBLE	SCHED	SCHEDULE
DET	DETAIL	SIM	SIMILAR
DIA	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	STD	STANDARD
DIR	DIRECTION	STIFF	STIFFENER
EA	EACH	STL	STEEL
ELEV	ELEVATION	SYMM	SYMMETRICAL
ES	EACH SIDE	SW	SHEARWALL
EX	EXISTING	TOC	TOP OF CONCRETE
EXP	EXPANSION	TOS	TOP OF STEEL
FLR	FLOOR	TOW	TOP OF WALL
FDN	FOUNDATION	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
FS	FAR SIDE	VERT	VERTICAL
GC	GENERAL CONTRACTOR	WF	WIDE FLANGE

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CG PROJECT# 16015.902

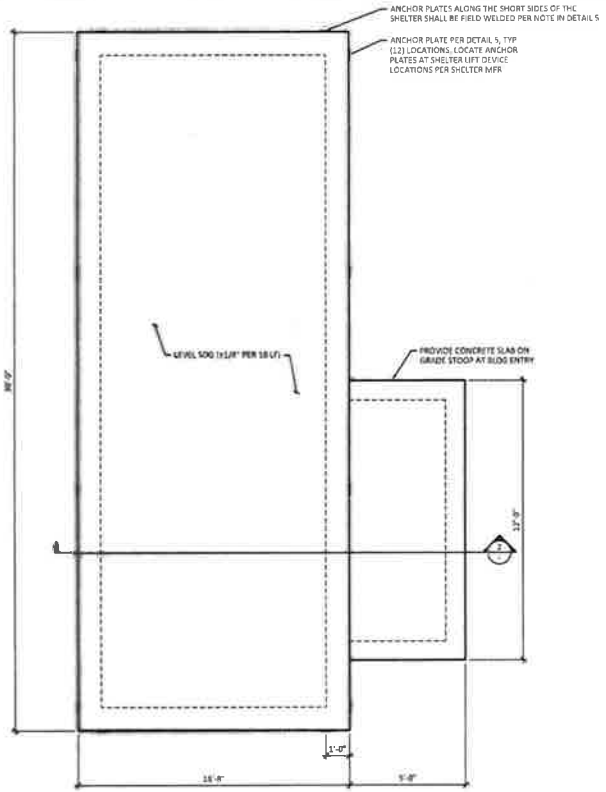
PROJECT MANAGER	MTM
PREPARED BY	ZDS
APPROVED BY	MTM

REV	DATE	DESCRIPTION
1	SUBMIT	PERMIT SUBMITTAL

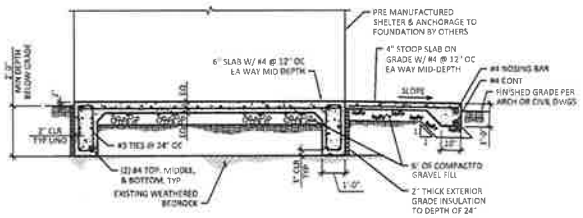
PLAN REVIEWERS SIGNATURE

SHEET NAME
STRUCTURAL NOTES

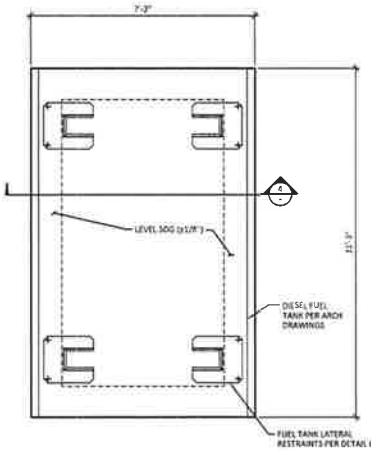
SHEET NUMBER
S1.1



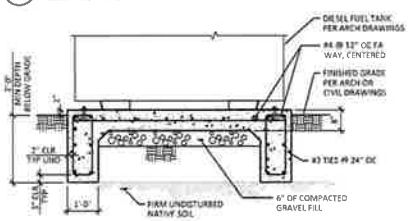
1 SHELTER FOUNDATION PLAN
SCALE 3/8" = 1'-0"



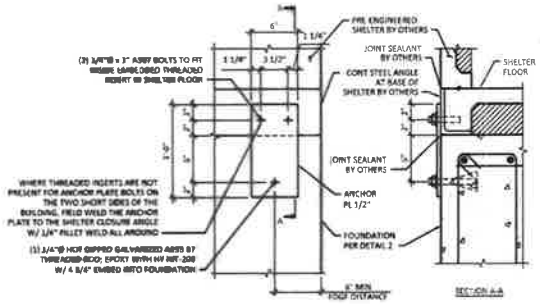
2 SHELTER FOUNDATION SECTION
SCALE 3/8" = 1'-0"



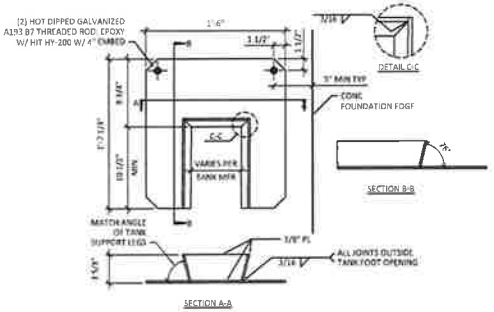
3 DIESEL TANK FOUNDATION PLAN
SCALE 1/2" = 1'-0"



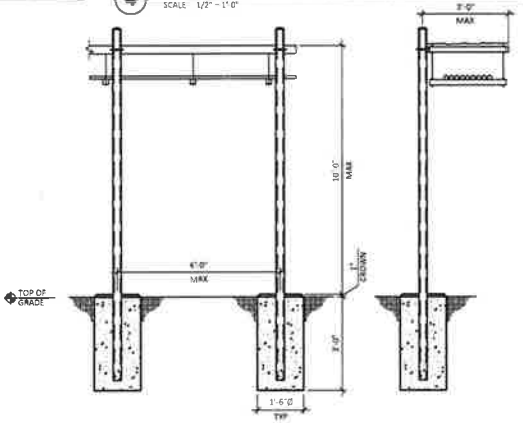
4 DIESEL TANK FOUNDATION SECTION
SCALE 1/2" = 1'-0"



5 SHELTER ANCHORAGE DETAIL
SCALE 1 1/2" = 1'-0"



6 FUEL TANK LATERAL RESTRAINTS
SCALE 1 1/2" = 1'-0"



7 ICE BRIDGE PIER FOUNDATIONS
SCALE 1/2" = 1'-0"

NOTE:
SEE ARCHITECTURAL DRAWINGS FOR MEMBER SIZES AND SPACING

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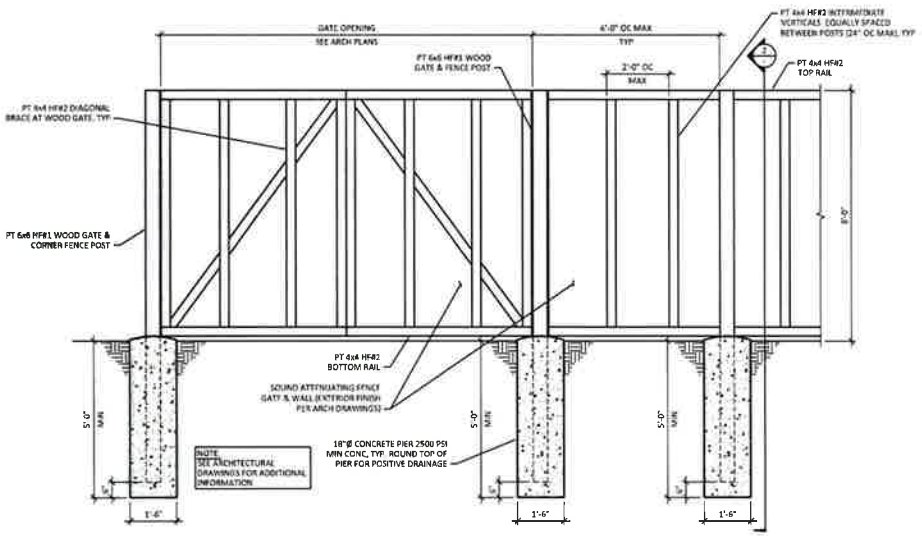
APPROVED BY	MTM

REV	DATE	DESCRIPTION
A	11/10/17	PERMIT SUBMITTAL

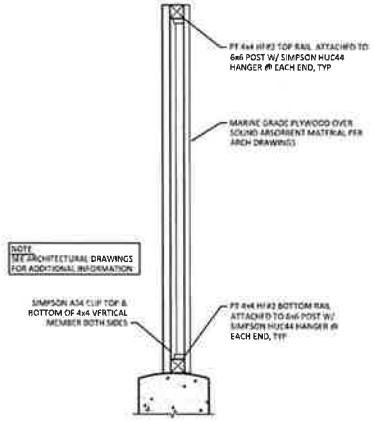
PLAN REVIEWER® SIGNATURE

SHEET NAME
BUILDING AND TANK FOUNDATION PLANS AND DETAILS

SHEET NUMBER
S2.1



1 SOUND ATTENUATING FENCE FOUNDATION ELEVATION
SCALE: 1/2" = 1'-0



2 SOUND ATTENUATING FENCE FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

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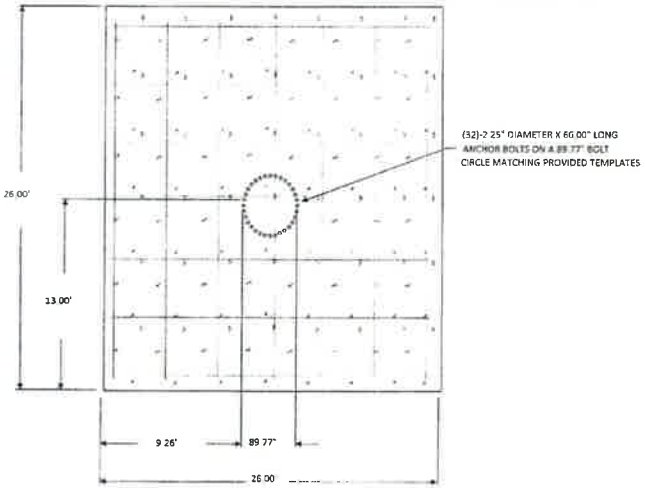
REV	DATE	DESCRIPTION
1	02/07/17	PERMIT SUBMITTAL

PLAN REVIEWERS SIGNATURE

SHEET NAME
SOUND ATTENUATING FENCE ELEVATION AND DETAIL

SHEET NUMBER
S2.2



SECTION A-A
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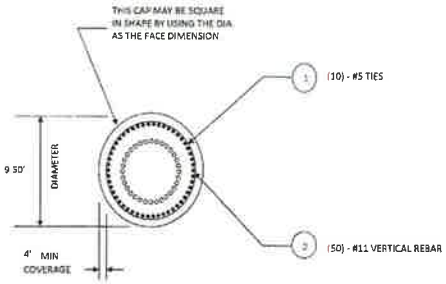


SECTION B-B
No Scale

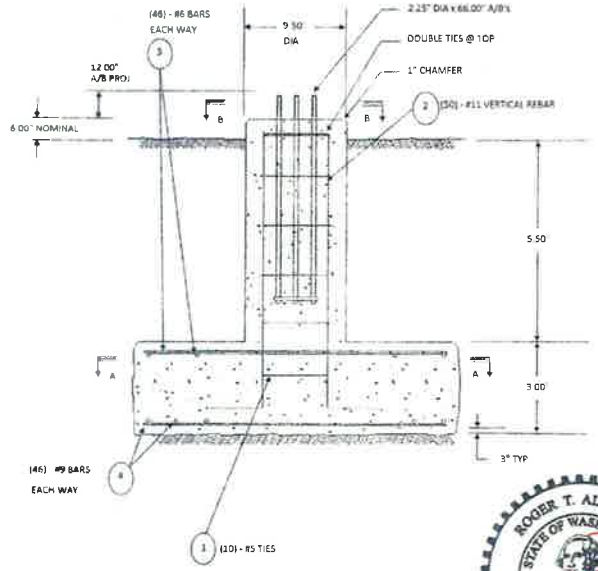
GENERAL NOTES: SLAB FOUNDATION

1. Prior to excavation, check the area for underground facilities
2. All reinforcing shall be deformed bars conforming to ASTM A615 Grade 60 (60,000 psi min. yield) and shall be provided by the foundation contractor.
3. All concrete shall have a minimum compressive strength of 4000 psi @ 28 days. The requirement for the concrete shall be as given in the ACI "Building Code Requirements for Reinforced Concrete", ACI 318, the latest edition.
4. Trowel top of foundation smooth.
5. Concrete shall be placed against undisturbed soil to the depth indicated on the foundation drawing. The portion above grade shall be formed. If an area is excavated beyond the limits shown, this volume shall be filled with concrete or formed. After the forms are removed, the excess excavation shall be replaced and compacted.
6. Ground water was not encountered below grade during boring.
7. Foundation design based on vert. bearing pressure of 9000 psf.
8. Concrete is assumed to weigh 150 pcf.
9. Estimated concrete volume = **90.86 cubic yards total.**
10. Design Based on the following loads from installation drawing for order No: 324543.

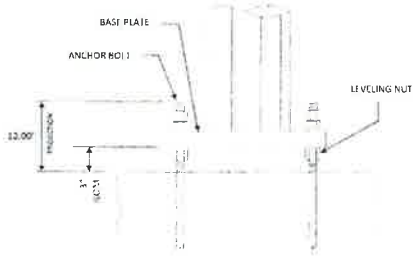
Factored Moment = 8198 FT-KIPS **Overturning Safety Factor = 1.03**
Factored Download = 69.7 KIPS **Max. Toe Bearing Pressure = 5.91 ksf**
Factored Shear = 73.2 KIPS

11. Backfill should be compacted to a density of 100 pcf
12. Anchor bolts to be ASTM A615, Gr. 75 ksi.
13. Reference: TETRA TECH PROJECT NO. 114-570974 DATED 02/18/2016

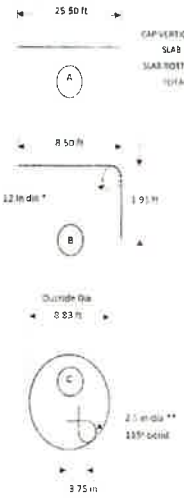
14. Ref Soils Report for installation recommendations.
15. Auger refusal encountered at 10' below grade during boring.
16. Foundation designed to not exceed 85% capacity.



ELEVATION
No Scale



ANCHOR BOLT INSTALLATION
N.T.S.
EXTREME CARE SHOULD BE TAKEN TO ASSURE THAT ALL LEVELING NUTS ARE LEVEL WITH RESPECT TO EACH OTHER PRIOR TO ERECTION OF THE STRUCTURE



REINFORCEMENT STEEL SCHEDULE

Sym	Type	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
CAP TIES	C	#5	EQUAL	289	10
CAP VERTICAL REBAR	B	#11	----	2765	50
SLAB TOP STEEL	A	#6	6.80 in	3524	92
SLAB BOTTOM STEEL	A	#6	6.80 in	7976	92
TOTAL STEEL WEIGHT FOR COMPLETE FOUNDATION INSTALLATION =				14555	

Grade 60 Rebar

Size	Bar #	Wt/ft	Dia (in)	d* (in)	d** (in)
#3	11-97297	0.38	3.25	2.25	5.50
#4	11-97298	0.67	3.00	3.00	2.00
#5	11-97299	1.04	3.75	3.75	2.50
#6	11-97300	1.50	4.50	4.50	4.50
#7	11-97267	2.04	5.25	5.25	4.25
#8	11-97268	2.67	6.00	6.00	6.00
#9	11-97269	3.40	6.75	9.50	
#10	11-97270	4.30	7.50	10.75	
#11	11-97271	5.31	8.46	12.00	

* Refers to ACI standard hook detail chart
** Refers to ACI stirrup hook detail chart

Rebar Lap Splice

Rebar Size	Rebar Grade	Specified Concrete Strength	Overlap (inches) Vert & Ties	Bottom Horiz	Top Horiz
#3	60	4000 psi	13	15	21
#4	60	4000 psi	18	20	29
#5	60	4000 psi	22	25	36
#6	60	4000 psi	26	33	46
#7	60	4000 psi	38	43	61
#8	60	4000 psi	43	59	82
#9	60	4000 psi	49	71	104
#10	60	4000 psi	58	95	137
#11	60	4000 psi	71	116	167

Splicing is an alternative to specified material listed in rebar schedule
Lap Splice may be used on ties when Seismic Hook not required

ROGER T. ALWORTH
STATE OF WASHINGTON
41725
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

May 16, 2016
WA Certificate of Authorization: 2202
Project#: U1316-119-161

VECTOR engineers
9138 S. State Street, Suite 101 (801) 990-1775
Sandy, Utah 84070 (801) 990-1776 Fax

Rev	Description	Date	By/Ck

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES TOLERANCES ARE

valmont MICROPILE
1575 25TH STREET N SALEM, OR 97301
MAIN (503) 363-9267
FAX (503) 316-1040

By	NAR	SLAB FOUNDATION LAYOUT
Check	NAR	Customer ODELIA
Date	05/16/16	Site BELLEVUE STATION, WA
S.O. 324543	SIZE B	Dwg No. B-143633 Sheet 1 of 1

WA Certificate of Authorization: 2202

Project#: U1316-119-161

VECTOR ENGINEERED
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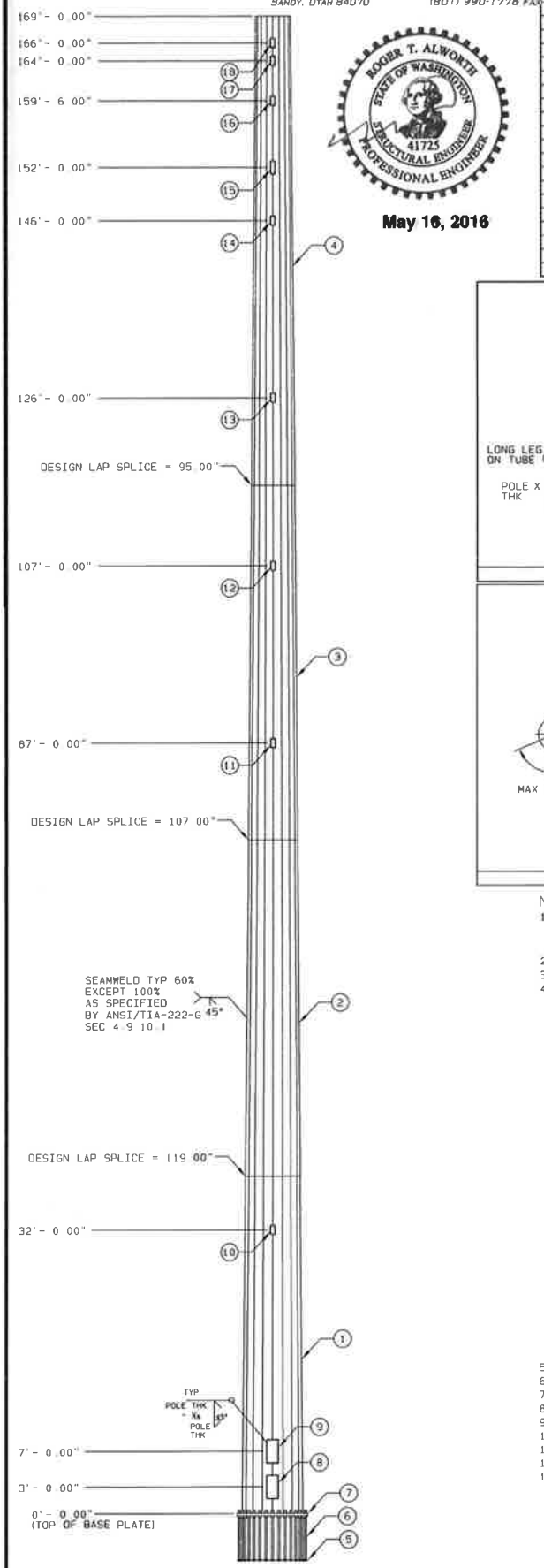
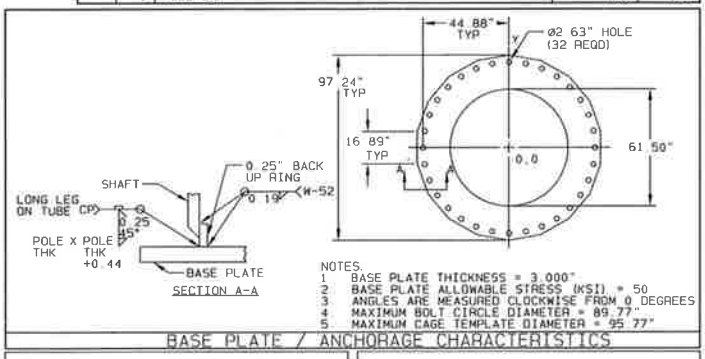
ROGER T. ALWORTH — STATE OF WASHINGTON — 41725 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

May 16, 2016

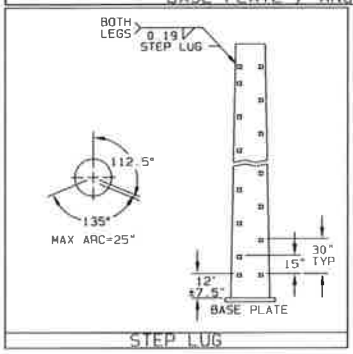
ITEM ID	NO. REQD	FEATURES	UNIT WEIGHT (LBS)	WEIGHT (LBS)
1	1	SECTION A VALMONT S-22 0.625" THK (A572 GR65)	24,640	24,640
2	1	SECTION B VALMONT S-22 0.500" THK (A572 GR65)	17,442	17,442
3	1	SECTION C VALMONT S-22 0.438" THK (A572 GR65)	13,865	13,865
4	1	SECTION D VALMONT S-22 0.313" THK (A572 GR65)	9,387	9,387
5	1	BOTTOM CAGE PLATE	174	174
6	32	2.25" ANCHOR BOLT, LENGTH=5.50" A615 GR75	96	3,060
7	1	BASE PLATE VALMONT S-56 3.000" THK (A572 GR50)	4,727	4,727
	1	TOP CAGE PLATE (REMOVE BEFORE SETTING POLE)	230	230
	1	SAFETY CLIMBING CABLE (LENGTH = 159.00')	113	113
	3	GROUNDING LUG	2	6
		GALVANIZING	969	969
	126	STEP AND CLIP (VALMONT STANDARD)	1	63
8	2	HAND HOLE HVY (16" x 32")	215	430
9	2	HAND HOLE HVY (16" x 32")	215	430
10	3	HAND HOLE HVY (6" x 12")	26	78
11	2	HAND HOLE HVY (6" x 12")	26	52
12	2	HAND HOLE HVY (6" x 12")	26	52
13	1	HAND HOLE STD (6" x 12")	22	22
14	3	HAND HOLE STD (6" x 12")	22	66
15	3	HAND HOLE STD (6" x 18")	18	54
16	1	HAND HOLE STD (6" x 12")	22	22
17	1	HAND HOLE STD (6" x 12")	22	22
18	3	HAND HOLE STD (6" x 12")	22	66
	1	POLE CAP	100	100



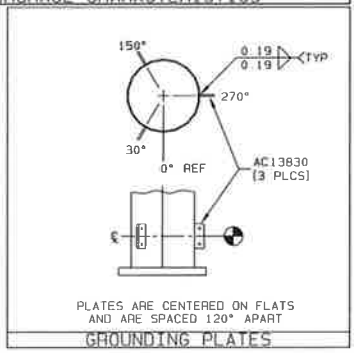


NOTES:
1. BASE PLATE THICKNESS = 3.000"
2. BASE PLATE ALLOWABLE STRESS (KSI) = 50
3. ANGLES ARE MEASURED CLOCKWISE FROM 0 DEGREES
4. MAXIMUM BOLT CIRCLE DIAMETER = 89.77"
5. MAXIMUM CAGE TEMPLATE DIAMETER = 95.77"

BASE PLATE / ANCHORAGE CHARACTERISTICS



STEP LUG



PLATES ARE CENTERED ON FLATS AND ARE SPACED 120° APART

GROUNDING PLATES

NOTES:

1. FACTORED REACTIONS FOR FOUNDATION DESIGN.
   MOMENT = 83,623 IN-KIPS
   SHEAR = 62,248 #
   VERTICAL = 92,988 #
2. GALVANIZED PER ASTM A-123.
3. DESIGN CRITERIA: ANSI/TIA 222-G ADDENDUM 4
4. THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:
   EXPOSURE CATEGORY = B
   STRUCTURE CLASSIFICATION = 3
   TOPOGRAPHY CATEGORY = 3
   H = 400.00 FT
   EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS Ss = 1.42
   EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT ONE SECOND S1 = 0.54
   EARTHQUAKE SITE CLASS = D
   WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 100 YEAR WIND RETURN PERIOD
   A. CASE 1: WIND = 85 MPH WIND SPEED
   B. CASE 2: WIND = 30 MPH ICE AND WIND SPEED
      DESIGN ICE THICKNESS = 0.25 INCH
   C. CASE 3: WIND = 60 MPH WIND SPEED
   D. EQUIPMENT

DESCRIPTION	MTG HT (FT)	CENTROID HT (FT)	WITHOUT ICE EPA (FT**2)	WITHOUT ICE WT (LBS)	WITH ICE EPA (FT**2)	WITH ICE WT (LBS)
1-4FT LIGHTNING ROD	169.00	171.00	0.25	10	0.92	23
2-SC412-HF2LDF	169.00	179.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	169.00	169.00	37.56	892	56.00	1616
2-6' HIGH PERFORMANCE (11GHZ)	166.00	166.00	76.54	744	81.12	1258
1-4' HIGH PERFORMANCE (11GHZ)	164.00	164.00	17.18	252	18.67	373
1-3' HP DISH (11GHZ)	159.50	159.50	9.97	136	11.12	209
2-SC412-HF2LDF	149.00	159.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	149.00	149.00	37.56	892	56.00	1616
12-PANEL (8' X 1' X 3")	154.00	154.00	83.40	948	98.16	2340
3-T-ARM SPL 3' S/O 12' C/A	154.00	154.00	8.85	618	11.88	894
2-6' HIGH PERFORMANCE (11GHZ)	146.00	146.00	76.54	744	81.10	1258
1-DBSPECTRA UHF TTA	127.50	127.50	4.05	61	4.70	126
2-CC807-11	109.00	118.00	10.46	98	16.28	238
4-6' UNIVERSAL SIDE ARM (84"	109.00	109.00	37.56	892	55.96	1612
2-CC807-11	89.00	98.00	10.46	98	16.26	238
4-6' UNIVERSAL SIDE ARM (84"	89.00	89.00	37.56	892	55.88	1612
1-CAMERA (17.5" X 13.5" X 8")	34.00	34.00	3.29	83	3.89	132
1-19" STANDOFF	34.00	34.00	0.73	16	1.20	34

5. FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE)
6. TOTAL POLE HEIGHT IS 170 FT AGL
7. ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX 1 FT AGL)
8. POLE DESIGNED TO NOT EXCEED 85% CAPACITY
9. POLE TO BE PAINTED SW 6195 ROCK GARDEN
10. POLE MEETS 0.47 DEGREE TWIST & SWAY UNDER 60 MPH SERVICE WIND SPEED
11. POLE DESIGNED TO 110 MPH ULTIMATE WIND SPEED PER IBC 2012
12. WIND SPEED CONVERSION TO 85 MPH NOMINAL PER IBC 2012 1609.3.1
13. E80 ELECTRODE USED FOR ALL WELDS

SECTION INFORMATION

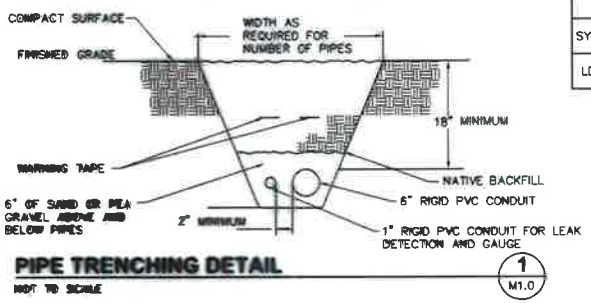
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	48' - 0.00"	82.00"	71.35"	0.625"	A572 65 KSI
2	46'-11.00"	74.55"	64.14"	0.500"	A572 65 KSI
3	47'-11.00"	66.99"	56.36"	0.438"	A572 65 KSI
4	52'-11.00"	58.74"	47.00"	0.313"	A572 65 KSI

REV ID	DATE	BY	DESCRIPTION
1	09/30/16	NAR	WELD DETAILS/NOTES ADDED

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR
324543	324543	324543	NONE	04/15/16	NAR1

DESCRIPTION: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

valmont



PIPE TRENCHING DETAIL

NOT TO SCALE

1 M1.0

MISCELLANEOUS EQUIPMENT SCHEDULE

SYMBOL	ITEM DESCRIPTION	SPECIFIED MFR & MODEL NO.	AREA SERVED	EQUIPMENT CAPACITY	ELECTRICAL		REMARKS
					AMPS	VOLTS/PH	
LDP-1	TANK GAUGE AND LEAK DETECTION PANEL	FUEL SENTRY TG-EL-D4A	TANK, DAY TANK	6 INPUT	4.2	120/1	PROVIDE NEMA 3 ENCLOSURE

PIPING MATERIAL SCHEDULE

PIPING	LOCATION	MATERIAL	JOINT
DIESEL FUEL SUPPLY/RETURN	ALL	PVFD 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

DRAWING NOTES:

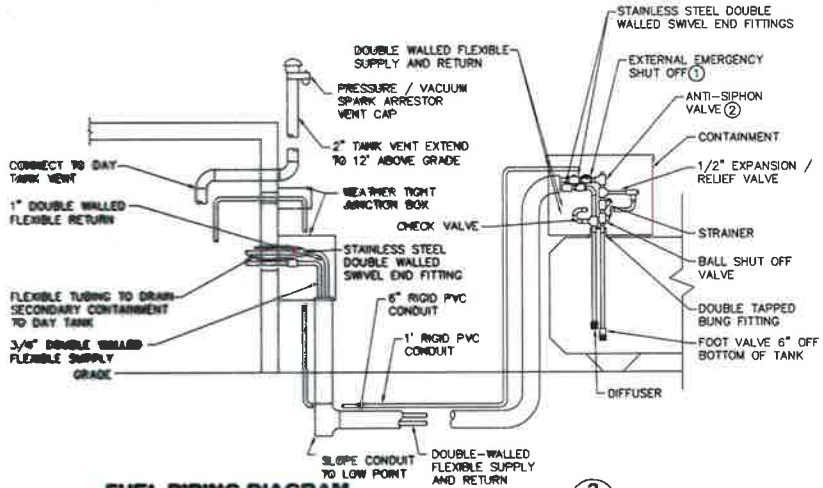
1. FUEL PIPING INSTALLATION SHALL CONFORM TO 2015 NFPA 30.
2. SEAL ALL CONDUIT AND CONTAINMENTS TO BE WATER TIGHT.
3. CONTRACTOR SHALL LAY OUT CONTAINMENT CONDUITS AND PIPING SO THAT ANY POINT OF LEAKAGE IS CAUGHT BY SECONDARY CONTAINMENT AND ALARMS WITH THE LEAK DETECTION SYSTEM.
4. COORDINATE CONNECTION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

KEYED NOTES:

(1) FULL LINE SIZE FUSEABLE LINK SHUT-OFF VALVE.

(2) COMPATIBLE IN A SUCTION SYSTEM.

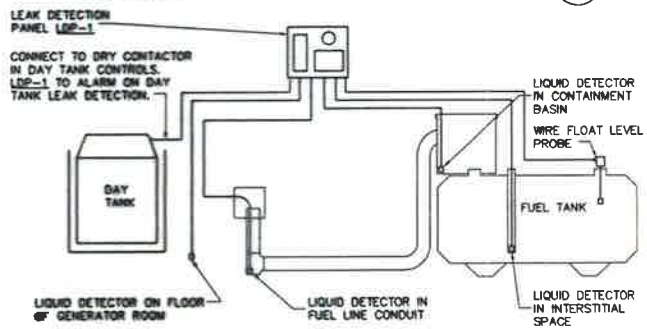
(3) VERIFY DAY TANK'S SUPPLY AND RETURN PUMPS ARE OPERATING CORRECTLY TO MOVE FUEL WITHOUT SPILL OR OVERFLOW.



FUEL PIPING DIAGRAM

NOT TO SCALE

2 M1.0

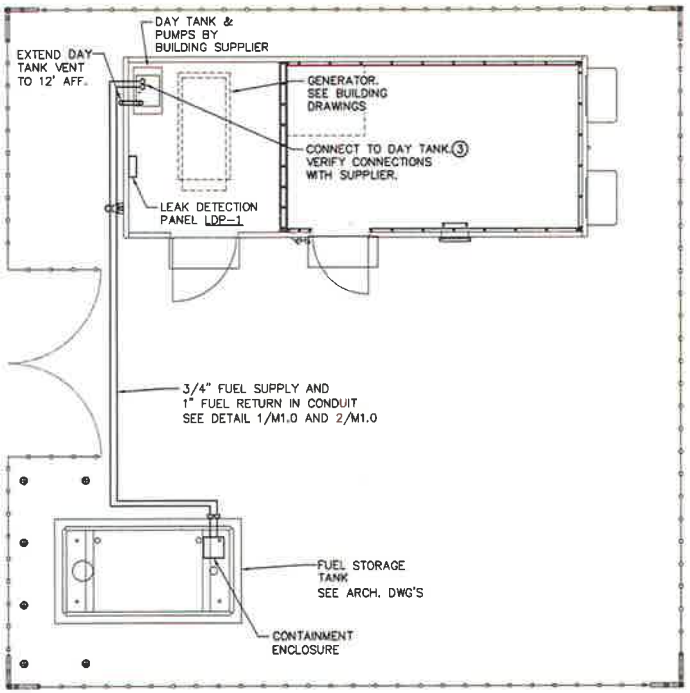


NOTE: PROVIDE WIRE AND CONDUIT FROM PANEL TO EACH LEAK DETECTION DEVICE.

LEAK DETECTION SYSTEM DIAGRAM

NOT TO SCALE

3 M1.0



NORTH

1 FUEL SYSTEM PIPING PLAN

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

VEACH Consulting Engineers
12200 Pacific Ave. S. Suite B Tacoma, WA 98444
Ph: 253-274-5701 Proj# 1532

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

ODELLA PACING CORPORATION
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SEATTLE, WA 98108
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WWW.ODELLA.COM

CAMP+ ASSOCIATES
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LYNNWOOD, WA 98036
PHONE: (425) 740-4282
FAX: (425) 252-0360
WWW.CAMPASSOC.COM

PROJECT MANAGER:

PREPARED BY: SJC

APPROVED BY: TAV

01/03/17	PERMIT
09/19/16	PERMIT
07/7/16	PERMIT
05/23/16	PRELIMINARY

PLAN REVIEWERS SIGNATURE

EXPIRES 8-17-17

SHEET NAME
FUEL SYSTEM PIPING 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	HP	TOTAL CAP.*	EER*	COMPRESSOR QTY	COMPRESSOR RLA(EA)	TYPE	MIN. SF	FLA	VOLT/PH	
AC-1	MARVAIR AVPA48ACA050CA5100	WALL MOUNTED	1725	0.125	825	1/3	46,000	9.50	1	21.8	MERV 7	10X20	33.2	230/1	①②
AC-2	MARVAIR AVPA48ACA050CA5100	WALL MOUNTED	1725	0.125	825	1/3	46,000	9.50	1	21.8	MERV 7	10X20	33.2	230/1	①②

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

① W/ 100% ECONOMIZER ② W/ LEAD/LAG CONTROLLER

FANS

SYMBOL	SPECIFIED MFR & MODEL NO.	TYPE	AREA SERVED	CFM	ESP	RPM	ELECTRICAL		DRIVE	CONTROL	REMARKS
							AMP	V/PH			
EF-1	DAYTON 1HLA3	SHUTTER MOUNT EXHAUST	EQUIPMENT ROOM	416	0.125	1550	0.85	115/1	DIRECT	CONTINUOUS	-

ACCESSORIES: ①W/ INTEGRAL BACK DRAFT DAMPER ②ECM MOTOR

VENTILATION

AREA TYPE	AREA (SF)	IMC CODE REQUIREMENT	REQ'D VOLUME		OUTSIDE AIR PROVIDED	EXHAUST PROVIDED
			OUTSIDE AIR	EXHAUST		
BATTERY ROOM	198	1 CFM/SF	198	-	416	416

COOLING LOAD CALCULATION

FROM RADIO EQUIPMENT MANUFACTURER:
100% CAPACITY LOAD: 45,714 BTU/HR.
INTENT IS FOR A SINGLE AIR CONDITIONER TO CARRY THE LOAD WITH THE SECOND UNIT FOR REDUNDANCY.

ENERGY CODE REQUIREMENTS

A. TEST AND BALANCE EACH HVAC SYSTEM. ADJUST REGISTERS AND DAMPERS FOR AIR FLOW INDICATED ON DRAWINGS. ADJUST FAN SPEED FOR TOTAL AIR FLOW.

B. 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.

C. 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%.

D. 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. UNITS TO OPERATE IN A LEAD/LAG SEQUENCE.

DRAWING NOTES:

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

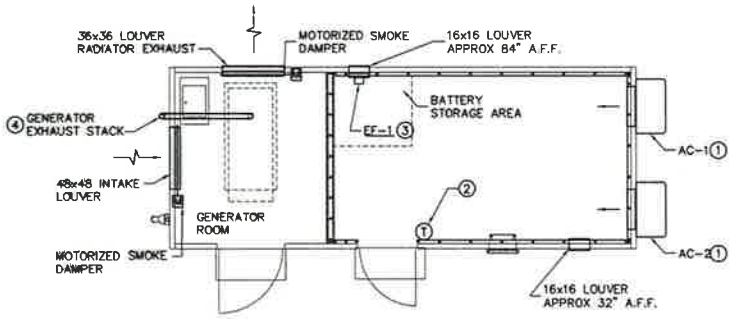
KEYED NOTES:

① SUPPORT AIR CONDITIONERS ON WALL MOUNTING BRACKETS PROVIDED WITH UNIT.

② 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.

③ MOUNT EF-1 SO THAT INTAKE IS WITHIN 12" OF THE HIGHEST POINT OF THE CEILING.

④ EXTEND EXHAUST STACK TO 10' ABOVE GRADE. PROVIDE APPROVED RAIN CAP.



1 HVAC PLAN - THERMOBOND SHELTER

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

NORTH

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PROJECT MANAGER:

PREPARED BY: SJC

APPROVED BY: TAV

01/03/17	PERMIT
09/19/16	PERMIT
07/7/16	PERMIT
05/23/16	PRELIMINARY

PLAN REVIEWERS SIGNATURE

ED L. TRUE EXPIRES 6-17-17

SHEET NAME
HVAC PLAN

SHEET NUMBER
M1.1

PP1

225 A. BUS 200 A. MAIN CIRCUIT BREAKER

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL (VA)	BREAKER A	/ P	CCT	PH	CCT	BREAKER A	/ P	TOTAL (VA)	DESCRIPTION
HVAC #1	28000	50	/ 2	1	A	2	50	/ 2		HVAC #2
-----	28000		/ 2	3	B	4		/ 2		REDUNDANT UNIT
PANEL PP2	14000	125	/ 3	5	A	6	80	/ 0		SURGE ARRESTOR
-----	14000		/ 2	7	B	8		/ 2		-----
EXTERIOR LTG	1200	20	/ 1	9	A	10	20	/ 1	180	EXT GFI RECEPT
EQ ROOM LTG	1941	20	/ 1	11	B	12	20	/ 1	900	EQUIP RM RECEPTS
FIRE SUPPRESSION	1296	20	/ 1	13	A	14	20	/ 1	360	FUEL PUMP
			/	15	B	16	20	/ 1	500	LEAK CONTROL PANEL
			/	17	A	16		/		
			/	19	B	20		/		
			/	21	A	22		/		
			/	23	B	24		/		
			/	25	A	26		/		
			/	27	B	28		/		
			/	29	A	30		/		
			/	31	B	32		/		
			/	33	A	34		/		
			/	35	B	36		/		
			/	37	A	38		/		
			/	39	B	40		/		
			/	41	A	42		/		

PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.5	KW @	100% =	0.5 @	100 %=	0.5 KVA
FLUORESCENT	1.3	KW @	95% =	1.3 @	100 %=	1.7 KVA
RECEPTACLES						
FIRST 10 KW	1.1	KW @	100% =	1.1 @	100 %=	1.1 KVA
REMAINDER	0.0	KW @	100% =	0.0 @	50% =	0.0 KVA
MOTORS						
LARGEST	23.3	KW @	80% =	29.2 @	125 %=	36.5 KVA
REMAINDER	5.1	KW @	80% =	6.3 @	100 %=	6.3 KVA
OTHER	0.5	KW @	100% =	0.5 @	100 %=	0.5 KVA
TOTAL	31.2	KW		38.4 KVA		46.0 KVA
PHASE "A"	15.8	KW	MINIMUM PANEL AMPACITY =		A-B	192 AMPERES
PHASE "B"	14.3	KW	PANEL POWER FACTOR	81%		92% PHASE BALANCE

PP2

225 A. BUS

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL (VA)	BREAKER A	/ P	CCT	PH	CCT	BREAKER A	/ P	TOTAL (VA)	DESCRIPTION
RECTIFIER #1	1500	25	/	1	A	2	25	/	1500	RECTIFIER #2
-----	1500		/ 2	3	B	4		/ 2	1500	-----
RECTIFIER #3	1500	25	/	5	A	6	25	/	1500	RECTIFIER #4
-----	1500		/ 2	7	B	8		/ 2	1500	-----
RECTIFIER #5	1500	25	/	9	A	10	25	/	1500	RECTIFIER #6
-----	1500		/ 2	11	B	12		/ 2	1500	-----
RECTIFIER #7	1500	25	/	13	A	14		/		RECTIFIER #8
-----	1500		/ 2	15	B	16		/		-----
RECTIFIER #9	1500	25	/	17	A	18		/		
-----	1500		/ 2	19	B	20		/		
SPACE			/	21	A	22	20	/ 1	180	ROW 2 TWIST LOCK 1
SPACE			/	23	B	24	20	/ 1	180	ROW 2 TWIST LOCK 2
ROW 1 TWIST LOCK #1	180	20	/ 1	25	A	26	20	/ 1	180	ROW 2 TWIST LOCK 3
ROW 1 TWIST LOCK #2	180	20	/ 1	27	B	28	20	/ 1	180	ROW 2 TWIST LOCK 4
ROW 1 TWIST LOCK #3	180	20	/ 1	29	A	30	20	/ 1	180	ROW 2 TWIST LOCK 5
ROW 1 TWIST LOCK #4	180	20	/ 1	31	B	32		/		
ROW 1 TWIST LOCK #5	180	20	/ 1	33	A	34		/		
		0	/ 0	35	B	36		/	0	0
TELCO RECEPT #1	180	20	/ 0	37	A	38	20	/ 1	180	TELCO RECEPT #2
TELCO RECEPT #3	180	20	/ 1	39	B	40	20	/ 1	180	TELCO RECEPT #4
			/	41	A	42		/		

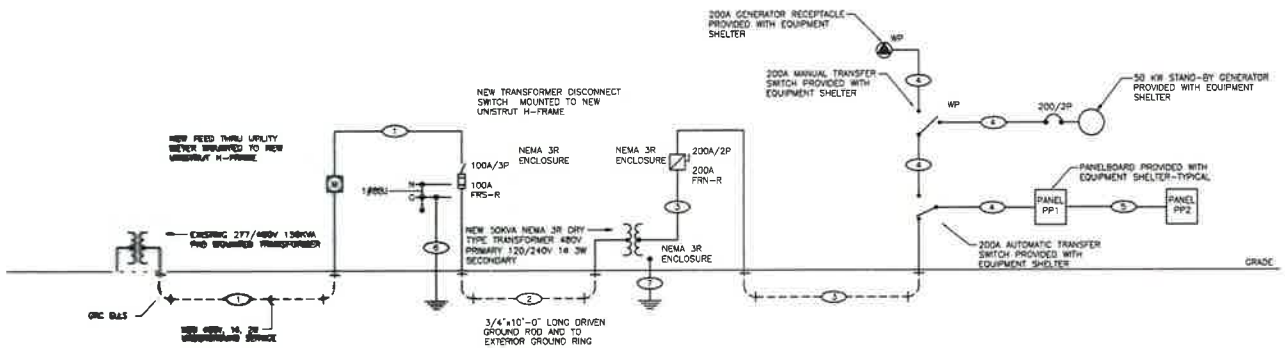
PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.0	KW @	100% =	0.0 @	100 %=	0.0 KVA
FLUORESCENT	0.0	KW @	95% =	0.0 @	100 %=	0.0 KVA
RECEPTACLES						
FIRST 10 KW	2.5	KW @	100% =	2.5 @	100 %=	2.5 KVA
REMAINDER	0.0	KW @	100% =	0.0 @	50% =	0.0 KVA
MOTORS						
LARGEST	0.0	KW @	80% =	0.0 @	125 %=	0.0 KVA
REMAINDER	0.0	KW @	80% =	0.0 @	100 %=	0.0 KVA
OTHER	24.0	KW @	100% =	24.0 @	100 %=	24.0 KVA
TOTAL	26.5	KW		26.5 KVA		28.5 KVA
PHASE "A"	13.4	KW	MINIMUM PANEL AMPACITY =		A-B	111 AMPERES
PHASE "B"	13.1	KW	PANEL POWER FACTOR	100%		97% PHASE BALANCE

FEEDER SCHEDULE

1. (2 #1) 1 1/4" C
2. (2 #2 & 1#6G) 1" C
3. (3 #3/0 & 1#6G) 2" C
4. (3 #3/0 & 1#6G) 2" C PROVIDED WITH EQUIPMENT SHELTER
5. (3 #1 & 1#4G) 1 1/2"C PROVIDED WITH EQUIPMENT SHELTER
6. 1 #8CU
7. 1 #4CU

ALL CONDUCTORS SHALL BE COPPER 600V. RATED WITH THWN INSULATION



NOTE:

COORDINATE ANY REQUIRED POWER OUTAGES WITH UTILITY COMPANY AND EXISTING BUILDING OWNER REPRESENTATIVE.

1 ELECTRICAL ONE LINE DIAGRAM

1. INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE OF WASHINGTON LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT, ALL LATEST ISSUE, AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S651-401, I.C.E.A. P81-570, & LOCAL PUD.
2. PROVIDE A METER BASE PER LOCAL UTILITY STANDARDS. MOUNT ON SIDE OF OWNER FURNISHED BACK BOARD.
3. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT, SCHEDULE 40, TYPE 1, CONFORMING TO UL ARTICLE 651; WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED T PIPE SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS, (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK).
4. CONDUIT USED INDOORS SHALL BE E.M.T., AND RIGID GALVANIZED STEEL FOR OUTDOORS. COUPLINGS SHALL BE RIGID STEEL AND COMPRESSION TYPE FOR E.M.T. SET SCREW FITTINGS ARE NOT PERMITTED. FOR ALL STUBS-UPS, USE RIGID GALVANIZED STEEL CONDUIT.
5. WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY NEC. THERE WILL BE NO SPLICES ALLOWED. PROVIDE HOPE PULLING HAND HOLES AS NEEDED.
6. CONTRACTOR SHALL PROVIDE TEST OF THE GROUNDING SYSTEM BY CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS. ALL ABOVE GRADE INTERIOR GROUNDING CONNECTORS SHALL BE DOUBLE-LUG COMPRESSION TYPE. ALL BELOW GRADE AND EXPOSED EXTERIOR GROUNDING CONNECTIONS TO PERMANENT EQUIPMENT AND FIXED BUILDING ELEMENTS SHALL BE CADWELD TYPE. CARE SHALL BE TAKEN TO REVIEW CONNECTION LOCATIONS AND MATERIAL TYPES TO AVOID POSSIBLE GALVANIC CORROSION. ALL EXPOSED GROUNDING CONNECTIONS TO BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS "NO-OXY", "NOALOX", OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER. ALL BOLTS, WASHERS AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
7. ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-3 OR AS PER NOTE 6 ABOVE.
8. ALL JUNCTION AND OUTLET BOXES TO BE LABELED WITH KROY TAPE, OR EQUAL, DESIGNATING ALL CIRCUIT NUMBERS CONTAINED IN EACH BOX.
9. CONTRACTOR TO ENSURE ILC PROVIDED WITH (2) INTERNAL TVSS.
10. CONTRACTOR SHALL COORDINATE WITH SITE SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. WHEREVER POTENTIAL CONFLICTS/ INTERFERENCES EXIST, HAND EXCAVATE TO AVOID DAMAGE. CONTACT ALL UTILITIES TO LOCATE UNDERGROUND PIPING IN PUBLIC ROW.
11. VERIFY THAT A.I.C. OF THE UTILITY DOES NOT EXCEED THE A.I.C. RATING OF THE PROVIDED EQUIPMENT SHELTER PACKAGE. IF OVER 10KAIC, PROVIDE FUSIBLE SERVICE ENTRANCE SWITCH AND CONFIRM LOWERING OF AIC TO ACCEPTABLE LEVELS.
12. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
13. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL. PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

GENERAL NOTES

ABBREVIATIONS

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

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

LEGEND / ABBREVIATIONS

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

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PROJECT MANAGER: EJC

PREPARED BY: LM/AIC

APPROVED BY: PN

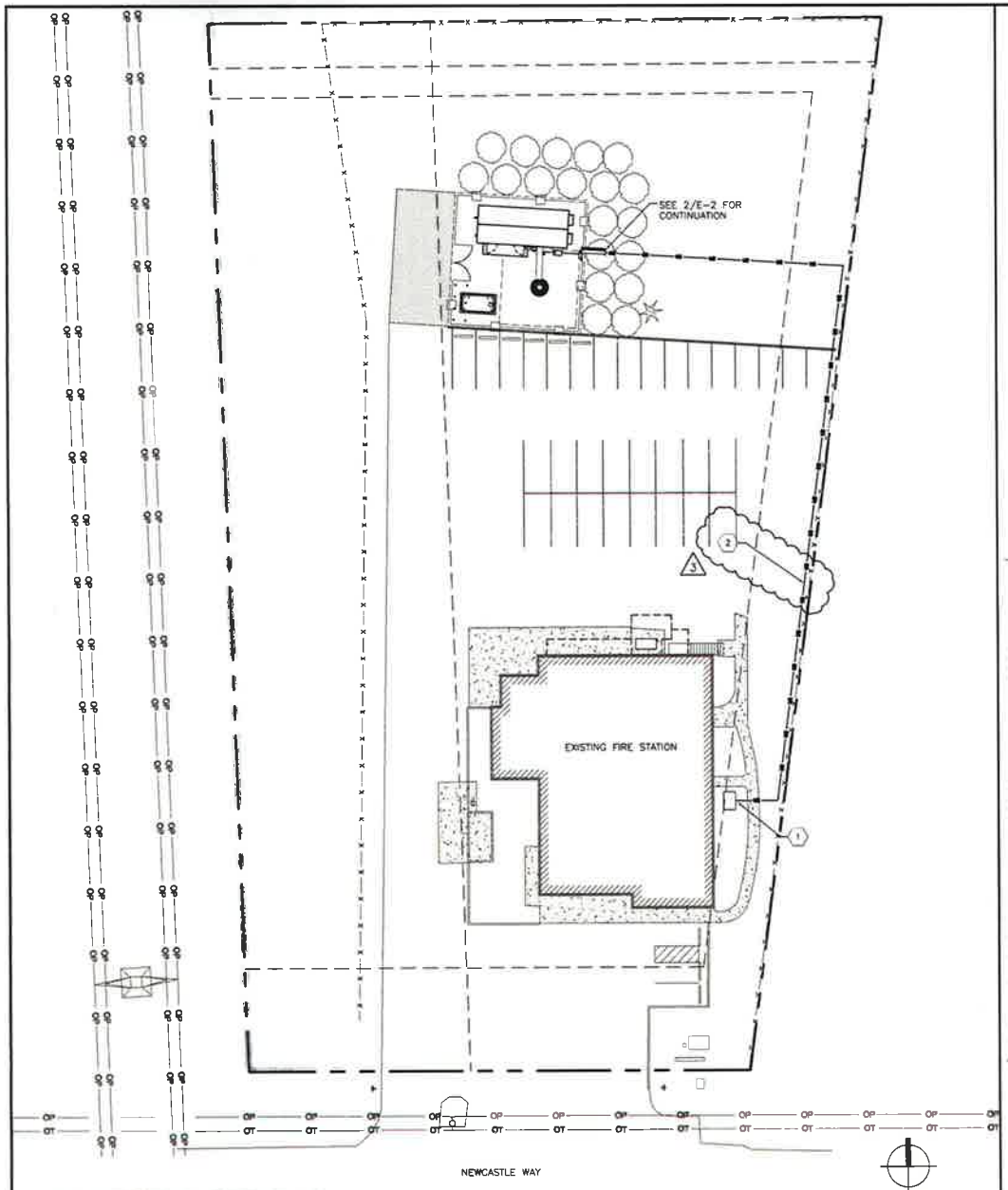
02/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
09/07/16	PLAN REVIEW COMMENTS
08/05/16	ISSUED FOR PERMIT
07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME: ONE-LINE DIAGRAM & PANEL SCHEDULE

SHEET NUMBER: E-1

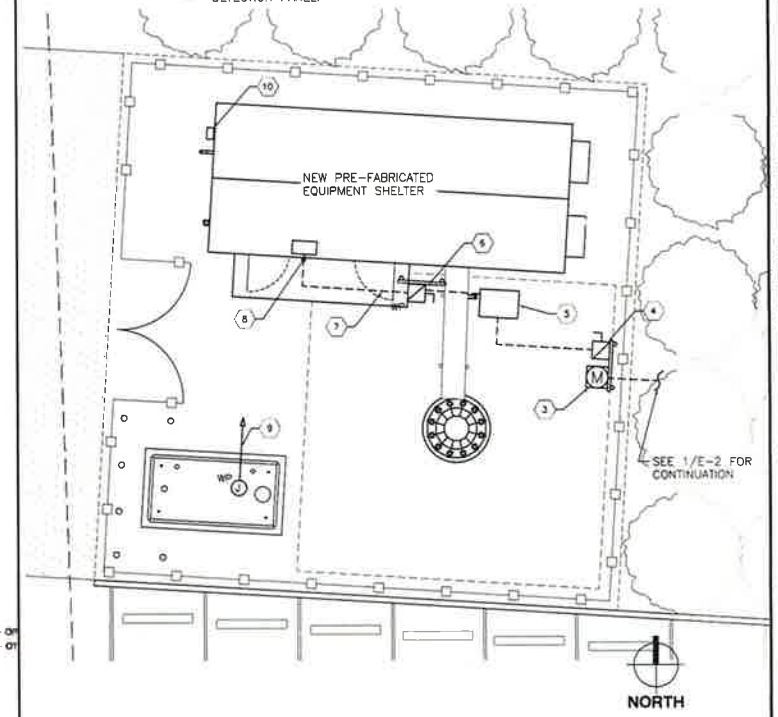


1 **ELECTRICAL SITE PLAN**

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

KEY NOTES:

1. CONTRACTOR SHALL TERMINATE NEW RACEWAY AT EXISTING 277/480V PAD MOUNTED UTILITY TRANSFORMER. COORDINATE INSTALLATION WITH PUGET SOUND ENERGY (PSE) CONTRACTOR SHALL REMOVE EXISTING LANDSCAPING LOCATED IN FRONT OF TRANSFORMER IN ACCORDANCE WITH PSE REQUIREMENTS.
2. NEW 480V 1ø 2W UNDERGROUND SERVICE MINIMUM 36" BELOW FINISH GRADE. RESTORE EXISTING LANDSCAPING TO EXISTING CONDITION.
3. NEW 480V UTILITY METER WITH MOUNTED TO NEW UNISTRUT FRAME. COORDINATE INSTALLATION WITH PSE.
4. NEW FUSED MAIN DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
5. NEW DRY TYPE TRANSFORMER MOUNTED TO CONCRETE PAD WITH VIBRATION ISOLATORS. SEE ONE LINE DIAGRAM 1/E-1.
6. NEW TRANSFORMER DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
7. NEW 120/240V SERVICE TO NEW EQUIPMENT SHELTER LOCATED 36" BELOW FINISH GRADE.
8. CONTRACTOR SHALL TERMINATE AT AUTOMATIC TRANSFER SWITCH PROVIDED WITH NEW PRE-MANUFACTURED EQUIPMENT SHELTER.
9. CONTRACTOR SHALL PROVIDE ALARM CONNECTIONS TO FUEL TANK AND FUEL PIPING ALARM CONDUCTORS TO LEAK DETECTION CONTROL PANEL.
10. CONTRACTOR TO PROVIDE 120V CONNECTION TO LEAK DETECTION PANEL.



2 **PARTIAL ELECTRICAL SITE PLAN**

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

King County

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PUGET SOUND EMERGENCY RADIO NETWORK

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PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

02/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
09/07/16	PLAN REVIEW COMMENTS
08/05/16	ISSUED FOR PERMIT
07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME: ELECTRICAL SITE PLAN

SHEET NUMBER: E-2

GENERAL NOTES:

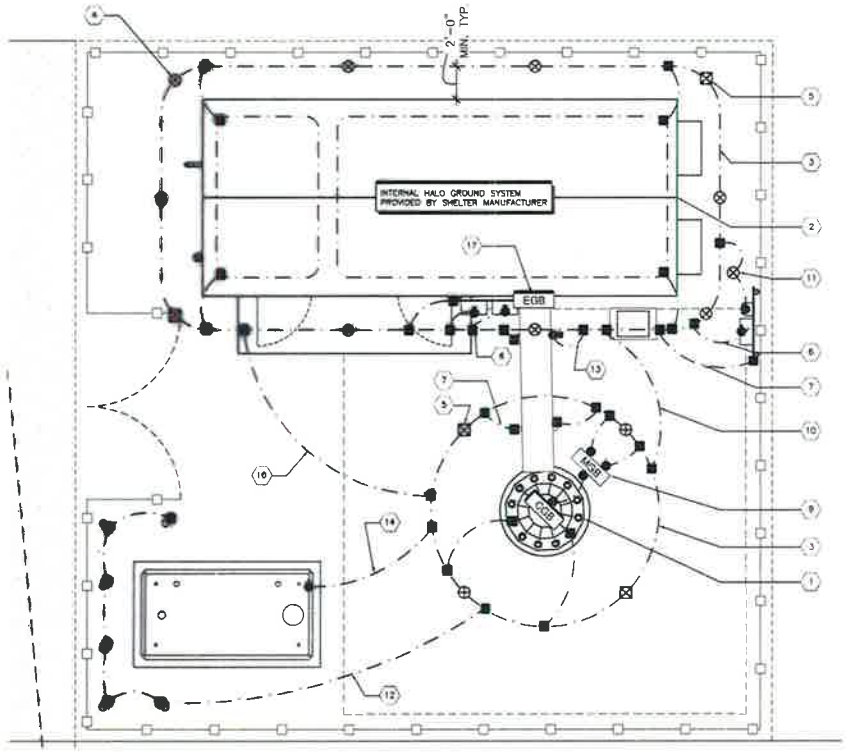
1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COVERED WITH TWO (2) COATS OF SHERWIN WILLIAMS GALVANITE B35W13 OR EQUAL.
2. ALL ELECTRICAL CADWELD AND MECHANICAL GROUND CONNECTIONS WILL HAVE NON-OXIDATION COMPOUND APPLIED TO CONNECTION.
3. ANY METAL OBJECTS WITHIN 8 FEET OF THE EXTERNAL GROUND RING SHALL BE GROUNDED.
4. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
5. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALLED AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
8. OBSERVE NEC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
9. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
10. SITE TO COMPLY WITH R56 STANDARDS FOR GROUNDING.

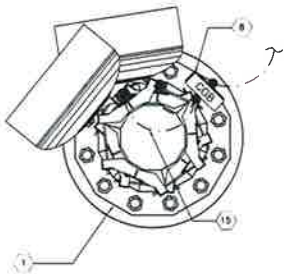
LEGEND

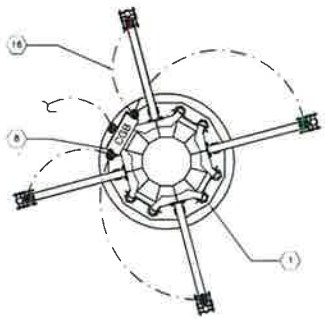
ITEM	DESCRIPTION
●	3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C. (HARGER #5810).
■	CADWELD INSPECTION WELL (SEE DETAIL 3/E-4)
— —	#2 AWG TINNED SOLID BARE COPPER WIRE, MINIMUM 30" BELOW GRADE, OR 6" BELOW LOCAL FROST LINE, U.N.O.
—■—	CADWELD/EXOTHERMIC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

KEYED NOTES:

1. NEW 170' HIGH MONOPOLE TOWER. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO EXOTHERMIC WELD CONNECTION AT BASE OF TOWER.
2. NEW 12'-0" x 30'-0" EQUIPMENT SHELTER.
3. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR LOCATED 30" BELOW FINISH GRADE FOR EXTERIOR GROUND RING AT TOWER AND EQUIPMENT SHELTER.
4. (2/E-4) PROVIDE 3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C.
5. (3/E-4) GROUND INSPECTION AND TEST WELL. SEE DETAIL FOR CONSTRUCTION REQUIREMENTS. MIN (1) ONE PER GROUND RING.
6. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO MECHANICAL CONNECTION AT NEW ELECTRICAL ENCLOSURES.
7. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FOR GROUND CONNECTION TO WAVEGUIDE BRIDGE / UTILITY FRAME PIPE SUPPORT. PROVIDE GROUND CONNECTION AT EACH PIPE SUPPORT.
8. (4/E-4) NEW COLLECTION GROUND BAR MOUNTED AT ANTENNA LEVEL OF TOWER. PROVIDE #2 STRANDED GREEN INSULATED COPPER CONDUCTOR TO MECHANICAL CONNECTION AT MASTER GROUND BAR AT BASE OF TOWER.
9. (5/E-4) NEW MASTER GROUND BAR MOUNTED AT BASE OF TOWER. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT EXTERIOR NEW GROUND RING.
10. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT TOWER GROUND RING TO EXOTHERMIC WELD CONNECTION AT EQUIPMENT SHELTER GROUND RING. PHYSICALLY SEPARATE AS MUCH AS PRACTICAL.
11. NEW METER GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR CADWELDED TO NEW GROUND ROD AND PROVIDE EXOTHERMIC WELD CONNECTION TO EQUIPMENT SHELTER GROUND RING.
12. SAFETY BOLLARD GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO EXOTHERMIC CONNECTION AT BOLLARD, TYP.
13. GPS GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT GPS ANTENNAS, TYP.
14. FUEL TANK GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT FUEL TANK GROUND LUG.
15. MICROWAVE ANTENNA GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT MICROWAVE ANTENNAS, TYP.
16. CORPORATE COLLINEAR ANTENNA GROUNDING, #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT CORPORATE COLLINEAR ANTENNAS, TYP.
17. (6/E-4) EXTERNAL GROUND BAR MOUNTED BELOW ENTRY PORT AT EQUIPMENT SHELTER. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT NEW EXTERIOR GROUND RING.







1 COMPOUND AND ANTENNA GROUNDING PLANS

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

King County

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PUGET SOUND EMERGENCY RADIO NETWORK

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PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

02/01/17	SITE RELOCATION
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07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

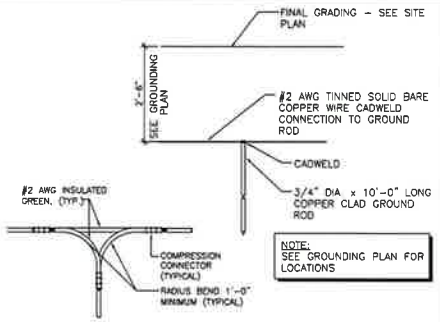
ARCHITECTS STAMP

SHEET NAME: GROUNDING PLAN & NOTES

SHEET NUMBER: E-3

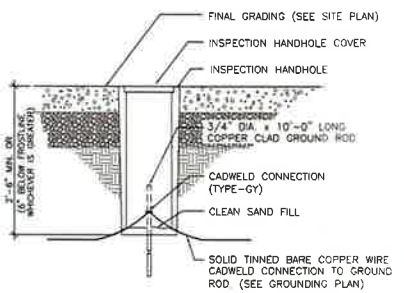
1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES
2. ALL GROUNDING SHALL CONFORM TO R56 STANDARDS.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. PREFABRICATED SHELTER WILL BE PROVIDED WITH INTERNAL WIRING. FOR COMPLETE INTERNAL WIRING REFER TO DRAWINGS PROVIDED BY SHELTER MANUFACTURER
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD)
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION
9. 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.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 3/4"Ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH
12. 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
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED
14. GROUND RING SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
15. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE
16. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING
17. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM)
18. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS
19. MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
20. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
21. ENSURE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
22. GROUND BARS SHALL NOT BE FIELD MODIFIED.
23. USE PANI SCHEME FOR LOADING ON MASTER GROUND BAR AS DISCUSSED IN NSTD 119, 33 & 36

1 GENERAL NOTES
NOT TO SCALE



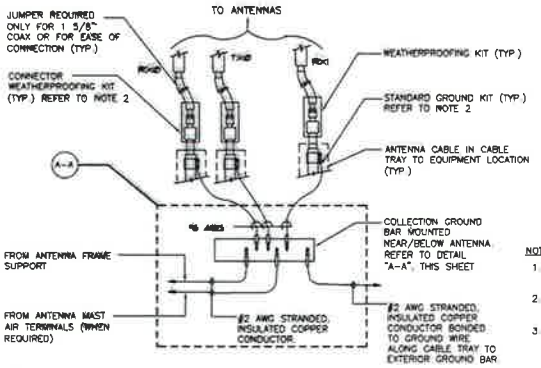
HORIZONTAL GROUND RING SPLICE

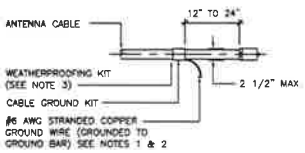
2 GROUND RING DETAIL
NOT TO SCALE



NOTE:
SEE GROUNDING PLAN FOR LOCATIONS

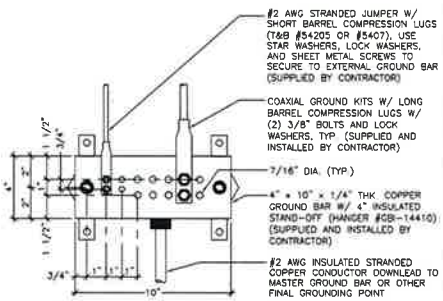
3 CADWELD INSPECTION WELL
NOT TO SCALE





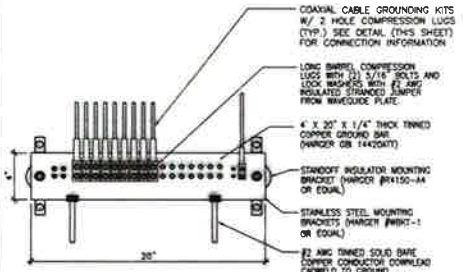
CONNECTION OF COAX CABLE GROUND KIT TO ANTENNA CABLE

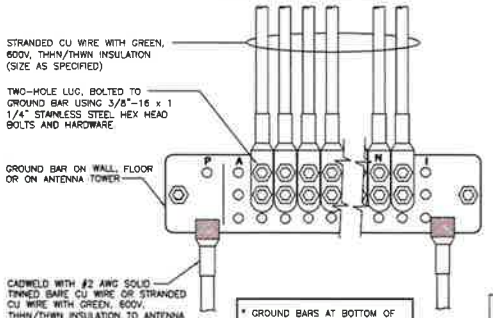
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT (COLD SHRINK SHALL NOT BE USED)



DETAIL "A-A"

4 COAXIAL CABLE GROUND WIRE TO COLLECTION GROUND BAR CONNECTION
NOT TO SCALE





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

PANI SCHEME SPECIFICATIONS:

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

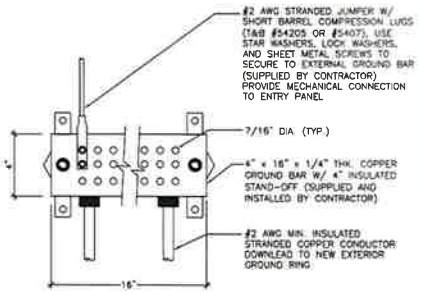
ABSORBER (A)
CONNECTS TO THE EARTH ELECTRODE SYSTEM INCLUDING CENTRAL OFFICE GROUND GRID, BUILDING STRUCTURAL GROUND, METALLIC WATER PIPE SYSTEM, ANTENNA SUPPORTING STRUCTURE GROUND SYSTEM, AND ELECTRICAL SERVICE ENTRANCE GROUND

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

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

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

5 MASTER GROUND BAR DETAILS
NOT TO SCALE



6 EXTERNAL GROUND BAR
NOT TO SCALE

7 NOT USED
-

King County

(((PSERN)))
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

ODELL PACIFIC CORPORATION
5500 6TH AVE. S., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 490-3626
FAX: (206) 490-3633
WWW.ODELA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W, SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-8282
FAX: (425) 252-2980
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AIG
APPROVED BY: PN

2	02/01/17	SITE RELOCATION
1	10/14/16	PLAN REVIEW COMMENTS
0	09/07/16	PLAN REVIEW COMMENTS
	08/05/16	ISSUED FOR PERMIT
	07/26/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
GROUNDING DETAILS & NOTES

SHEET NUMBER
E-4

ATTACHMENT B
PHOTO SIMULATIONS

TIM BRADLEY IMAGING

Date: July 27, 2016

Re: Balloon Test and Photo Simulations
Bellevue Station 9

To: Sarah Telschow
Odelia Pacific Corp.

On June 28, 2016, a red four foot diameter helium balloon was raised to 170 feet above ground level at the proposed location of the new tower, from 9 a.m. to 11a.m.

The height of the balloon is checked with a Laser Range Finder. This number corresponds to the height and location of the proposed tower. Photos are taken from several vantage points to determine the visibility of the proposed tower.

Photo simulations will be produced using these photos. The "before shots" demonstrate the "as is" view of the camera. When inflated, the four foot balloon is a known size and utilized for determining the size of the 8 ft antennas for placement on the proposed tower in completion of the photo simulation(s) as provided.

TBI has specialized in photo simulations and balloon testing for the wireless telecommunications industry since 1998.

Thank you,

Tim Bradley

Tim Bradley
Tim Bradley Imaging

1117 67th Ave Ct. E. Fife, WA 98424
Cell Phone: 253-279-7716
AirPhotoOne@comcast.net

TIM BRADLEY IMAGING

PHOTO SIM LOCATION MAP

TOWER SEEN - SIMS DONE

TOWER SEEN - SIMS NOT DONE

TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #1 LOOKING NORTH
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #2 LOOKING NORTHWEST
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #3 LOOKING NORTHEAST
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #4 LOOKING SOUTHEAST
ON 123RD PL SE

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #5 LOOKING SOUTH
ON 125TH PL SE

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #6 LOOKING WEST
ON SE 68TH PL

PROPOSED

TIM BRADLEY IMAGING

TIM BRADLEY IMAGING

VIEW #7
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #8
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #9
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #10
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #11
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #12
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #13
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #14
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #15
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #16
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #17
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #18
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #19
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #20
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #21
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #22
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #23
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #24
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #25
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #26
TOWER NOT SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #27
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK
Coverage - Capacity - Capability - Connectivity

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #28
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #29
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #30
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #31
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #32
TOWER NOT SEEN

PUGET SOUND EMERGENCY RADIO NETWORK
Coverage • Capacity • Capability • Connectivity

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #33
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #34
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #35
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #36
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #37
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #38
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #39
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

ATTACHMENT C
ACOUSTICAL REPORT

SSA acoustics

June 28, 2016

Sarah Telschow, AICP
Odelia Pacific Corporation
1215 Fourth Avenue, Suite 1900
Seattle, WA 98161

Re: Acoustical Report – King County PSERN Bellevue Station 9
Site: 12412 Newcastle Way, Bellevue, WA 98006

Dear Sarah,

This report presents a noise survey performed in the immediate vicinity of the proposed King County telecommunications facility at 12412 Newcastle Way in Bellevue, Washington. This noise survey extends from the proposed equipment to the nearest properties. The purpose of this report is to document the existing conditions and the impacts of the acoustical changes due to the proposed equipment. This report contains data on the existing and predicted noise environments, impact criteria and an evaluation of the predicted sound levels as they relate to the criteria.

Ambient Conditions

Existing ambient noise levels were measured on site with a Larson Davis 820 sound level meter on October 20, 2015. Measurements were conducted as close to the proposed location as possible and the property lines in accordance with the State of Washington code for Maximum Environmental Noise Levels WAC 173-60-020. The average ambient noise level was 44 dBA, primarily due to local activity.

Code Requirements

The site is located within the City of Bellevue Zoning jurisdiction on property designated with an R-5 zoning. The receiving properties are all zoned R-5.

The proposed new equipment includes equipment support cabinets and an emergency generator. The equipment support cabinets are expected to run 24 hours a day. The generator will run once a week during daytime hours for maintenance and testing purposes only.

Bellevue City Code Chapter 9.18.025 identifies R-5 as Class A EDNA. Under Bellevue City Code 9.18.030, noise from equipment on a Class A EDNA property is limited as follows:

Class A EDNA Receiver: Noise is limited to 55 dBA during daytime hours. During nighttime, defined as the hours between 10 p.m. and 7 a.m., maximum sound levels are reduced by 10 dBA for receiving properties within Class A EDNA's. Since the support cabinets are expected to operate 24 hours a day, they must meet the 45 dBA nighttime limit.

222 Etruria Street, Suite 100
Seattle, WA 98109
206.839.0819 P // 206.839.0824 F

Additionally, Bellevue City Code 9.18.030 allows that during any one-hour period, the maximum permissible noise level may be exceeded by 5 dBA for a 15 minute period. Therefore, the generator must not exceed 60 dBA when running during daytime hours for maintenance testing. The generator cannot exceed 75 dBA at any property line during emergency operation.

Predicted Equipment Sound Levels

24-Hour Operation Equipment

The equipment will be located in a shelter served by two Marvair air conditioning units. According to manufacturer data, the Marvair AVP60 air-conditioning unit each produce a sound pressure level of 73 dB(A) at 5 feet. The units operate on a lead/lag cycle.

The shelter is located within an equipment compound that is surrounded by an 8'-0" all sound attenuating wood fence. The air conditioning units are located on the east side of the shelter. The nearest receiving property is the residential property approximately 100 feet east of the units.

To predict equipment noise levels at the receiving properties, this survey uses the methods established by ARI Standard 275-2010 and ASHRAE. Application factors such as location, height, and reflective surfaces are accounted for in predicting the sound pressure level. The following table presents the predicted noise level at the nearest receiving property:

Table 1
Application Factors and Predicted Noise Levels
Proposed New Equipment

Line	Application Factor	E
1	Equipment Sound Pressure Level at 5 ft. (dBA), Lp1	73
2	Distance Factor (DF) Inverse-Square Law (Free Field): DF = 20log (d1/d2)	-26 (470 ft)
3	Noise Barrier Reduction – Sound attenuating fence	-10
4	New Equipment Sound Pressure Level at Receiver, Lpr	37

According to the predicted noise levels, noise from proposed equipment will meet the 45 dBA nighttime limit at the nearest receiving property.

Emergency Equipment

The proposed equipment includes one Cummins C50 D6 50 kW Generator. According to the manufacturer, the generator will produce 81 dBA at 23 feet.

The generator is located in a room in the west end of the shelter. The engine air discharge is on the north side of the shelter and the engine exhaust and air intake is on the west side of the shelter. A lined hood will be provided on the air intake and discharge. A critical grade muffler will be installed on the exhaust stack. The nearest receiving property is the residential property approximately 130 feet east of the generator location.

The following table presents the resulting noise level at the nearest property:

Receiving Property: East

Source	Sound Level	Distance To Receiver	Building Factor[1]	Noise Control[2]	Distance Factor[3]	dBA Level @ E PL
Discharge	81 dBA	100	-5	-20	-13	58
Intake	81 dBA	100	-7	-20	-13	56
					Total	**59**

Table Notes:
1. Building factor is plenum reduction / increase of building or noise reduction from interfering building element.
2. Noise Control is silencers, lined hoods, or barriers.
3. Distance Factor = -10*LOG(Q)+20*LOG(R2/R1) for dBA or -10*LOG(Q)+20*LOG(R)+0.5 for LwA

According to the predicted noise levels, noise from proposed emergency generator will meet the 65 dBA code at the residential property during test cycle operation and the 75 dBA limit during a power outage.

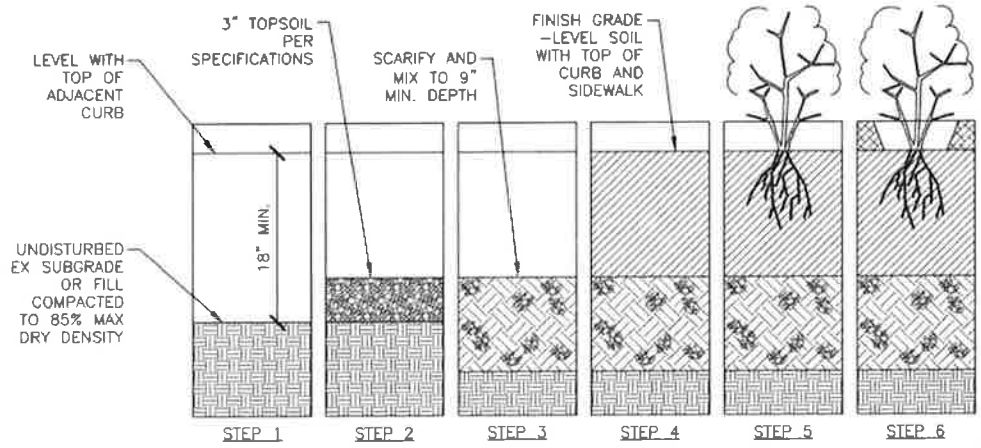
Please contact us if you have any questions or require further information.

Sincerely,
SSA Acoustics, LLP

Alan Burt, P.E.
PARTNER
ACOUSTICAL CONSULTANT

This report has been prepared for the titled project or named part thereof and should not be used in whole or part and relied upon for any other project without the written authorization of SSA Acoustics, LLP. SSA Acoustics, LLP accepts no responsibility or liability for the consequences of this document if it is used for a purpose other than that for which it was commissioned. Persons wishing to use or rely upon this report for other purposes must seek written authority to do so from the owner of this report and/or SSA Acoustics, LLP and agree to indemnify SSA Acoustics, LLP for any and all resulting loss or damage. SSA Acoustics, LLP accepts no responsibility or liability for this document to any other party other than the person by whom it was commissioned. The findings and opinions expressed are relevant to the dates of the works and should not be relied upon to represent conditions at substantially later dates. Opinions included therein are based on information gathered during the study and from our experience. If additional information becomes available which may affect our comments, conclusions or recommendations SSA Acoustics, LLP reserves the right to review the information, reassess any new potential concerns and modify our opinions accordingly.

ATTACHMENT D
CITY OF BELLEVUE, TYPE 2 SOIL PREPARATION



TYPE 2 PREPARATION SEQUENCE:

STEP	DESCRIPTION
1	EXCAVATE EX SOIL TO 18" MIN. DEPTH BELOW FINISH GRADE. AVOID UNDERMINING NEARBY FEATURES.
2	INSTALL 3" DEPTH FINE COMPOST.
3	SCARIFY TOPSOIL TO A 9" DEPTH. ENGINEER SHALL REVIEW & APPROVE SCARIFICATION PRIOR TO PROCEEDING TO STEP 4.
4	INSTALL 15" MIN. DEPTH TOPSOIL TYPE A AND REVIEW FINISH GRADE WITH ENGINEER PRIOR TO PLANTING.
5	INSTALL PLANTS, MATERIALS & IRRIGATION PER SPECIFICATIONS.
6	INSTALL 1½" DEPTH MULCH PER SPECIFICATIONS (NO WOOD CHIPS)

NOTES:
1. ALL DIMENSIONS INDICATE COMPACTED DEPTHS. TOPSOIL TYPE A & MULCH SHALL BE COMPACTED TO 85% DRY DENSITY.
2. INCREASE DEPTH OF EXCAVATION & TOPSOIL TO ACCOMODATE TREE ROOT BALL DEPTHS OF 18"–30".
3. MOUND TOPSOIL IN PLANTER STRIPS AND MEDIANS PER SPECIFICATIONS.

City of Bellevue

TITLE: TYPE 2 SOIL PREPARATION

DRAWING #:	PK-IM-XX
SCALE:	N.T.S.
REVISION DATE:	08-2015
DEPARTMENT:	PARKS

ATTACHMENT E
MICROWAVE PATH SURVEY

Aviat
NETWORKS

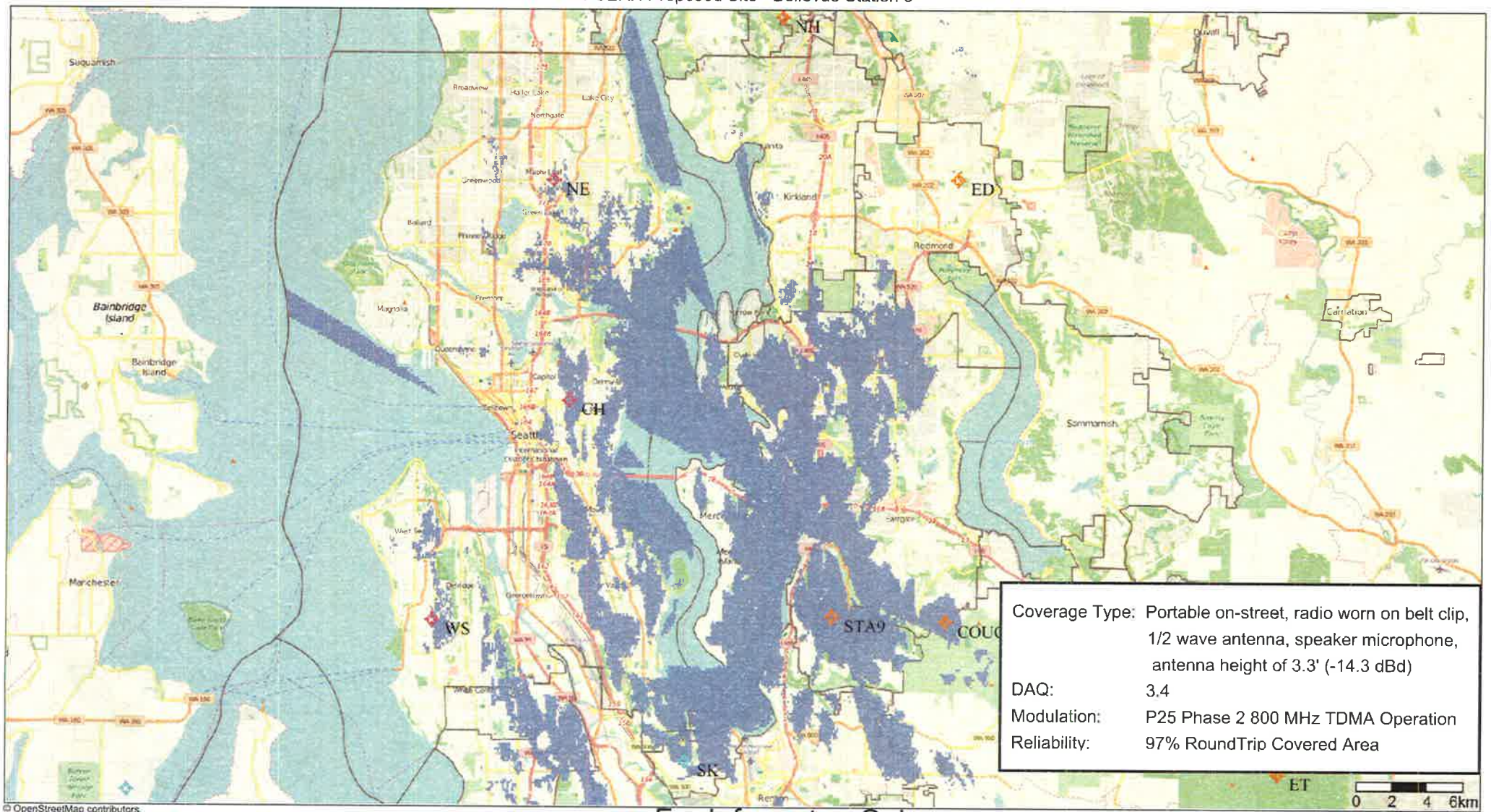
Microwave Path Survey Report

Motorola PSERN
Bellevue FS#9 to Capitol Hill
NA130703-48393

Release 2.0
September 2015/Feb. 2016

MOTOROLA

PSERN Proposed Site - Bellevue Station 9



© OpenStreetMap contributors.

Solution: PSERN 800MHz

Job ID: 6743530611.1.16

Workspace: PSERN Full System

System version: 20160608, N/A, 1.91.1

Design: Design 61

Printed: 6/23/2016

For Informaton Only
(Non-Simulcast Map)

Legend

site_area_reliability Portable APX4000 TDMA spk mic STA9 [Component Rel]

Scale 1 : 200000

Issue Releases

Issue Number	Issue Release Date	Changes	Preparer
1.0	September 2015	Initial Release	Justin Lowendick
2.0	February 2016	Re-design to add 20 feet of future growth onto all trees along the path.	Justin Lowendick

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GENERAL

STATEMENT OF WORK

The following report summarizes the results of a microwave path survey conducted by Aviat Networks, Santa Clara, California, for Motorola - PSERN. Field survey work was performed on August 24th – September 4th, 2015, by Justin Lowendick.

The survey was undertaken to verify site locations and determine antenna sizes and centerlines required to establish a microwave communications system in conformance with customer requirements and current engineering practices.

SURVEY PROCEDURES

Preliminary path profiles will be drawn based on the supplied site coordinates and contour information extracted from the best available topographic mapping. A field site survey will be conducted to verify site coordinates and elevations based on North American Datum 1983 (NAD83) and gather information related to the proposed radio equipment and antenna locations, site access, and site development constraints. A field path survey will be conducted to verify path profile elevations, measure all natural and manmade potential obstructions and assess the reflective potential of all natural and manmade surfaces. Antenna centerline heights will be calculated for the proposed frequency band by applying suitable clearance criteria based on the propagation characteristics of the geographic area.

Path calculation sheets will then be generated for each hop, based upon the recommended centerline heights. Antenna sizes and the choice of propagation protection diversity will be chosen to meet the required fade margin and the desired path propagation reliability. Propagation outage and reliability calculations will be based on the Vigants model (ref. "Space Diversity Engineering", BSTJ, 1/75).

DESIGN CRITERIA

Path clearance criteria must be established for each path on the basis of total system performance objectives, economic considerations, and careful analysis of local atmospheric conditions derived from published climatological data, where available, and reported microwave transmission experience pertinent to the area. Antenna heights much greater than actually needed cause an unwarranted increase in system cost, and on paths with significant ground reflections, it can increase the exposure to multipath and ground reflection signal fading. It is desirable to locate the antennas high enough so that even under severe super-standard atmospheric refractive conditions (surface ducting) there is adequate clearance such that signal entrapment does not significantly degrade the fade margin of the path or generate excessive multipath fade activity. The choice of clearance criteria for a microwave path is a balance between cost and performance.

The path clearance criterion as applied to a given geographic area is a function of the degree and direction of atmospheric beam bending and can conveniently be defined by the equivalent earth radius K factor:

$$K = \frac{Effective\ \ Earth's\ \ Radius}{Actual\ \ Earth's\ \ Radius}$$

The Median Propagation value of K = 4/3 allows the normal microwave horizon to be slightly extended when compared to the optical horizon; however, under certain meteorological conditions (for example, during nighttime super-refractivity usually associated with temperature inversions) the value of K increases to 2 or greater for periods of several minutes to several hours. This increases the path clearance and results in the heavy multipath fade activity seen on some reflective paths and antenna decoupling power fading on others.

CLEARANCE CRITERIA

The criteria used to design a radio path in regions where the X-factor is equal to or less than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 60% first Fresnel zone radius over K=1, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

The criteria used to design a radio path in regions where the X-factor is greater than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 30% first Fresnel zone radius over K=2/3, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

MICROWAVE PATH PERFORMANCE CALCULATIONS AND WARRANTIES

The microwave path design models most frequently employed within the industry (e.g., Vigants, and ITU PN-530) provide a reasonably accurate (and therefore usually guaranteed) estimate of the cumulative time a path will be out of service due to random atmospheric multipath fading under normal atmospheric conditions. **These models do not (and cannot) accommodate abnormal, unusual, anomalous, or otherwise unpredictable conditions of weather or atmospheric refractivity**.

MICROWAVE FREQUENCY ENGINEERING / INTER-SYSTEM INTERFERENCE ANALYSIS

Aviat Networks will partner with Comsearch, a CommScope company, to provide cost-effective frequency planning and FCC licensing services for radio communications systems (if required). The planning software used, considers specific operating parameters of both the proposed microwave system and the environment microwave systems (license and proposed) to properly consider the interference potential of the new path or system. Parameters and data elements incorporated into the modeling include, but are not limited to, antenna type, antenna height, elevation, antenna radiation pattern, receiver filter performance, terrain, radio modulation, path orientation, receiver threshold, etc. These elements are required to accurately predict specific interfering levels into and from the existing microwave systems. The accuracy of the calculations is ensured by "real time" maintenance of the Comsearch point-to-point microwave, earth station, radio equipment, antenna, interference objective, and contact database.

MICROWAVE FREQUENCY SELECTION

The interference analysis performed on the microwave system identifies available frequencies considering existing and proposed systems found in the Comsearch database. When applicable, an analysis of the systems in the adjacent bands can be done to ensure the microwave system does not receive unwanted threshold degradation. In bands shared with satellite systems, an analysis of potential interference with earth stations and with the geo-stationary satellite orbit can also be done. Additionally, co-located or nearby transmitters already licensed in the required frequency band can be identified in order to reduce the possibility of "bucking" an existing high/low frequency plan that could increase the possibility of receiver overload or reflective interference from a nearby system.

MICROWAVE FREQUENCY COORDINATION AND FCC LICENSING

The majority of microwave bands subject to FCC Rule Part 101 require prior coordination with existing licensees. Aviat Networks will partner with Comsearch to perform the frequency coordination and FCC licensing on behalf of the customer (if required). The procedure will include notification of the technical parameters of the proposed system to all existing and proposed licensees in the area and frequency band of operation. Frequency coordination will also be performed with Canadian and Mexican authorities in border areas when necessary. By FCC rule, recipients are given 30 days to respond, or in some cases an expedited response can be requested.

Upon completion of the prior coordination process, documentation required to satisfy FCC Rule Part 101.103 (d) can be prepared on behalf of the customer. This will include any necessary exhibits, including Supplemental Showings required upon submittal of the requested license application. The FCC filing process includes:

- Filing of the FCC Form 601 microwave application upon written approval from the customer and providing an electronic copy of the application to the customer via email.
- Tracking the status of the application until the license is granted by the FCC. Amendments will be handled expeditiously on behalf of the customer for any questions or concerns from the Commission.
- Email notifications to the licensee when the license is granted by the FCC.

- Filing of the required "Completion of Construction" notification with the FCC upon written approval from the licensee and notification of the filing via email.

SPECIAL CONSIDERATIONS

On all microwave radio paths traversing urban areas there exists the possibility of multiple on- and off-path structural reflections which generate long-delayed echoes, as well as "terrain scatter" RF intra- and inter-system interference. Long delayed, low-level echoes have no effect on digital radio performance; however, the terrain scatter mechanism cannot be accurately predicted nor precisely measured without an extensive and expensive field trial. Consequently, this mechanism is specifically excluded from all current industry-wide path survey and frequency coordination performance guarantees.

The structure supporting the microwave antenna can take many forms. The antenna is most often mounted on a tower, but can be mounted on a variety of structures such as roof tripods, penthouse wall, wooden telephone pole or metal monopole. It is recommended that the customer or end user conduct a structural analysis of the support structure to determine if the structure will support the additional loading imposed by the antenna and its mount. The structure must also meet the twist and sway requirements per EIA/ANSI 222G.

Certain geographic areas / frequency bands are restricted due to Radio Astronomy use or DOD and other Government top-secret installations. Even outside the absolute exclusion zone, there are areas where 18 GHz can be cleared by DOD. Coordinators must file applications and wait for the FCC to contact NTIA and NTIA to contact IRAC to analyze these before FCC licenses are granted. If the application is rejected, the proposed microwave link could be subject to redesign with another frequency band.

SITE INFORMATION – Bellevue FS#9

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	32	'	28.83 "N
122	°	10	'	28.26 "W
Elev:		433	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	32	'	30.5 "N
122	°	10	'	28.6 "W
Elev:		436	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 12412 Newcastle Way
City: Newcastle
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☐Existing ☒New
- Tower Type: ☐Guyed ☐Self Supporting ☒Monopole ☐Rooftop ☐Water tank ☐Other: _____

The tower is a proposed monopole, a minimum centerline height of 165 feet is required to meet the design clearance criteria due to trees along the paths.

Antenna Mounting Considerations for each path:

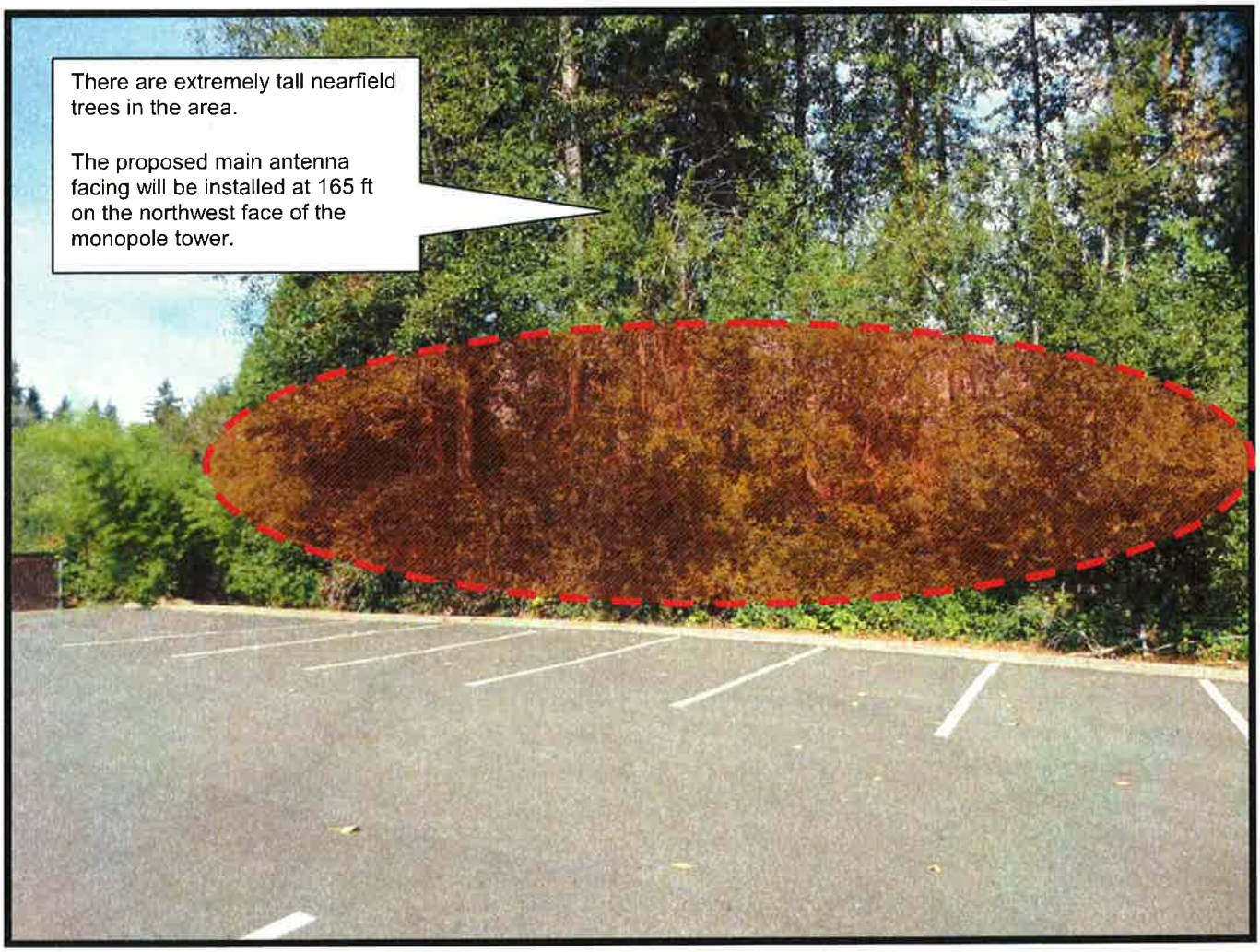
- Path to Capitol Hill: The proposed main antenna will be installed at 165 ft on the northwest face of the monopole tower.
  - Centerline: 165 feet
  - Azimuth: 309.19°
  - Tilt Angle: -0.14°

Transmission Line Considerations for each path:

- Path to Capitol Hill: An estimated 220 feet of cable is required from the proposed antenna height to the radio in the equipment room.
- Cable Ladder: ☐Use Existing ☒Recommended ☐Not Required
- Cable Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Entry Ports: ☐Use Existing ☒New Entry Port Required
- Ground Bus Bar: ☐Use Existing ☒New Bus Bar Required

Site Access Considerations:
The site is located off of a paved parking lot. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

SITE PHOTOS



Bellevue FS#9

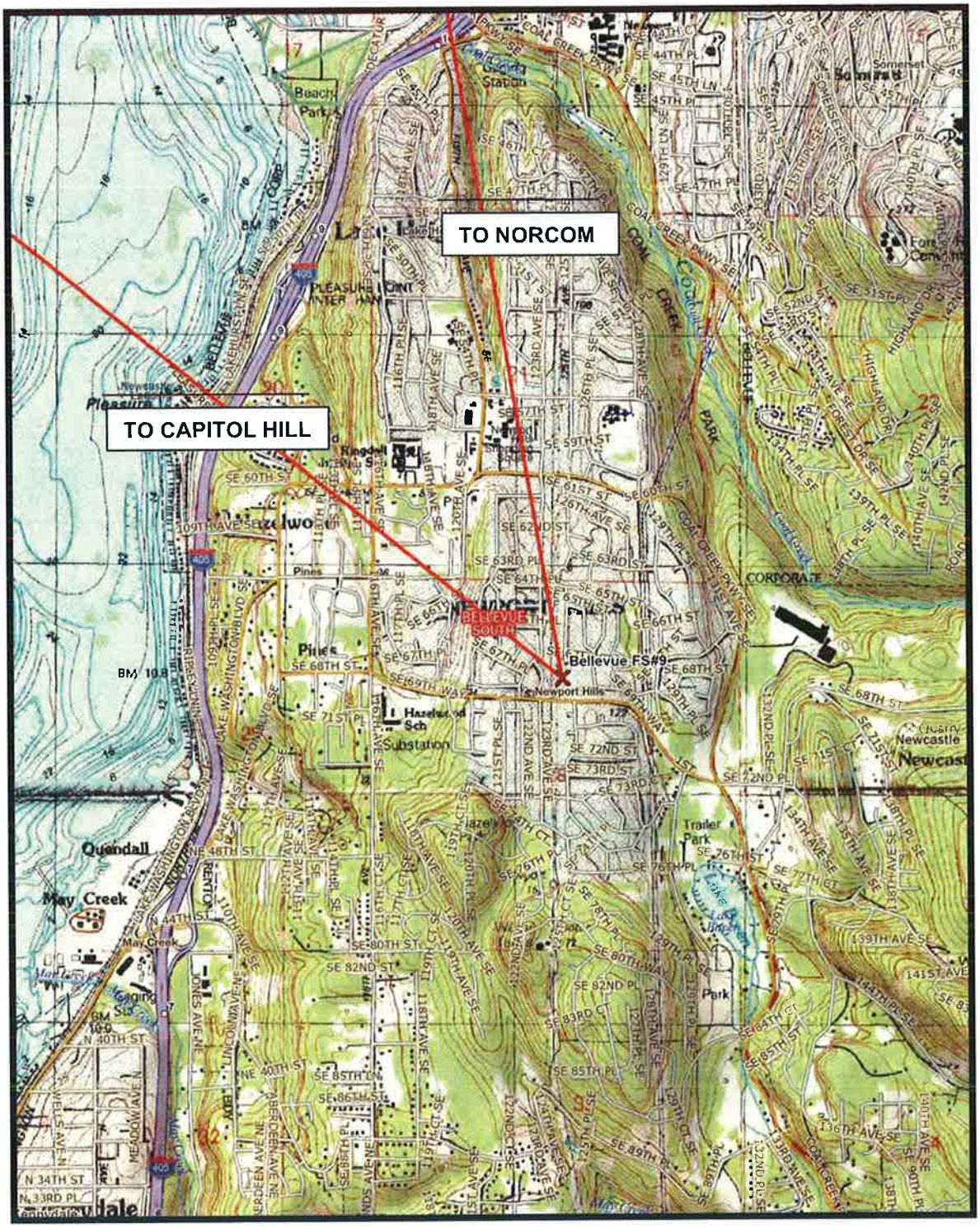
View of the Area to be Cleared to Make Room for Tower Compound – Behind Bellevue Fire Station #9 Building

View of the Azimuth facing Capitol Hill

MAP EXTRACTS

Bellevue FS#9

NAD 83						
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South



Bellevue FS#9

NAD 83						
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South

SITE INFORMATION – Capitol Hill

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83					
47	°	36	'	56.35	"N
122	°	18	'	31.45	"W
Elev:		415	ft		

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83					
47	°	36	'	56.8	"N
122	°	18	'	32.1	"W
Elev:		410	ft		

ASR, NAD 83					
47	°	36	'	57.0	"N
122	°	18	'	32.0	"W
Elev:		410	ft	125.0	m

FCC Licensed Coordinates, NAD 83					
47	°	36	'	56.3	"N
122	°	18	'	31.4	"W
Elev:		410	ft	125.0	m

Street Address: 1729 East Madison St.
City: Seattle
County: King
State: Washington

Tower Registration Number: 1032916
Call Sign: WNTS653

Tower Considerations:

- Tower Structure: ☒Existing ☐New
- Tower Type: ☐Guyed ☒Self Supporting ☐Monopole ☐Rooftop ☐Water tank ☐Other: _____

The tower is an existing 500 foot self-support structure with three round legs and is painted. On top is a 95 foot radio antenna bringing the total height to 595 feet.

Antenna Mounting Considerations for each path:

- Path to Bellevue FS#9: The proposed main antenna will be installed at 119 ft on the southeast leg of the tower.
  - Centerline: 119 feet
  - Azimuth: 129.10°
  - Tilt Angle: +0.05°

Transmission Line Considerations for each path:

- Path to West Seattle: An estimated 210 feet of waveguide is required from the main antenna to the radio in the shelter.
- Cable Ladder: ☒Use Existing ☐Recommended ☐Not Required
- Cable Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Ice Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Entry Ports: ☒Use Existing ☐New Entry Port Required
- Ground Bus Bar: ☒Use Existing ☐New Bus Bar Required

Site Access Considerations:

The site is located off of a paved road. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

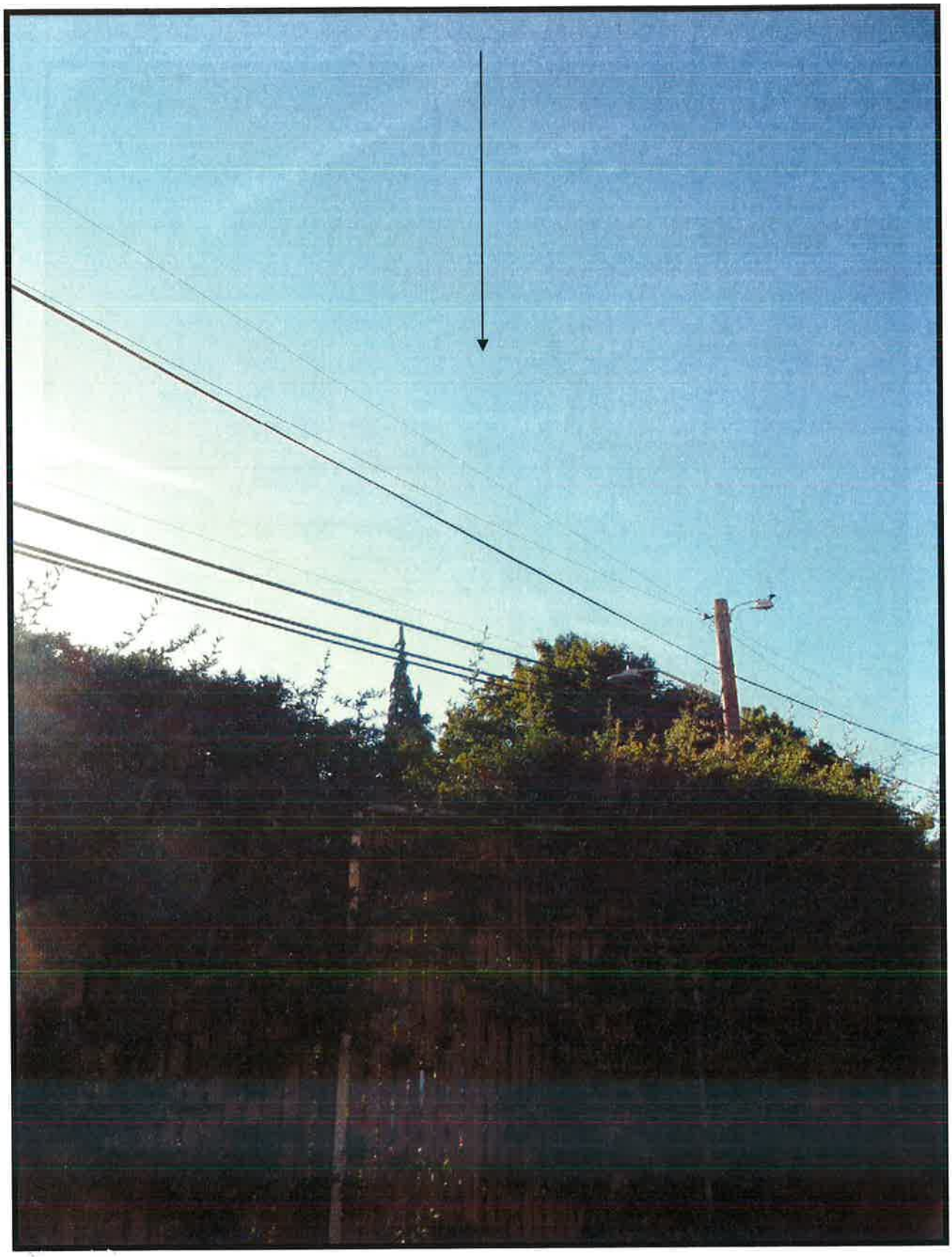
SITE PHOTOS

View of the Capitol Hill Tower

View of the Horizontal Waveguide Run

View of the Exterior Waveguide Entry Port

Proposed Radios To Replace the Existing Equipment in this Equipment Row

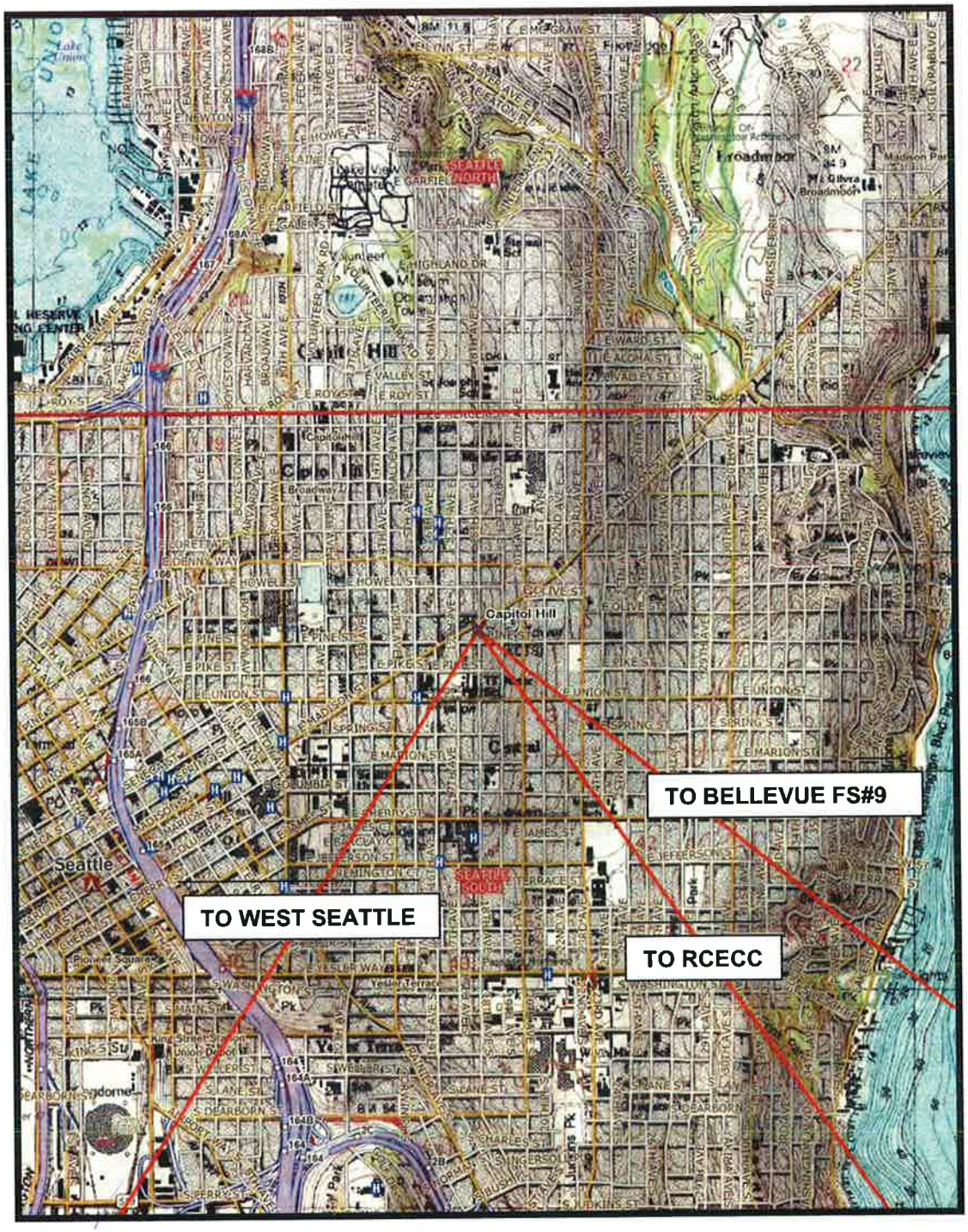


View of the Azimuth to Bellevue FS#9

MAP EXTRACTS

Capitol Hill

NAD 83						
47	°	36	'	56.8	"N	State: Washington
122	°	18	'	32.1	"W	County: King
Elev:		410	ft			Ref Map: Seattle South



Capitol Hill

NAD 83						
47	°	36	'	56.8	"N	State: Washington
122	°	18	'	32.1	"W	County: King
Elev:		410	ft			Ref Map: Seattle South

PATH INFORMATION

PATH DESCRIPTIONS

Bellevue FS#9 to Capitol Hill

Path Length: 8.09 Miles
Frequency Band: 11 GHz

General Path Description:
The Bellevue FS#9 site is a proposed monopole tower and Capitol Hill is an existing site and tower. Due to taller nearfield trees at the Bellevue FS#9 site and tall trees along Mercer Island, the centerline at Bellevue FS#9 needed to be raised to a minimum of 165 feet in order to meet the design clearance criteria. The path crosses rolling hills across the bay with tall trees.

Path Climate considerations:
The path is located in an area that is considered "average" for radio wave propagation. The area is considered to have an oceanic climate. Typically winters are cool and wet with summers being warm and mostly dry. Precipitation averages around 37 inches per year with the largest amount of rainfall from November to February. Snowfall is typical but heavy snows are rare except at higher elevations of the mountains and their surrounding areas.

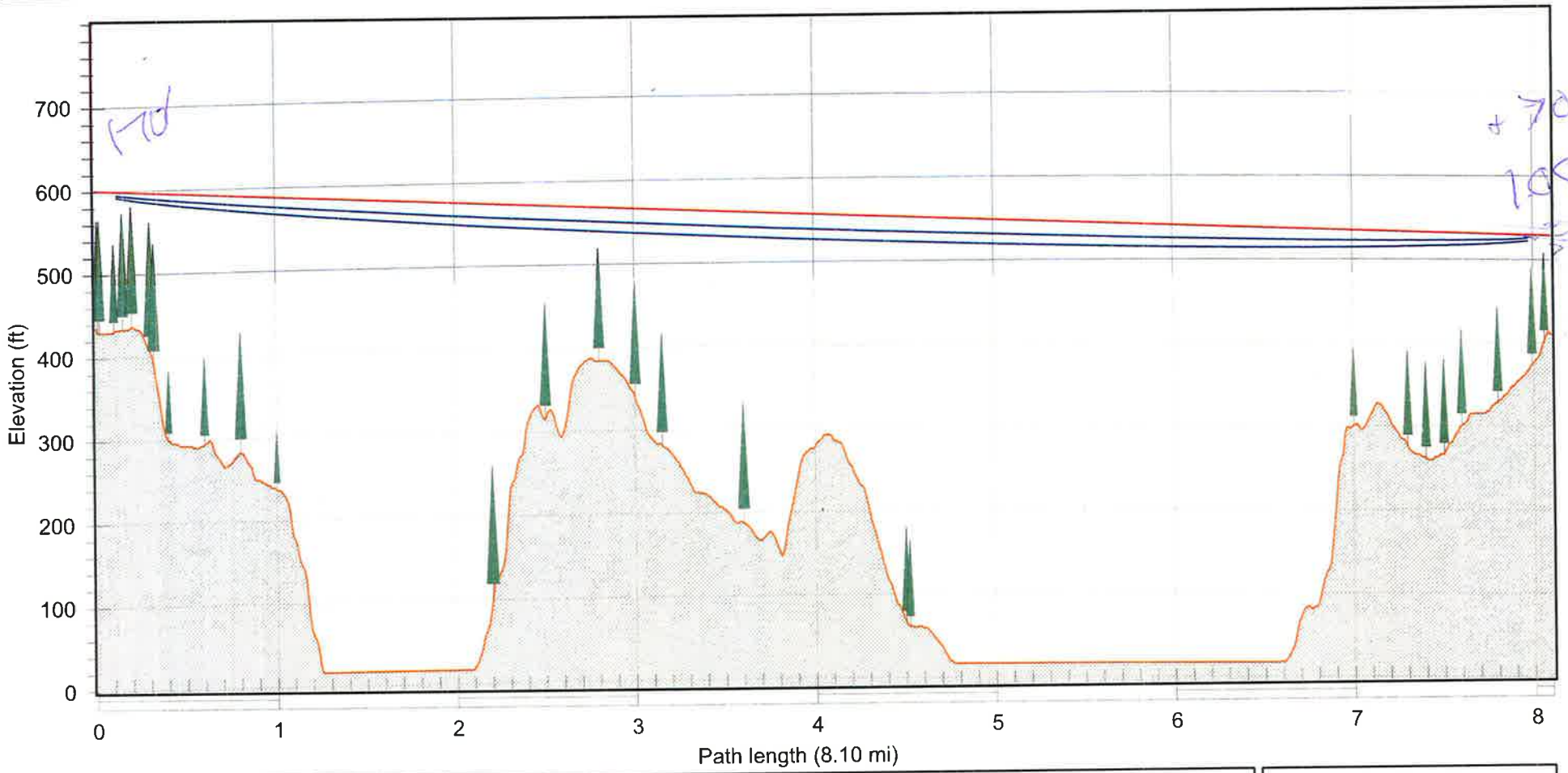
	Bellevue FS#9	Capitol Hill
Latitude	47 32 30.50 N	47 36 56.80 N
Longitude	122 10 28.60 W	122 18 32.10 W
True azimuth (°)	309.19	129.10
Vertical angle (°)	-0.14	0.05
Elevation (ft)	436.00	410.00
Antenna model	HP4-107 (TR)	HP4-107 (TR)
Antenna file name	3224	3224
Antenna gain (dBi)	40.40	40.40
Antenna height (ft)	165.00	119.00
TX line model	EW90	EW90
TX line unit loss (dB/100 ft)	3.06	3.06
TX line length (ft)	220.00	210.00
TX line loss (dB)	6.74	6.43
Connector loss (dB)	0.39	0.39
Circulator branching loss (dB)	0.40	0.40
Frequency (MHz)	11200.00	
Polarization	Vertical	
Path length (mi)	8.10	
Free space loss (dB)	135.75	
Atmospheric absorption loss (dB)	0.21	
Net path loss (dB)	69.91	69.91
Configuration	NP	NP
Radio model	I600V3H11_40M 64Q 156Mb	I600V3H11_40M 64Q 156Mb
Radio file name	i3h11_40m_100t	i3h11_40m_100t
TX power (watts)	0.63	0.63
TX power (dBm)	28.00	28.00
Emission designator	40M0D7W	40M0D7W
EIRP (dBm)	60.87	61.18
RX threshold criteria	1E-6 BER	1E-6 BER
RX threshold level (dBm)	-73.25	-73.25
Receive signal (dBm)	-41.91	-41.91
Thermal fade margin (dB)	31.34	31.34
Dispersive fade margin (dB)	51.70	51.70
Dispersive fade occurrence factor	1.00	

RECOMMENDED - FIELD VERIFIED

	Bellevue FS#9	Capitol Hill
Effective fade margin (dB)	31.30	31.30
Climatic factor	1.00	
Terrain roughness (ft)	133.04	
C factor	0.28	
Average annual temperature (°F)	43.72	
Fade occurrence factor (Po)	4.163E-003	
Worst month multipath availability (%)	99.99969	99.99969
Worst month multipath unavailability (%)	0.00031	0.00031
Worst month multipath unavailability (sec)	8.10	8.10
Annual multipath availability (%)	99.99993	99.99993
Annual multipath unavailability (sec)	21.26	21.26
Annual 2 way multipath availability (%)	99.99987	
Annual 2 way multipath unavailability (sec)	42.51	
Polarization	Vertical	
Rain region	C-96 Temp. Maritime	
Rain rate (mm/hr)	131.90	
Flat fade margin - rain (dB)	31.34	
Rain attenuation (dB)	31.36	
Annual rain availability (%)	99.99996	
Annual rain unavailability (min)	0.20	
Annual rain + multipath availability (%)	99.99983	
Annual rain + multipath unavailability (min)	0.90	

Multipath fading method - Vigants - Barnett
Rain fading method - Crane

RECOMMENDED - FIELD VERIFIED



Bellevue FS#9	
Latitude	47 32 30.50 N
Longitude	122 10 28.60 W
Azimuth	309.19°
Elevation	436 ft ASL
Antenna CL	165.0 ft AGL

Frequency (MHz) = 11200.0
K = 1.33
%F1 = 60.00, 100.00

Capitol Hill	
Latitude	47 36 56.80 N
Longitude	122 18 32.10 W
Azimuth	129.10°
Elevation	410 ft ASL
Antenna CL	119.0 ft AGL

Microwave Path Survey Report

Motorola PSERN
Norcom to Bellevue FS#9
NA130703-48393

Release 2.0
September 2015/ Feb. 2016

Issue Releases

Issue Number	Issue Release Date	Changes	Preparer
1.0	September 2015	Initial Release	Justin Lowendick
2.0	February 2016	Re-design to add 20 feet of future growth onto all trees along the path.	Justin Lowendick

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GENERAL

STATEMENT OF WORK

The following report summarizes the results of a microwave path survey conducted by Aviat Networks, Santa Clara, California, for Motorola - PSERN. Field survey work was performed on August 24th – September 4th, 2015, by Justin Lowendick.

The survey was undertaken to verify site locations and determine antenna sizes and centerlines required to establish a microwave communications system in conformance with customer requirements and current engineering practices.

SURVEY PROCEDURES

Preliminary path profiles will be drawn based on the supplied site coordinates and contour information extracted from the best available topographic mapping. A field site survey will be conducted to verify site coordinates and elevations based on North American Datum 1983 (NAD83) and gather information related to the proposed radio equipment and antenna locations, site access, and site development constraints. A field path survey will be conducted to verify path profile elevations, measure all natural and manmade potential obstructions and assess the reflective potential of all natural and manmade surfaces. Antenna centerline heights will be calculated for the proposed frequency band by applying suitable clearance criteria based on the propagation characteristics of the geographic area.

Path calculation sheets will then be generated for each hop, based upon the recommended centerline heights. Antenna sizes and the choice of propagation protection diversity will be chosen to meet the required fade margin and the desired path propagation reliability. Propagation outage and reliability calculations will be based on the Vigants model (ref. "Space Diversity Engineering", BSTJ, 1/75).

DESIGN CRITERIA

Path clearance criteria must be established for each path on the basis of total system performance objectives, economic considerations, and careful analysis of local atmospheric conditions derived from published climatological data, where available, and reported microwave transmission experience pertinent to the area. Antenna heights much greater than actually needed cause an unwarranted increase in system cost, and on paths with significant ground reflections, it can increase the exposure to multipath and ground reflection signal fading. It is desirable to locate the antennas high enough so that even under severe super-standard atmospheric refractive conditions (surface ducting) there is adequate clearance such that signal entrapment does not significantly degrade the fade margin of the path or generate excessive multipath fade activity. The choice of clearance criteria for a microwave path is a balance between cost and performance.

The path clearance criterion as applied to a given geographic area is a function of the degree and direction of atmospheric beam bending and can conveniently be defined by the equivalent earth radius K factor:

$$K = \frac{Effective\ \ Earth's\ \ Radius}{Actual\ \ Earth's\ \ Radius}$$

The Median Propagation value of K = 4/3 allows the normal microwave horizon to be slightly extended when compared to the optical horizon; however, under certain meteorological conditions (for example, during nighttime super-refractivity usually associated with temperature inversions) the value of K increases to 2 or greater for periods of several minutes to several hours. This increases the path clearance and results in the heavy multipath fade activity seen on some reflective paths and antenna decoupling power fading on others.

CLEARANCE CRITERIA

The criteria used to design a radio path in regions where the X-factor is equal to or less than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 60% first Fresnel zone radius over K=1, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

The criteria used to design a radio path in regions where the X-factor is greater than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 30% first Fresnel zone radius over K=2/3, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

MICROWAVE PATH PERFORMANCE CALCULATIONS AND WARRANTIES

The microwave path design models most frequently employed within the industry (e.g., Vigants, and ITU PN-530) provide a reasonably accurate (and therefore usually guaranteed) estimate of the cumulative time a path will be out of service due to random atmospheric multipath fading under normal atmospheric conditions. **These models do not (and cannot) accommodate abnormal, unusual, anomalous, or otherwise unpredictable conditions of weather or atmospheric refractivity**.

MICROWAVE FREQUENCY ENGINEERING / INTER-SYSTEM INTERFERENCE ANALYSIS

Aviat Networks will partner with Comsearch, a CommScope company, to provide cost-effective frequency planning and FCC licensing services for radio communications systems (if required). The planning software used, considers specific operating parameters of both the proposed microwave system and the environment microwave systems (license and proposed) to properly consider the interference potential of the new path or system. Parameters and data elements incorporated into the modeling include, but are not limited to, antenna type, antenna height, elevation, antenna radiation pattern, receiver filter performance, terrain, radio modulation, path orientation, receiver threshold, etc. These elements are required to accurately predict specific interfering levels into and from the existing microwave systems. The accuracy of the calculations is ensured by "real time" maintenance of the Comsearch point-to-point microwave, earth station, radio equipment, antenna, interference objective, and contact database.

MICROWAVE FREQUENCY SELECTION

The interference analysis performed on the microwave system identifies available frequencies considering existing and proposed systems found in the Comsearch database. When applicable, an analysis of the systems in the adjacent bands can be done to ensure the microwave system does not receive unwanted threshold degradation. In bands shared with satellite systems, an analysis of potential interference with earth stations and with the geo-stationary satellite orbit can also be done. Additionally, co-located or nearby transmitters already licensed in the required frequency band can be identified in order to reduce the possibility of "bucking" an existing high/low frequency plan that could increase the possibility of receiver overload or reflective interference from a nearby system.

MICROWAVE FREQUENCY COORDINATION AND FCC LICENSING

The majority of microwave bands subject to FCC Rule Part 101 require prior coordination with existing licensees. Aviat Networks will partner with Comsearch to perform the frequency coordination and FCC licensing on behalf of the customer (if required). The procedure will include notification of the technical parameters of the proposed system to all existing and proposed licensees in the area and frequency band of operation. Frequency coordination will also be performed with Canadian and Mexican authorities in border areas when necessary. By FCC rule, recipients are given 30 days to respond, or in some cases an expedited response can be requested.

Upon completion of the prior coordination process, documentation required to satisfy FCC Rule Part 101.103 (d) can be prepared on behalf of the customer. This will include any necessary exhibits, including Supplemental Showings required upon submittal of the requested license application. The FCC filing process includes:

- Filing of the FCC Form 601 microwave application upon written approval from the customer and providing an electronic copy of the application to the customer via email.
- Tracking the status of the application until the license is granted by the FCC. Amendments will be handled expeditiously on behalf of the customer for any questions or concerns from the Commission.
- Email notifications to the licensee when the license is granted by the FCC.

- Filing of the required "Completion of Construction" notification with the FCC upon written approval from the licensee and notification of the filing via email.

SPECIAL CONSIDERATIONS

On all microwave radio paths traversing urban areas there exists the possibility of multiple on- and off-path structural reflections which generate long-delayed echoes, as well as "terrain scatter" RF intra- and inter-system interference. Long delayed, low-level echoes have no effect on digital radio performance; however, the terrain scatter mechanism cannot be accurately predicted nor precisely measured without an extensive and expensive field trial. Consequently, this mechanism is specifically excluded from all current industry-wide path survey and frequency coordination performance guarantees.

The structure supporting the microwave antenna can take many forms. The antenna is most often mounted on a tower, but can be mounted on a variety of structures such as roof tripods, penthouse wall, wooden telephone pole or metal monopole. It is recommended that the customer or end user conduct a structural analysis of the support structure to determine if the structure will support the additional loading imposed by the antenna and its mount. The structure must also meet the twist and sway requirements per EIA/ANSI 222G.

Certain geographic areas / frequency bands are restricted due to Radio Astronomy use or DOD and other Government top-secret installations. Even outside the absolute exclusion zone, there are areas where 18 GHz can be cleared by DOD. Coordinators must file applications and wait for the FCC to contact NTIA and NTIA to contact IRAC to analyze these before FCC licenses are granted. If the application is rejected, the proposed microwave link could be subject to redesign with another frequency band.

SITE INFORMATION - Norcom

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	36	'	51.66 "N
122	°	11	'	30.74 "W
Elev:		120	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	36	'	51.5 "N
122	°	11	'	33.0 "W
Elev:		137	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 450 110th Avenue NE
City: Bellevue
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☒Existing ☐New
- Tower Type: ☐Guyed ☐Self Supporting ☐Monopole ☒Rooftop ☐Water tank ☐Other: _____

The site is an existing building rooftop that will have antennas mounted at 108 feet on the roof. The radio equipment will be installed in the existing equipment room in the building.

Antenna Mounting Considerations for each path:

- Path to Bellevue FS#9: The proposed main antenna will be installed at 108 ft on the roof of the building. It is important that the antenna be installed on the roof so that the path traverses between the nearfield residential building and the newly built Marriott hotel so the path can maintain line of site to Bellevue FS#9.
  - Centerline: 108 feet
  - Azimuth: 170.51°
  - Tilt Angle: +0.72°

Transmission Line Considerations for each path:

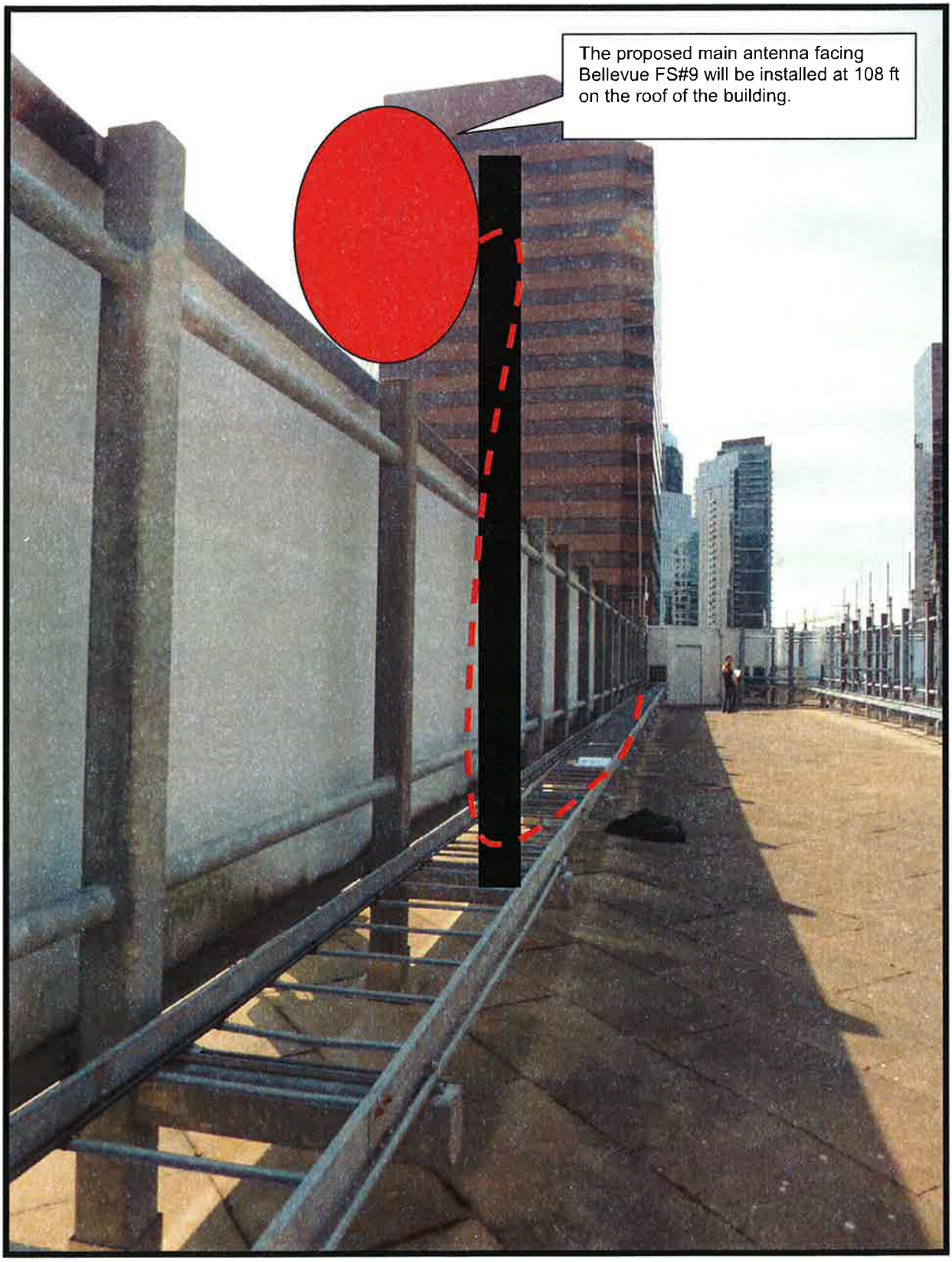
- Path to Bellevue FS#9: An estimated 235 feet of waveguide is required from the proposed antenna location on the roof to the radio in the equipment room.
- Cable Ladder: ☒Use Existing ☐Recommended ☐Not Required
- Cable Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☐Recommended ☒Not Required
- Entry Ports: ☒Use Existing ☐New Entry Port Required
- Ground Bus Bar: ☒Use Existing ☐New Bus Bar Required

Site Access Considerations:

The site is located on a building rooftop in a metropolitan area. A four wheel drive vehicle is not required. Contact PSERN with advance notice for site access.

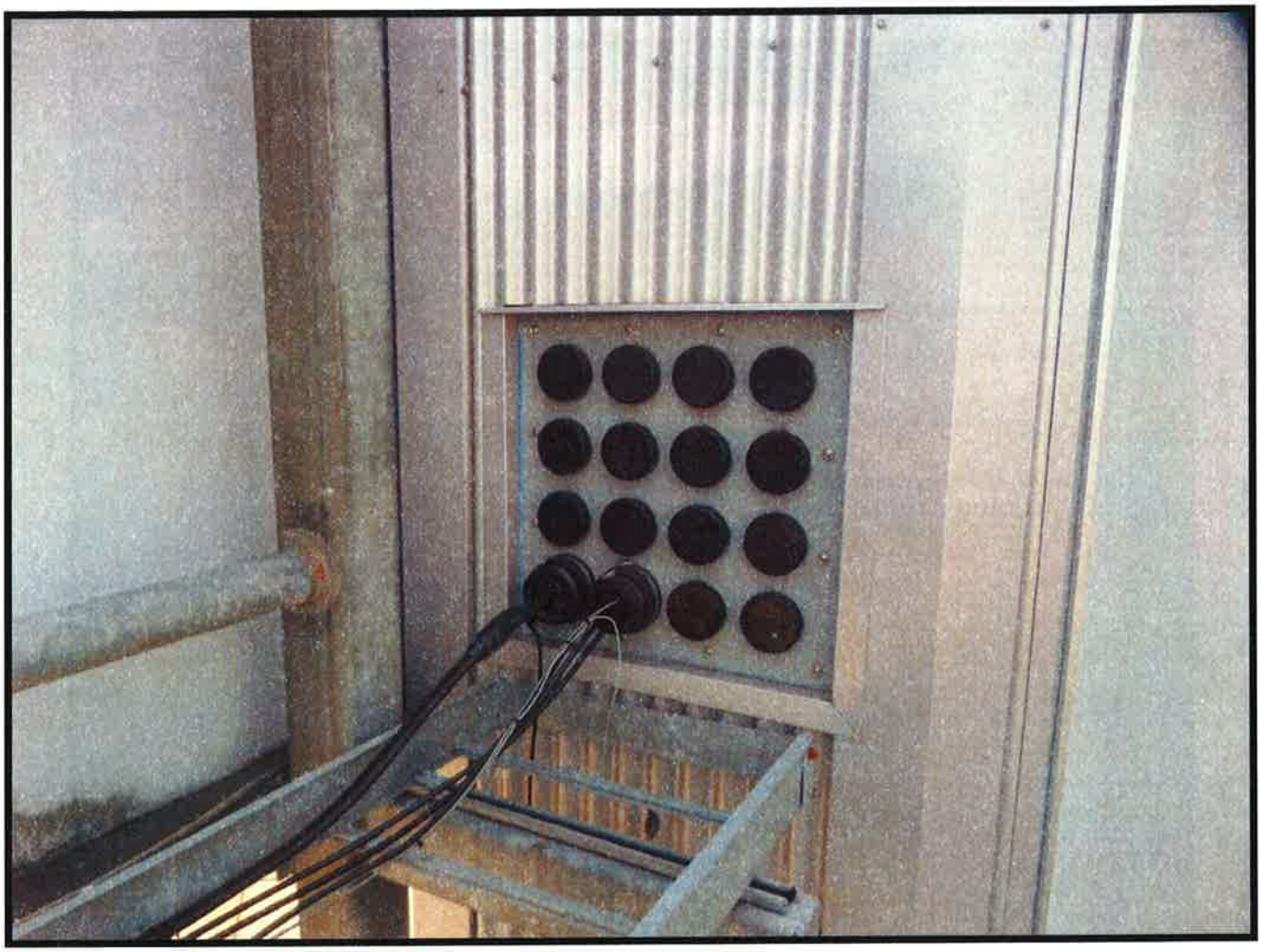
SITE PHOTOS

View of the Norcom Building

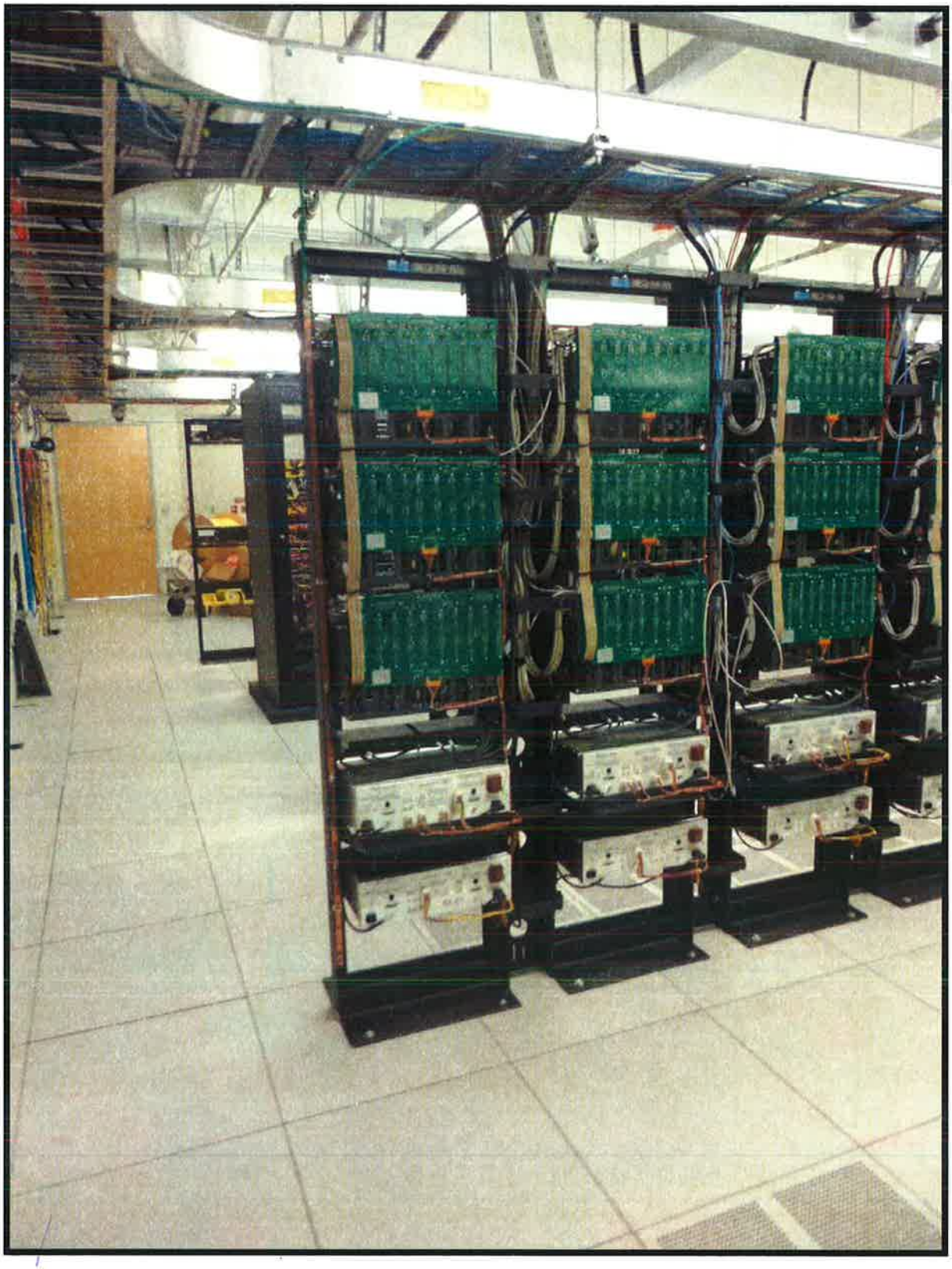


Norcom - View of the Proposed Antenna Location facing Bellevue FS#9

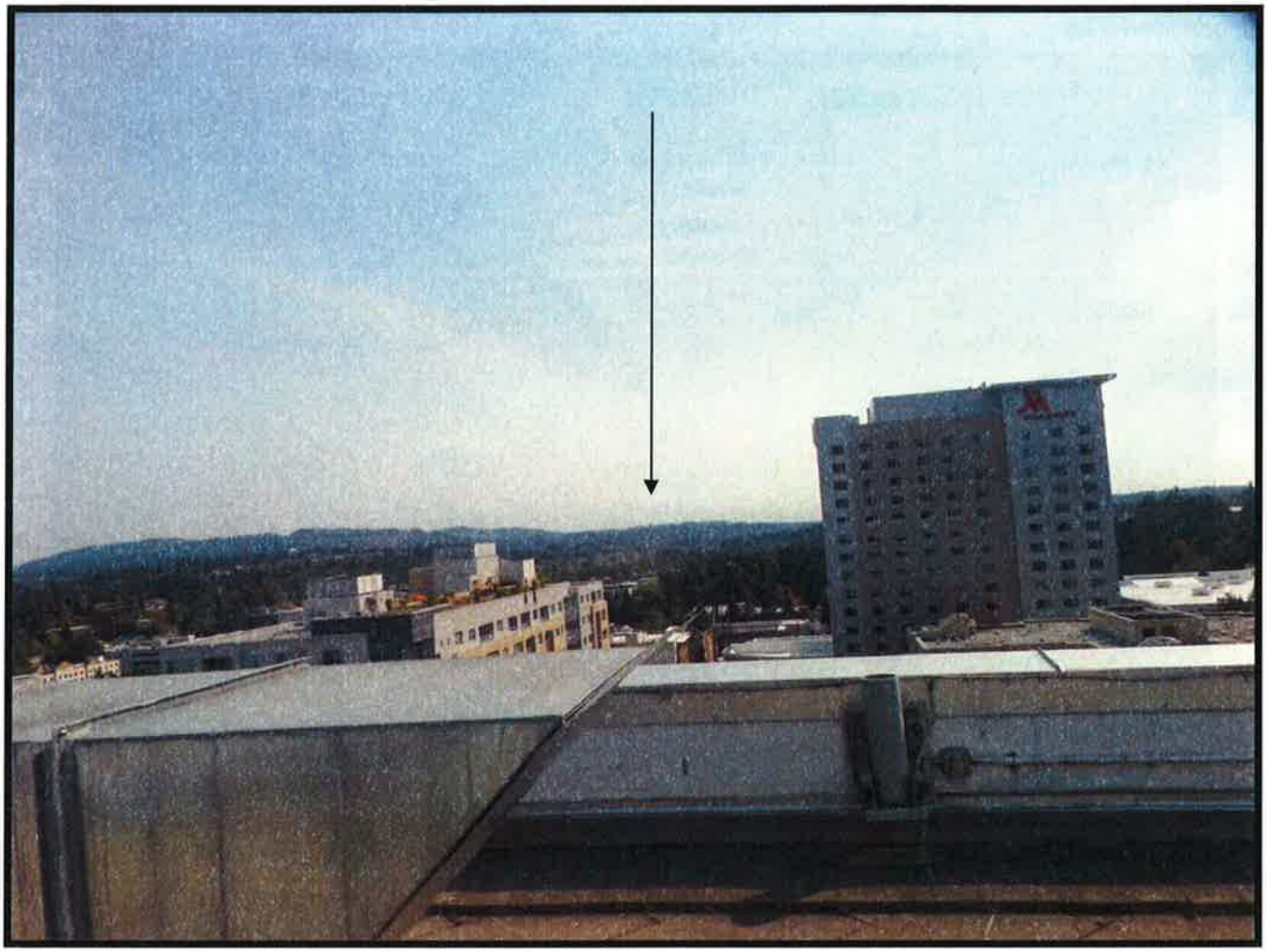
View of the Exterior Waveguide Run



View of the Exterior Waveguide Entry Port



Existing Racks are to be Removed and Replaced with New Radio Racks

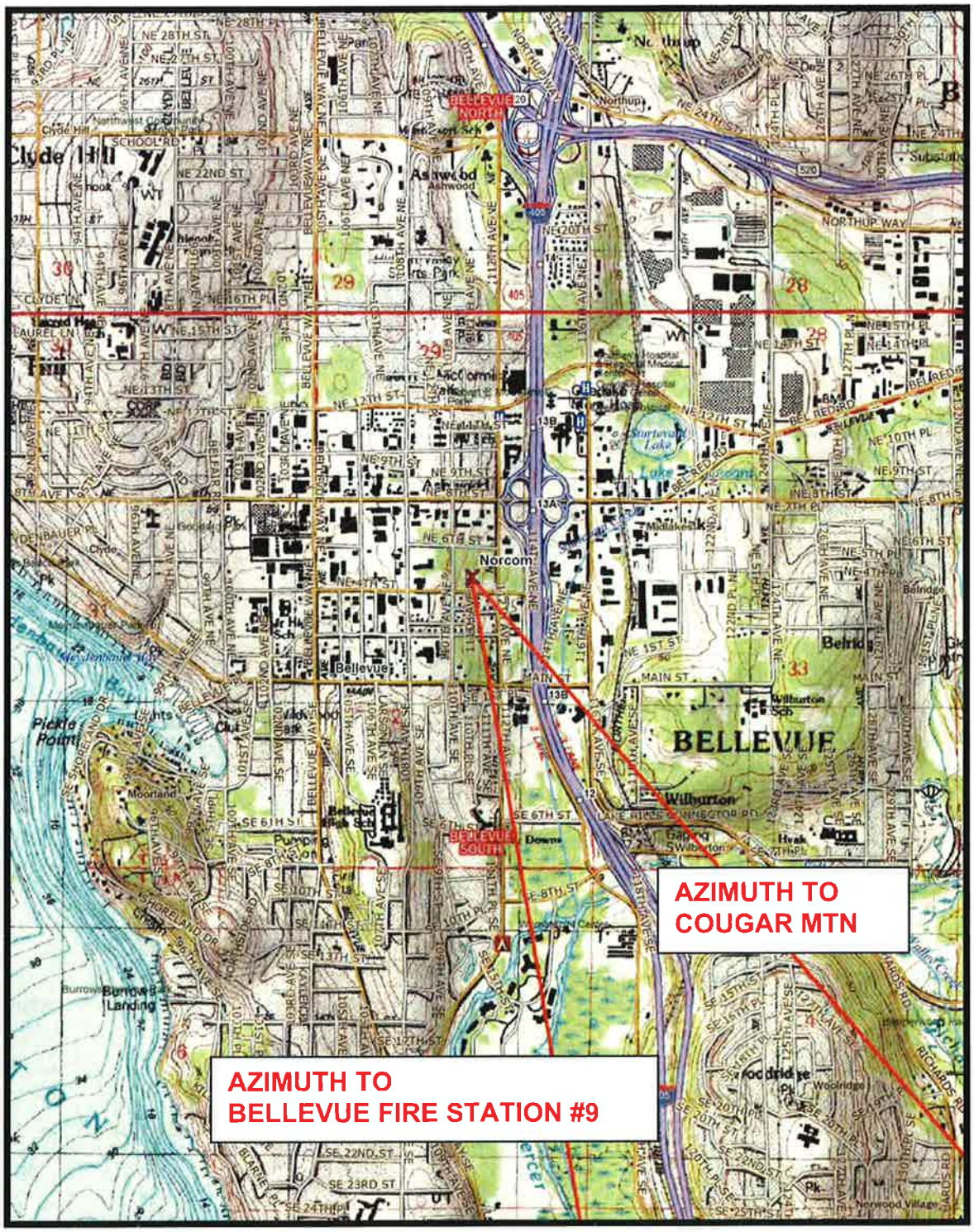


View of the Azimuth facing Bellevue FS#9

MAP EXTRACTS

Norcom

NAD 83						
47	°	36	'	51.5	"N	State: Washington
122	°	11	'	33.0	"W	County: King
Elev:		137	ft			Ref Map: Bellevue South



Norcom

NAD 83						
47	°	36	'	51.5	"N	State: Washington
122	°	11	'	33.0	"W	County: King
Elev:		137	ft			Ref Map: Bellevue South

SITE INFORMATION – Bellevue FS#9

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	32	'	28.83 "N
122	°	10	'	28.26 "W
Elev:		433	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	32	'	30.5 "N
122	°	10	'	28.6 "W
Elev:		436	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 12412 Newcastle Way
City: Newcastle
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☐Existing ☒New
- Tower Type: ☐Guyed ☐Self Supporting ☒Monopole ☐Rooftop ☐Water tank ☐Other: _____

The tower is a proposed monopole, however a minimum centerline of 160 feet is required to meet the design clearance criteria of this path due to trees along the paths.

Antenna Mounting Considerations for each path:

- Path to Norcom: The proposed main antenna will be installed at 160 ft on the north face of the monopole tower.
  - Centerline: 160 feet
  - Azimuth: 350.53°
  - Tilt Angle: -0.78°

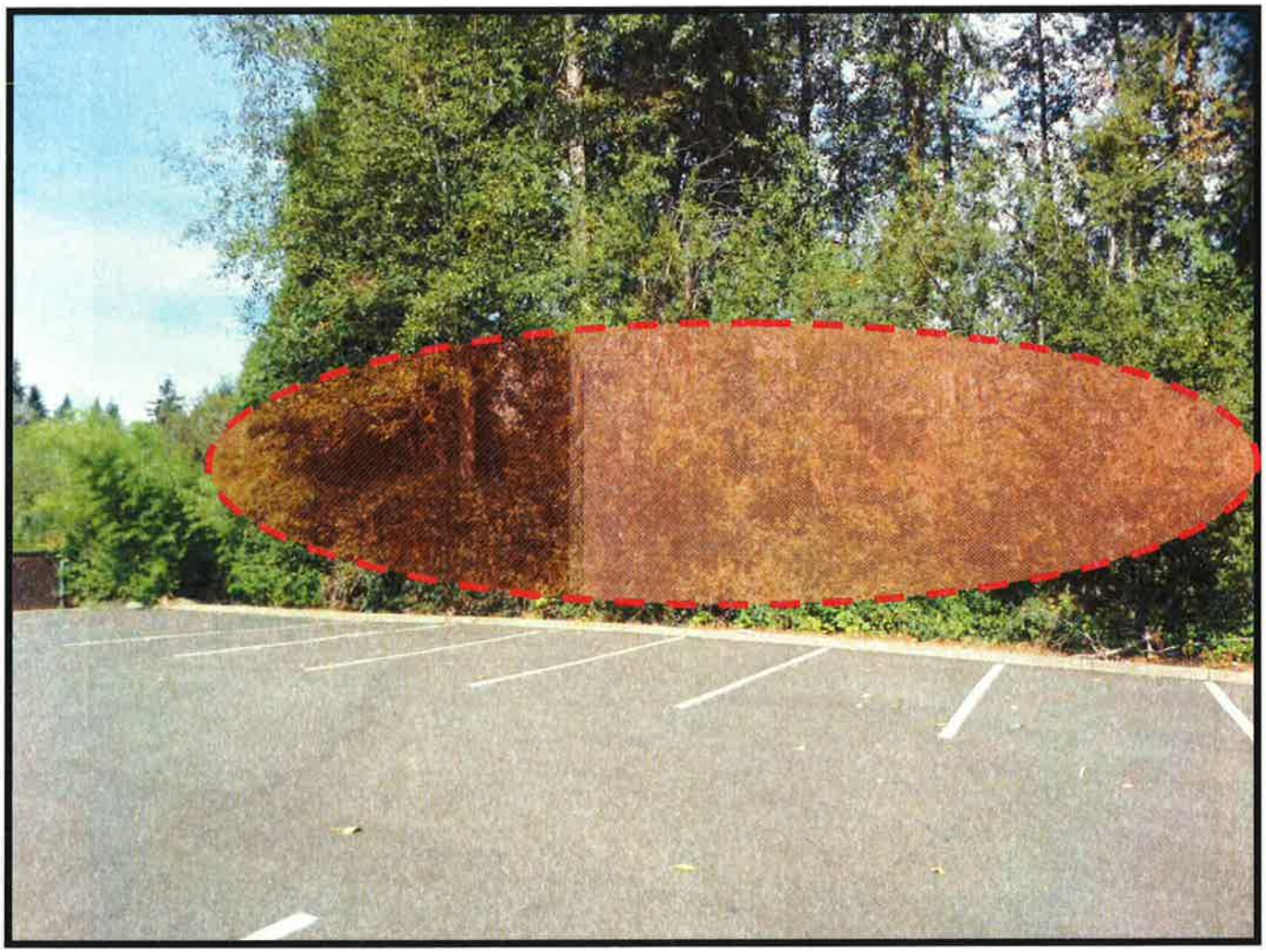
Transmission Line Considerations for each path:

- Path to Norcom: An estimated 220 feet of cable is required from the proposed antenna height to the radio in the equipment room.
- Cable Ladder: ☐Use Existing ☒Recommended ☐Not Required
- Cable Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Entry Ports: ☐Use Existing ☒New Entry Port Required
- Ground Bus Bar: ☐Use Existing ☒New Bus Bar Required

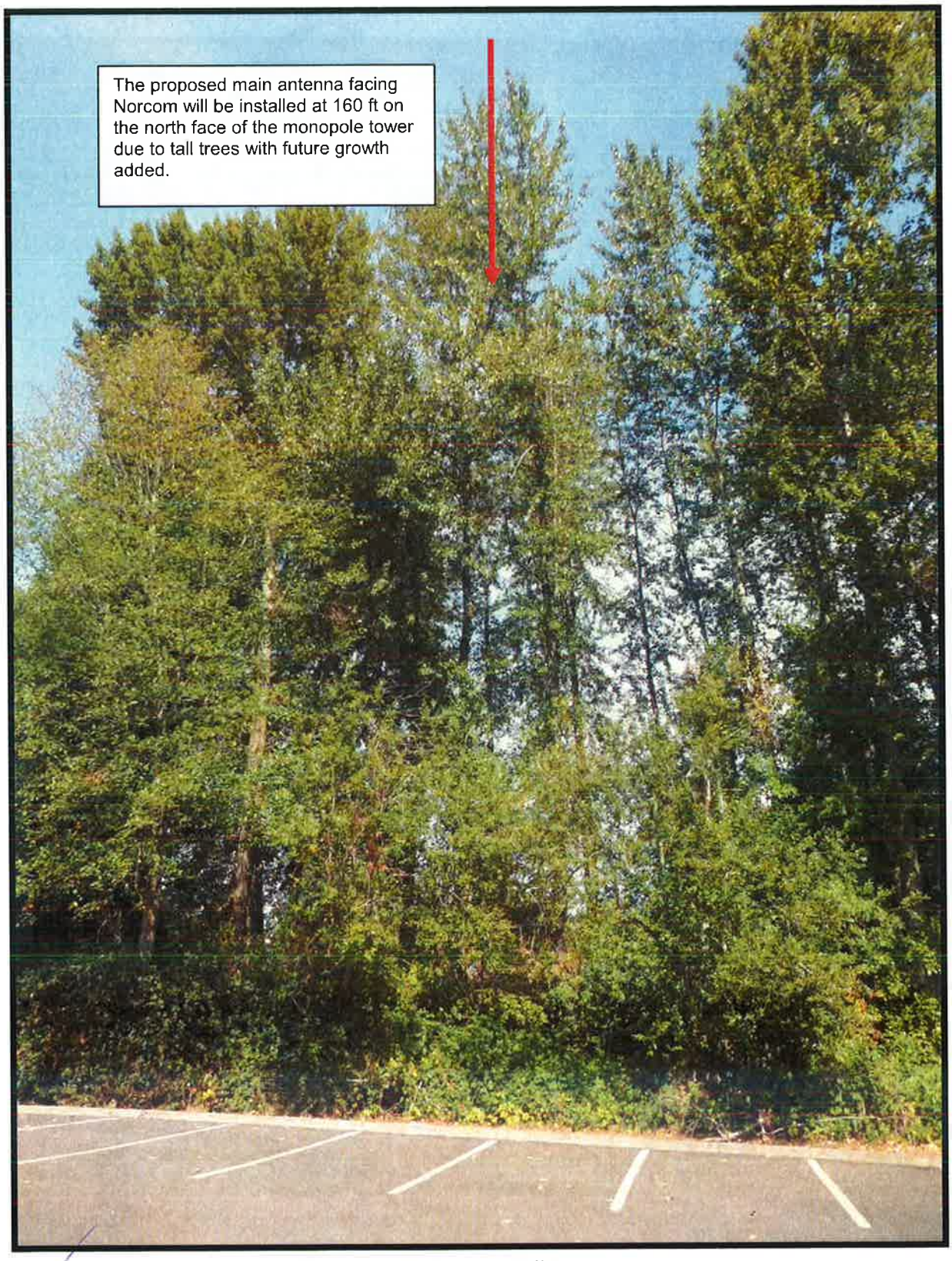
Site Access Considerations:

The site is located off of a paved parking lot. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

SITE PHOTOS



View of the Area to be Cleared to Make Room for Tower Compound – Behind Bellevue Fire Station #9 Building

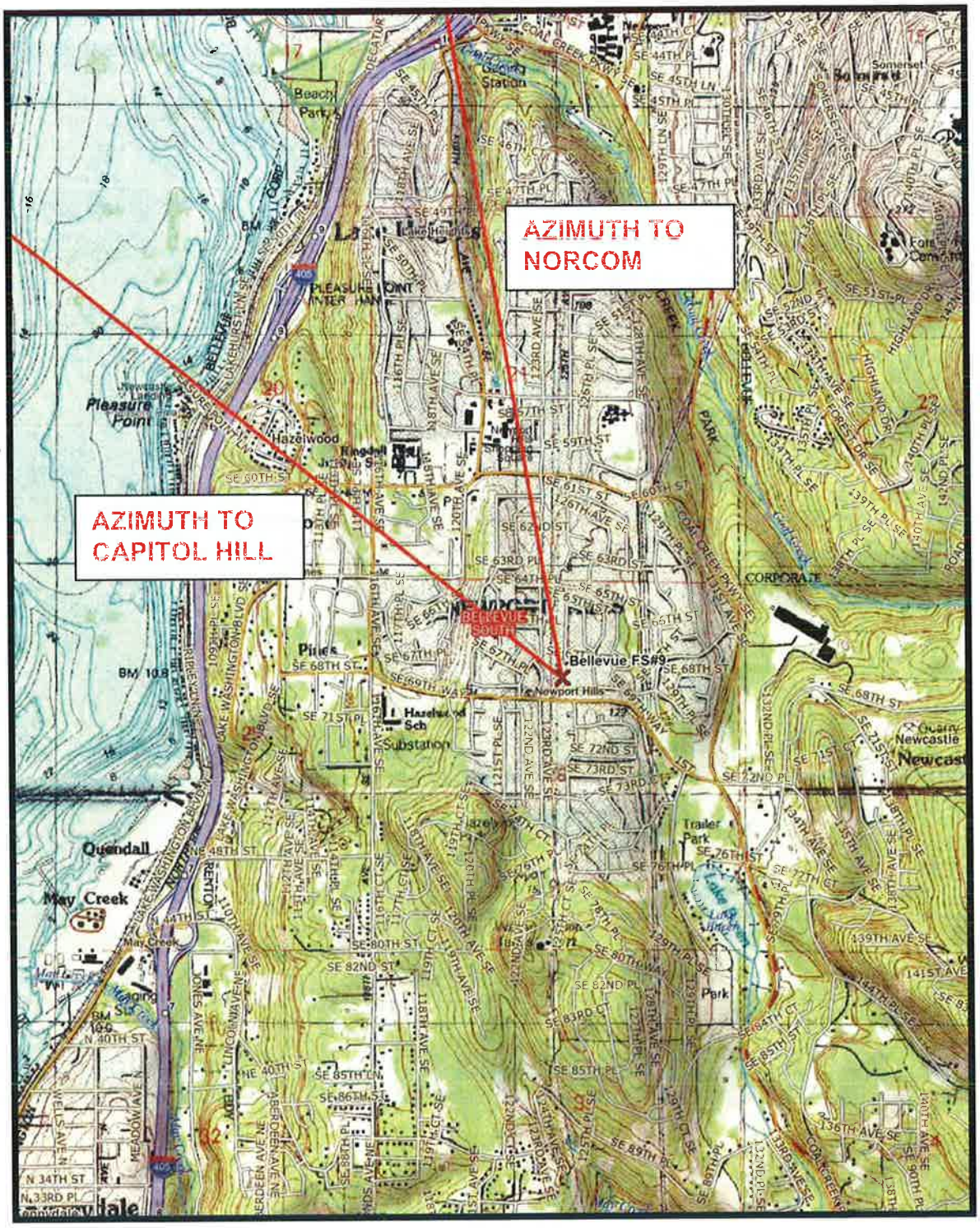


Bellevue FS#9
View of the Azimuth to Norcom

MAP EXTRACTS

Bellevue FS#9

NAD 83						
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South



Bellevue FS#9

NAD 83						
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South

PATH INFORMATION

PATH DESCRIPTIONS

Norcom to Bellevue FS#9

Path Length: 5.08 Miles
Frequency Band: 11 GHz

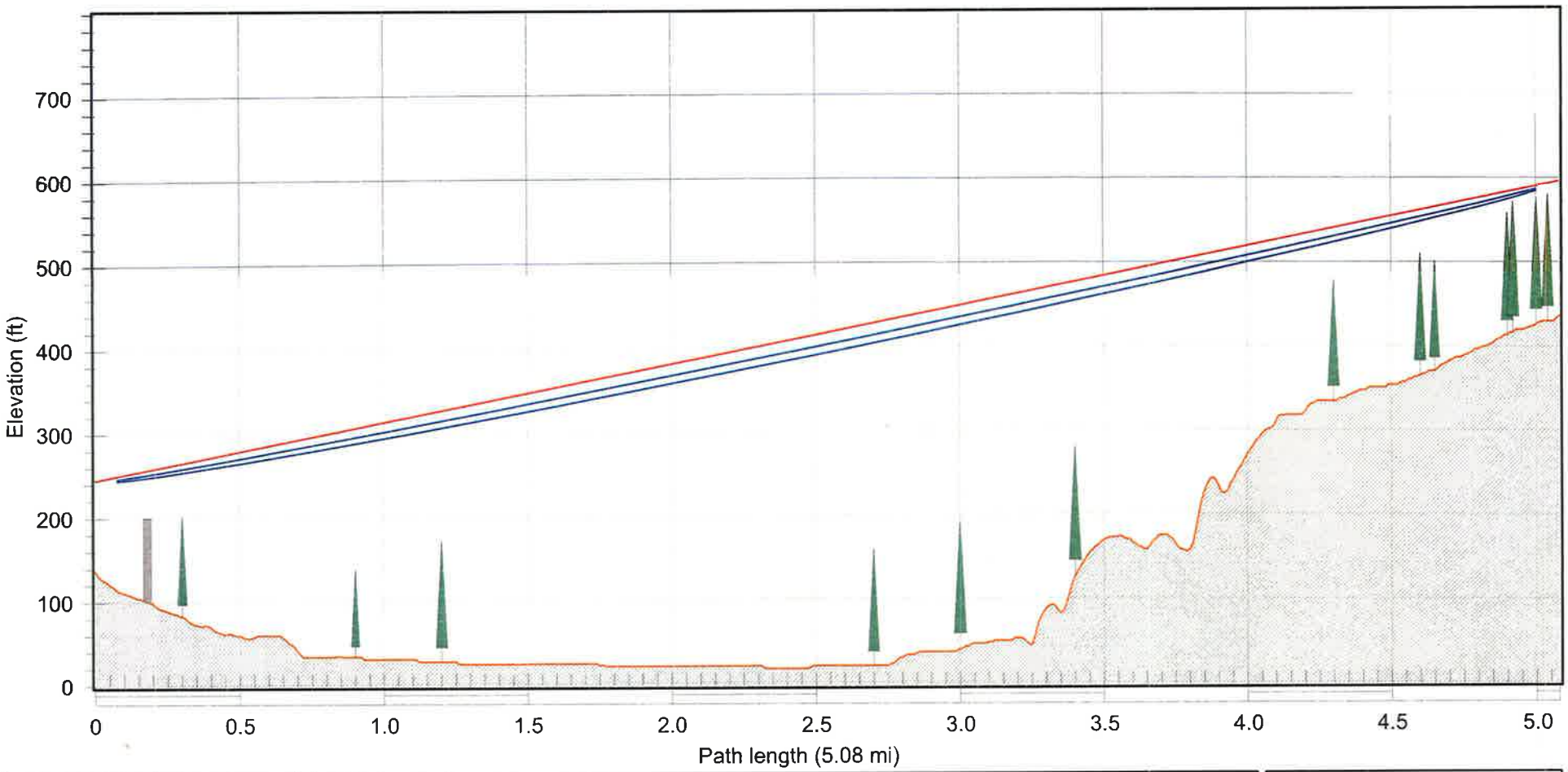
General Path Description:
The Norcom site is an existing building rooftop and the Bellevue FS#9 site is a proposed site. The critical points along the path are the tall nearfield trees close to Bellevue FS#9. It is important that the antenna at Norcom be installed on the roof so that the path traverses between the nearfield residential building and the newly built Marriott hotel so the path can maintain line of site to Bellevue FS#9. The path meets the design clearance criteria.

Path Climate considerations:
The path is located in an area that is considered "average" for radio wave propagation. The area is considered to have an oceanic climate. Typically winters are cool and wet with summers being warm and mostly dry. Precipitation averages around 37 inches per year with the largest amount of rainfall from November to February. Snowfall is typical but heavy snows are rare except at higher elevations of the mountains and their surrounding areas.

	Norcom	Bellevue FS#9
Latitude	47 36 51.50 N	47 32 30.50 N
Longitude	122 11 33.00 W	122 10 28.60 W
True azimuth (°)	170.51	350.53
Vertical angle (°)	0.72	-0.78
Elevation (ft)	137.00	436.00
Antenna model	HP4-107 (TR)	HP4-107 (TR)
Antenna file name	3172	3172
Antenna gain (dBi)	40.40	40.40
Antenna height (ft)	108.00	160.00
TX line model	EW90	EW90
TX line unit loss (dB/100 ft)	3.06	3.06
TX line length (ft)	235.00	220.00
TX line loss (dB)	7.20	6.74
Connector loss (dB)	0.39	0.39
Circulator branching loss (dB)	0.40	0.40
Frequency (MHz)	11200.00	
Polarization	Horizontal	
Path length (mi)	5.08	
Free space loss (dB)	131.70	
Atmospheric absorption loss (dB)	0.13	
Net path loss (dB)	66.55	66.55
Configuration	NP	NP
Radio model	I600V3H11_40M 64Q 156Mb	I600V3H11_40M 64Q 156Mb
Radio file name	i3h11_40m_100t	i3h11_40m_100t
TX power (watts)	0.63	0.63
TX power (dBm)	28.00	28.00
Emission designator	40M0D7W	40M0D7W
EIRP (dBm)	60.41	60.87
RX threshold criteria	1E-6 BER	1E-6 BER
RX threshold level (dBm)	-73.25	-73.25
Receive signal (dBm)	-38.55	-38.55
Thermal fade margin (dB)	34.70	34.70
Dispersive fade margin (dB)	51.70	51.70
Dispersive fade occurrence factor	1.00	

	Norcom	Bellevue FS#9
Effective fade margin (dB)	34.62	34.62
Climatic factor	1.00	
Terrain roughness (ft)	133.04	
C factor	0.28	
Average annual temperature (°F)	43.72	
Fade occurrence factor (Po)	1.028E-003	
Worst month multipath availability (%)	99.99996	99.99996
Worst month multipath unavailability (%)	0.00004	0.00004
Worst month multipath unavailability (sec)	0.93	0.93
Annual multipath availability (%)	99.99999	99.99999
Annual multipath unavailability (sec)	2.45	2.45
Annual 2 way multipath availability (%)	99.99998	
Annual 2 way multipath unavailability (sec)	4.89	
Polarization	Horizontal	
Rain region	C-96 Temp. Maritime	
Rain rate (mm/hr)	140.22	
Flat fade margin - rain (dB)	34.70	
Rain attenuation (dB)	34.71	
Annual rain availability (%)	99.99998	
Annual rain unavailability (min)	0.12	
Annual rain + multipath availability (%)	99.99996	
Annual rain + multipath unavailability (min)	0.21	

Multipath fading method - Vigants - Barnett
Rain fading method - Crane



Norcom	
Latitude	47 36 51.50 N
Longitude	122 11 33.00 W
Azimuth	170.51°
Elevation	137 ft ASL
Antenna CL	108.0 ft AGL

Frequency (MHz) = 11200.0
K = 1.33
%F1 = 60.00, 100.00

Bellevue FS#9	
Latitude	47 32 30.50 N
Longitude	122 10 28.60 W
Azimuth	350.53°
Elevation	436 ft ASL
Antenna CL	160.0 ft AGL

ATTACHMENT F
PROPERTY VALUATION STUDY

Integra Realty Resources
Seattle

Market Study

Bellevue Station 9
Monopole Telecommunications Tower
12412 SE 69th Way
Bellevue, King County, Washington 98006

Prepared For:
Odelia Pacific Corporation

Effective Date of the Appraisal:
June 17, 2016

Report Format:
Appraisal Report – Standard Format

IRR - Seattle
File Number: 2016-0215

Bellevue Station 9
12412 SE 69th Way
Bellevue, Washington

Integra Realty Resources
Seattle

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Suite 310
Seattle, WA 98101

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August 2, 2016

Sarah Telschow
Odelia Pacific Corporation
5506 6th Avenue South
Seattle, WA 98108

SUBJECT: Market Study
Bellevue Station 9
12412 SE 69th Way
Bellevue, King County, Washington 98006
IRR - Seattle File No. 2016-0215

Dear Ms. Telschow:

Integra Realty Resources – Seattle is pleased to submit the accompanying market study of the referenced property. The client for the assignment is Odelia Pacific Corporation. The intended user for the assignment is Odelia Pacific Corporation and no others. The intended use is to assist the intended user in evaluating the market value impacts of monopole telecommunications towers on residential properties.

The market study is intended to conform with the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, and applicable state appraisal regulations.

To report the assignment results, we use the Appraisal Report option of Standards Rule 2-2(a) of the 2016-2017 edition of USPAP. As USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal, we adhere to the Integra Realty Resources internal standards for an Appraisal Report – Standard Format. This type of report has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. It meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station at 12412 SE 69th Way.

Market Study Conclusion

Based on the preceding valuation analysis and subject to the definitions, assumptions, and limiting conditions expressed in the report, it is our opinion that there is no discernable negative impact on single-family home values resulting from the presence of the subject telecommunication tower.

This market study is not based on any extraordinary assumptions or hypothetical conditions that may impact the assignment results.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

INTEGRA REALTY RESOURCES - SEATTLE

Allen Safer, MAI, MRICS
Certified General Real Estate Appraiser
Washington Certificate # 1100662
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Addenda

A. Appraiser Qualifications
B. Comparison of Report Formats
C. Property Information

General Information

Identification of Subject

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station located at 12412 SE 69th Way.

Current Ownership and Sales History

The owner of the proposed telecommunications tower will be King County.

The owner of the underlying land is the Bellevue Fire Department. To the best of our knowledge, no sale or transfer of ownership of the underlying land has occurred within the past three years and as of the effective date of this market study, the underlying land is not subject to an agreement of sale or option to buy, nor is it listed for sale.

Purpose of the Market Study

The purpose of the market study is to determine the impact, if any, on residential property values as a result of the presence of the subject telecommunications tower.

Effective Date and Report Date

The effective date of the market study is June 17, 2016 and the market study is valid only as of the stated effective date. The date of the report is August 2, 2016.

Definition of Market Value

Market value is defined as:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- Buyer and seller are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their own best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."

(Source: Code of Federal Regulations, Title 12, Chapter I, Part 34.42[g]; also Interagency Appraisal and Evaluation Guidelines, Federal Register, 75 FR 77449, December 10, 2010, page 77472)

Intended Use and User

The intended use of the market study is to assist the intended user in evaluating the market value impacts of monopole telecommunications towers on residential properties. The client, as well as the intended user, is Odelia Pacific Corporation.

No party or parties other than aforementioned intended users may use or rely on the information, opinions, and conclusions contained in this report.

Applicable Requirements

This appraisal is intended to conform to the requirements of the following:

- Uniform Standards of Professional Appraisal Practice (USPAP);
- Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;
- Applicable state appraisal regulations.

Report Format

This report is prepared under the Appraisal Report option of Standards Rule 2-2(a) of the 2016-2017 edition of USPAP. As USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal, we adhere to the Integra Realty Resources internal standards for an Appraisal Report – Standard Format. This type of report has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. It meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP. For additional information, please refer to Addendum B – Comparison of Report Formats.

Prior Services

We have not performed any services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

Scope of Work

To determine the appropriate scope of work for the assignment, we considered the intended use of the market rent study, the needs of the user, the complexity of the property, and other pertinent factors. Our concluded scope of work is described below.

Data Collection

Three types of data are normally gathered while completing a market study: general, specific, and competitive supply and demand.

General Data

General data concerns the social, economic, governmental, and environmental forces that impact property values. General data presented in this appraisal is found in the Economic Analysis and the Surrounding Area sections. We have gathered the market study data from a variety of sources and publications. The sources are noted in the analyses. General data concerning the neighborhood is also based upon observations made during our inspection of the neighborhood.

Specific Data

Data relating to the property being appraised and to comparable properties is referred to as specific data. We have relied upon documents regarding the subject improvements provided by the client. Additional data pertaining to the subject has been gathered from zoning maps, tax records, the Federal Communications Commission, and other resources maintained in our library.

Data pertaining to residential sales in the immediate area has been gathered from Northwest Multiple Listing Service (NWMLS). Confirmation of individual sales is beyond the scope of this assignment and parties involved in these transactions were not contacted.

Competitive Supply and Demand Data

A complete supply and demand analysis is not part of the scope of work and is not included as part of this report.

Inspection

Allen Safer, MAI, MRICS and Robert A. Hartner conducted an on-site inspection of the subject on June 17, 2016.

Economic Analysis

Area Analysis

The subject property is located in Bellevue, which is a part of the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA).

Seattle-Tacoma-Bellevue MSA Analysis

The Seattle-Tacoma-Bellevue Metropolitan Statistical Area (hereafter called the Seattle MSA) lies in the northwest corner of the continental United States on Puget Sound, a saltwater arm of the Pacific Ocean 110 miles to the west. Situated in western Washington, the Seattle MSA is the 15th most populous metropolitan area in the nation and is the largest concentration of population north of San Francisco and west of Chicago. The Seattle MSA, as defined by the U.S. Office of Management and Budget, comprises King, Pierce and Snohomish Counties.

Seattle is the economic and cultural capital of the northwestern United States. With a number of major corporations headquartered in or near the city, Seattle is also the leading financial center of the Pacific Northwest. Both Seattle and Tacoma possess modern ports on excellent deep-water harbors and as a result, the Seattle MSA has good transportation connections to the outside world. The growth of the Pacific Northwest helped propel Seattle to its current stature and the economic expansion of the Pacific Rim is expected to sustain the Seattle MSA's growth well into the future.

Population

The Seattle MSA has an estimated 2016 population of 3,737,408, which represents an average annual 1.4% increase over the 2010 census of 3,439,809. The Seattle MSA added an average of 49,600 residents per year over the 2010-2016 period, and its annual growth rate exceeded the State of Washington rate of 1.1%.

Population Trends

	Population			Compound Ann. % Chng	
	2010 Census	2016 Est.	2021 Est.	2010 - 2016	2016 - 2021
King County	1,931,249	2,117,076	2,268,280	1.5%	1.4%
Pierce County	795,225	846,531	894,206	1.0%	1.1%
Snohomish County	713,335	773,801	825,060	1.4%	1.3%
Seattle MSA	3,439,809	3,737,408	3,987,546	1.4%	1.3%
Washington State	6,724,540	7,185,383	7,601,010	1.1%	1.1%

Source: The Nielsen Company

Looking forward, the Seattle MSA's population is projected to increase at a 1.3% annual rate from 2016-2021, equivalent to the addition of an average of 50,028 residents per year. The Seattle MSA's growth rate is expected to exceed that of Washington, which is projected to be 1.1%.

Employment

The Puget Sound region is the economic heartland of Washington State and the Pacific Northwest. Seattle dominates this region, which contains two-thirds of the state's total employment. Historically, the aerospace, forest products, and shipping industries, along with the military, have formed the economic base of the Puget Sound region, and these activities still play an important role in the regional economy. However, emerging industries such software, retail, biotechnology, tourism, internet services, and telecommunications have become increasingly influential on the region's economy.

Total employment in the Seattle MSA is currently estimated at 1,922,200 jobs. Between year-end 2005 and the present, employment rose by 227,000 jobs, equivalent to a 13.4% increase over the entire period. There were gains in employment in eight out of the past ten years despite the national economic downturn and slow recovery. The Seattle MSA's rate of employment growth over the last decade surpassed that of Washington, which experienced an increase in employment of 11.4% or 327,500 jobs over this period.

Employment Trends

	Total Employment (Year End)				Unemployment Rate (Ann. Avg.)	
Year	Seattle MSA	% Change	Washington	% Change	Seattle MSA	Washington
2005	1,695,200		2,870,700		4.8%	5.6%
2006	1,740,000	2.6%	2,937,800	2.3%	4.2%	5.0%
2007	1,790,800	2.9%	3,009,800	2.5%	3.7%	4.7%
2008	1,759,600	-1.7%	2,960,300	-1.6%	4.5%	5.4%
2009	1,669,600	-5.1%	2,832,400	-4.3%	8.7%	9.1%
2010	1,687,500	1.1%	2,859,100	0.9%	9.7%	10.0%
2011	1,718,900	1.9%	2,894,900	1.3%	8.7%	9.3%
2012	1,764,000	2.6%	2,955,200	2.1%	7.2%	8.1%
2013	1,816,800	3.0%	3,028,400	2.5%	5.8%	7.0%
2014	1,872,000	3.0%	3,117,900	3.0%	5.3%	6.1%
2015	1,922,200	2.7%	3,198,200	2.6%	4.6%	5.7%
Overall Change 2005-2015	227,000	13.4%	327,500	11.4%		
Avg Unemp. Rate 2005-2015					6.1%	6.9%
Unemployment Rate - April 2016					5.1%	5.6%

Source: Bureau of Labor Statistics and Economy.com. Employment figures are from the Current Employment Survey (CES). Unemployment rates are from the Current Population Survey (CPS). The figures are not seasonally adjusted.

Major employers in the Seattle MSA are shown in the following table.

Major Employers - Seattle MSA

	Name	Number of Employees
1	Boeing	77,497
2	Joint Base Lewis-McChord	56,000
3	Microsoft Corporation	43,618
4	Navy Region Northwest	43,000
5	University of Washington	30,200
6	Amazon.com	24,700
7	Providence Health & Services	19,456
8	Wal-Mart Stores	19,350
9	Fred Meyer Stores	15,450
10	King County Government	13,400

Source: seattle.about.com; boeing.com; microsoft.com

Gross Domestic Product

The Seattle MSA is the eleventh largest metropolitan area economy in the nation based on Gross Domestic Product (GDP).

Economic growth, as measured by annual changes in GDP, has been somewhat higher in the Seattle MSA than Washington overall during the past eight years. The Seattle MSA has grown at a 1.9% average annual rate while Washington has grown at a 1.2% rate. As the national economy improves, the Seattle MSA continues to perform better than Washington. GDP for the Seattle MSA rose by 3.4% in 2014 while Washington's GDP rose by 3.1%.

The Seattle MSA has a per capita GDP of $75,874, which is 39% greater than Washington's GDP of $54,710. This means that Seattle MSA industries and employers are adding relatively more value to the economy than their counterparts in Washington.

Gross Domestic Product				
Year	($ Mil) Seattle MSA	% Change	($ Mil) Washington	% Change
2007	244,186		354,959	
2008	248,287	1.7%	359,219	1.2%
2009	240,144	-3.3%	350,880	-2.3%
2010	247,187	2.9%	357,826	2.0%
2011	252,854	2.3%	360,618	0.8%
2012	262,604	3.9%	370,454	2.7%
2013	269,434	2.6%	374,731	1.2%
2014	278,570	3.4%	386,335	3.1%
Compound % Chg (2007-2014)		1.9%		1.2%
GDP Per Capita 2014	$75,874		$54,710	

Source: Bureau of Economic Analysis and Economy.com; data released September 2015. The release of state and local GDP data has a longer lag time than national data. The data represents inflation-adjusted "real" GDP stated in 2009 dollars.

Income, Education and Age

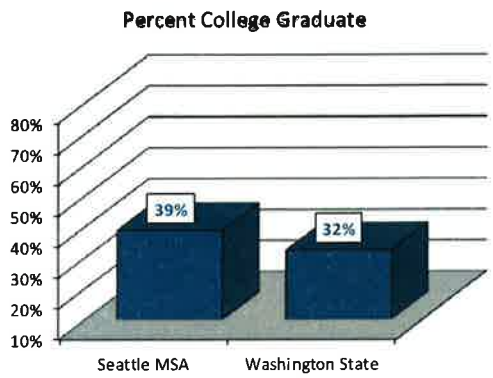
The Seattle MSA has a higher level of household income than Washington. Median household income for the Seattle MSA is $71,126, which is 14.2% greater than the corresponding figure for Washington.

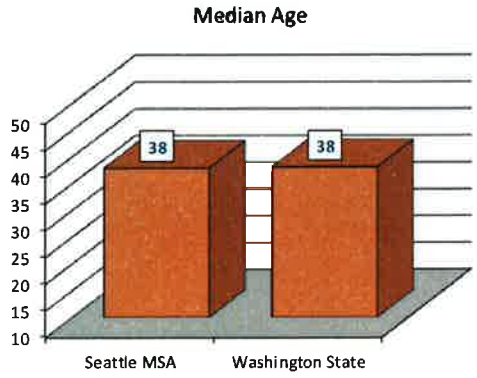
Median Household Income - 2016	
	Median
Seattle MSA	$71,126
Washington State	$62,284
Comparison of Seattle MSA to Washington State	+ 14.2%

Source: The Nielsen Company

Residents of the Seattle MSA have a higher level of educational attainment than those of Washington. An estimated 39% of Seattle MSA residents are college graduates with four-year degrees, versus 32% of Washington residents. People in the Seattle MSA are similar in age to their Washington counterparts. The median age of both the Seattle MSA and Washington is 38 years.

Education & Age - 2016





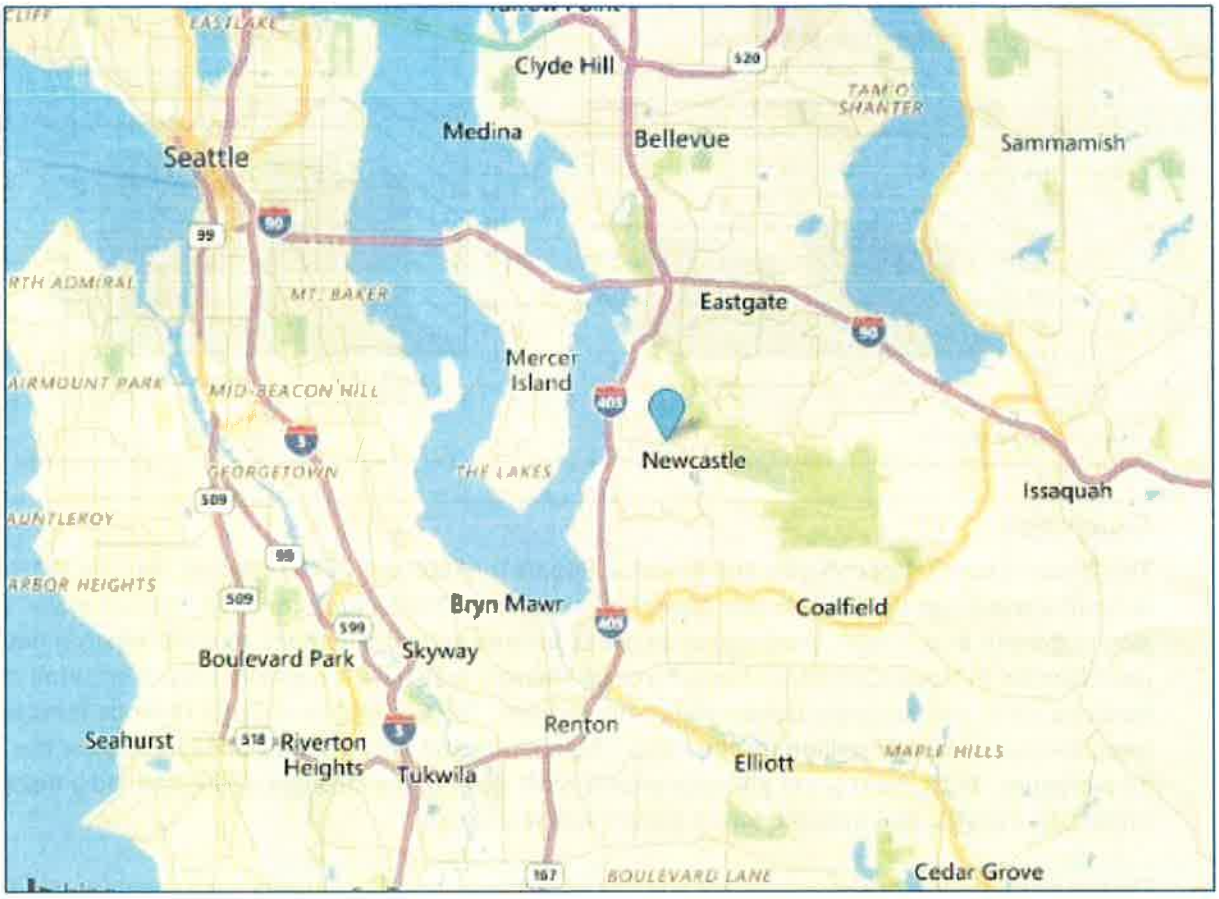
Source: The Nielsen Company

Conclusion

The Washington State Economic and Revenue Report for February 2016 reported that the Washington economy was expanding at a slower pace than expected. Overall the economic forecast expects slower growth in U.S. GDP, Washington personal income and employment, and Washington housing permits than in November 2015. These forecast changes may have a negative impact on retail and business sales and on construction-related tax receipts. The General Fund-State revenue forecast has been decreased by $67 million for the 2015-17 biennium and decreased by $442 million for the 2017-19 biennium. Both the U.S and global economy have slowed, the stronger dollar has had a negative impact on exports, and manufacturing activity has weakened.

On the positive side, hourly wages are starting to increase, housing permits have room for additional growth, and lower oil and gasoline prices are a positive for consumers. The Seattle MSA is expected to continue outperforming the U.S. economy in both employment and personal income growth.

Area Map


Clyde Hill
Medina
Bellevue
Sammamish
Seattle
Eastgate
Mercer Island
Newcastle
Issaquah
Bryn Mawr
Coalfield
Boulevard Park
Skyway
Renton
Seahurst
Riverton Heights
Tukwila
Elliott
Cedar Grove
MT. BAKER
MID-BEACON HILL
GEORGETOWN
THE LAKES
BOULEVARD LANE
MAPLE HILLS
520
90
99
405
509
518
167

Property Analysis

Underlying Land Description

Underlying Land Description	
Assessor's Parcel Number (APN)	195182-0080
Land Area	1.61 acres; 70,131 SF
Source of Land Area	King County Office of the Assessor
Primary Street Frontage	SE 69th Way
Shape	Irregular
Topography	Generally level and at street grade
Drainage	No problems reported or observed
Environmental Hazards	None reported or observed
Ground Stability	No problems reported or observed
Flood Area Panel Number	53033C0666F
Date	May 16, 1995
Zone	X
Description	Outside of 500-year floodplain
Insurance Required?	No
Zoning; Other Regulations	
Zoning Jurisdiction	King County
Zoning Designation	R-5
Description	Single-Family Residential
Legally Conforming?	Yes
Zoning Change Likely?	No
Permitted Uses	Encourages residential development of low- to moderate-density.
Other Land Use Regulations	None
Utilities	
Service	Provider
Water	City of Bellevue
Sewer	City of Bellevue
Electricity	Puget Sound Energy
Natural Gas	Puget Sound Energy
Local Phone	CenturyLink

Subject Improvements Description

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station at 12412 SE 69th Way.

The underlying parcel is improved with a municipal fire station and associated site improvements. There is already a significant amount of utility infrastructure in the area. A corridor of high-tension

overhead powerlines is already located just west of the proposed tower, and existing cellular dishes are mounted on a tower adjacent to the fire station building (see photos on the following page).

View of fire station on subject property facing NE.
(Photo Taken on June 17, 2016)

View of fire station on subject property facing SE.
(Photo Taken on June 17, 2016)

View of proposed location of new tower in rear of site.
(Photo Taken on June 17, 2016)

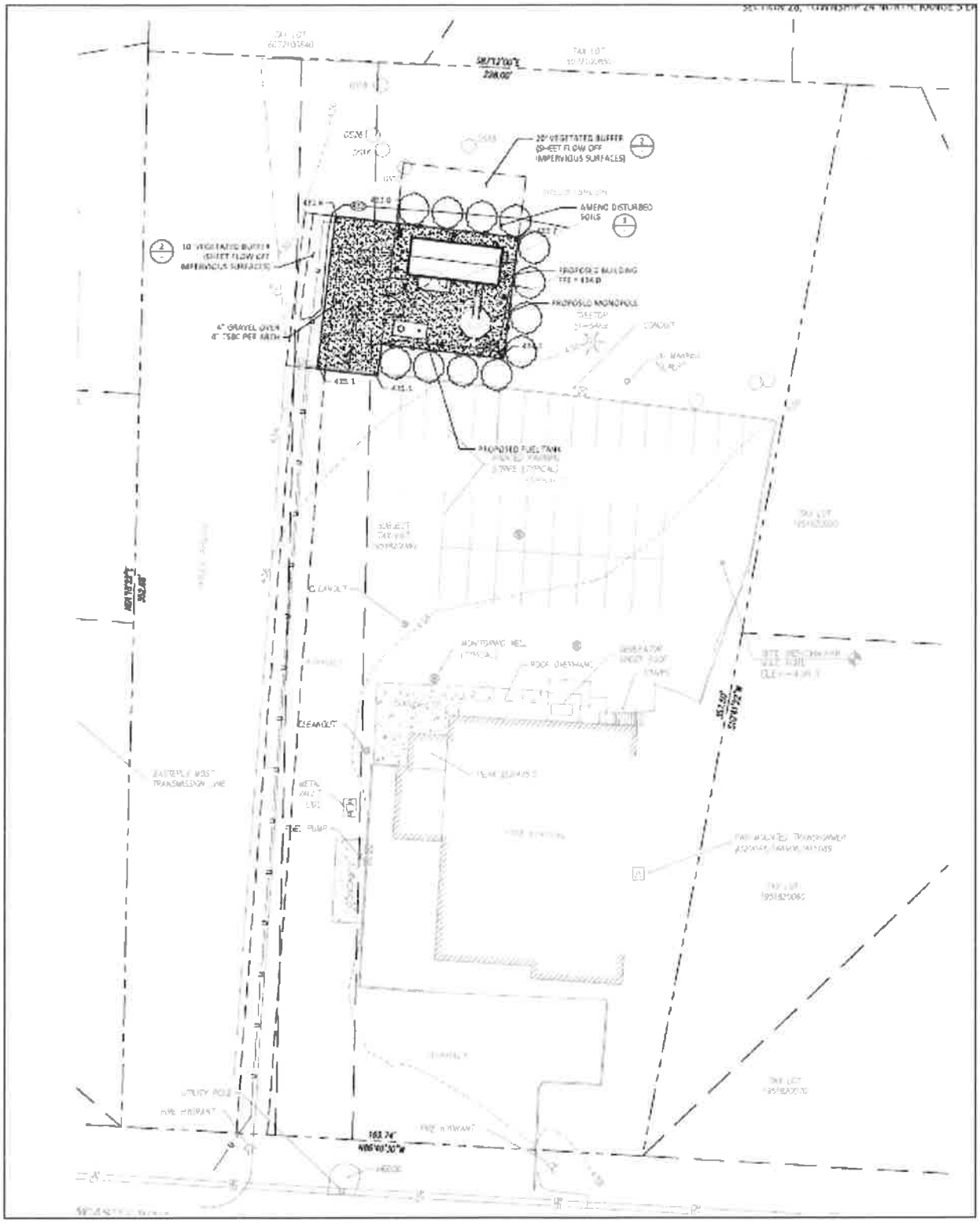
View of existing transmission tower adjacent to site.
(Photo Taken on June 17, 2016)

View of proposed location of tower from north.
(Photo Taken on June 17, 2016)

View of adjacent powerlines from north.
(Photo Taken on June 17, 2016)

Proposed Telecommunications Tower

The telecommunications tower will be constructed in the northwest corner of the parcel. The proposed location is mostly wooded and lies just north of the rear of the fire station's parking lot.


20' VEGETATED BUFFER (SHEET FLOW OFF IMPERVIOUS SURFACES)
AMEND DISTURBED SOILS
10' VEGETATED BUFFER (SHEET FLOW OFF IMPERVIOUS SURFACES)
PROPOSED BUILDING
PROPOSED MONOPOLE
4" GRAVEL OVER 6" CSBC PER ARCH
PROPOSED FUEL TANK
CONDUIT
CLEANOUT
UTILITY POLE
FIRE HYDRANT

Residential Market Study

Methodology

The purpose of the market study is to determine the impact, if any, on residential property values as a result of the presence of the proposed subject telecommunications tower.

In order to make this determination, we analyzed single-family home sales near four existing telecommunications towers in King County. Two of the towers studied are PSERN towers similar to the one proposed at the subject property. In order to determine whether properties immediately adjacent to the proposed tower will be impacted, we also studied two local cell towers. These towers were chosen since multiple properties, immediately adjacent to each, have transacted since the time they were constructed.

During our research, we exclude all non-arm's length transactions such as partial transfers, foreclosures, trustee sales and tax sales. We utilize a paired data analysis of individual home sales. Paired data analysis is defined by *The Dictionary of Real Estate Appraisal, 6th Edition* as:

> *A quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties. To apply this technique, sales or rental data on nearly identical properties, or adjusted data, is compared to isolate and estimate a single characteristic's effect on value or rent.*

PSERN Tower Analysis

In our analysis, we compare sales of single-family homes within 0.25-miles of two PSERN towers to otherwise similar homes within a 0.5-1.0 mile radius that fall outside the towers' spheres of influence. Our analysis does not extend to properties further than one mile from the towers since doing so would increase the chance price differences would result due to location. Sales of homes within the towers' spheres of influence without suitably similar pairings have been excluded from our analysis.

PSERN Northeast

PSERN Northeast is a Monopole Telecommunications Tower located at 8526 Roosevelt Way NE, Seattle, King County, WA. The tower is 170' in height, and underlying the equipment is situated in the northeast corner of Maple Leaf Reservoir Park, a roughly 25-acre parcel of land in an urban residential-type area.

The tower is located directly on Roosevelt Way NE, a mixed-use street featuring commercial and residential uses. The areas abutting Roosevelt Way NE are predominantly residential in nature and are characterized with small residential lots. We have compared sale prices of single-family homes within the tower's sphere of influence (within ¼ mile) to those located within 0.5 and 1.0 miles from the tower. We have considered every single-family sale that has occurred within 0.25 miles of the tower since the beginning of 2013. Excluded are non-arm's-length sales, bank-owned foreclosure sales (REO) and short-sales, and those sales for which we were not able to find a suitable paired-sale. Among other qualifications for consideration, we limit the paired-sale sets to properties featuring 150 square

feet of building area, or less, to each other. The per-unit prices of properties with greater differences in size run an increased risk of being skewed due building size differences.

Our paired data analysis illustrating the increase/decrease in price for homes located within the towers' sphere of influence is presented in the following table.

Paired Data Analysis

Address	Distance From	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Differenc
111 NE 92nd Street, Seattle	0.6 mile NW	1,120	0.14	1947	8/16/2013	$338,000	$302	
1021 NE 91st Street, Seattle	0.2 mile N	1,290	0.15	1942	12/9/2013	$355,000	$275	-8.8%
2228 NE 83rd Street, Seattle	0.7 mile E	1,040	0.16	1942	7/2/2014	$425,000	$409	
536 NE 86th Street, Seattle	0.2 mile W	930	0.15	1940	7/14/2014	$395,000	$425	3.9%
1723 NE 92nd Street, Seattle	0.50 mile NE	1,100	0.15	1925	6/1/2015	$414,900	$377	
849 NE 89th Street, Seattle	0.1 mile NW	1,000	0.15	1912	9/29/2014	$407,000	$407	7.9%
2318 NE 94th Street, Seattle	0.8 mile NE	1,460	0.16	1946	5/13/2013	$411,500	$282	
1019 NE 91st Street, Seattle	0.2 mile N	1,430	0.15	1942	7/30/2013	$417,500	$292	3.6%
2056 NE 98th Street, Seattle	0.9 mile NE	2,280	0.37	1922	9/3/2014	$452,000	$198	
8607 15th Avenue NE, Seattle	0.2 mile E	2,230	0.16	1926	4/17/2013	$470,000	$211	6.3%
8020 Corliss Ave N, Seattle	0.7 mile SW	1,800	0.13	1948	10/16/2013	$489,000	$272	
8924 8th Avenue NE, Seattle	0.2 mile NW	1,790	0.12	1939	7/11/2013	$484,555	$271	-0.4%
1717 N 82nd Street, Seattle	0.9 mile W	1,900	0.09	1941	12/8/2014	$482,000	$254	
8829 8th Avenue NE, Seattle	0.2 mile NW	2,050	0.12	1938	5/11/2015	$495,000	$241	-4.8%
8210 20th Avenue NE, Seattle	0.5 mile E	1,640	0.15	1942	5/21/2015	$510,000	$311	
822 NE 90th Street, Seattle	0.2 mile N	1,660	0.15	1945	12/1/2014	$525,000	$316	1.7%
8011 20th Avenue NE, Seattle	0.6 mile SE	2,091	0.07	1930	5/19/2014	$530,000	$253	
8612 8th Avenue NE, Seattle	0.1 mile W	2,100	0.11	1930	7/14/2014	$548,800	$261	3.1%
802 NE 103rd Street, Seattle	0.8 mile NE	2,230	0.12	2005	12/20/2013	$561,000	$252	
525 NE 83rd Street, Seattle	0.2 mile SW	2,080	0.07	1992	8/22/2013	$555,000	$267	6.1%
8223 2nd Avenue NE, Seattle	0.5 mile SW	1,660	0.07	1946	5/10/2016	$600,000	$361	
823 NE 89th Street, Seattle	0.2 mile NW	1,670	0.13	1953	5/13/2016	$585,000	$350	-3.1%
8625 Ravenna Avenue, NE, Seattle	0.7 mile E	1,850	0.12	1920	11/25/2015	$645,000	$349	
826 NE 84th Street, Seattle	0.1 mile SW	1,800	0.11	1925	7/15/2015	$627,500	$349	0.0%
8809 25th Place NE, Seattle	0.8 mile E	2,580	0.14	1960	8/6/2015	$652,000	$253	
8305 8th Avenue NE, Seattle	0.2 mile SW	2,708	0.14	1950	2/27/2014	$657,500	$243	-3.9%
8014 20th Avenue NE, Seattle	0.6 mile SE	2,160	0.10	1936	9/24/2015	$644,500	$298	
815 NE 82nd Street, Seattle	0.2 mile SW	2,270	0.10	1946	4/10/2015	$645,000	$284	-4.8%
8106 21st Avenue NE, Seattle	0.6 mile SE	2,350	0.08	1930	8/24/2015	$661,000	$281	
826 NE 81st Street, Seattle	0.2 mile SW	2,440	0.11	1927	6/12/2015	$678,000	$278	-1.2%

Minimum	-8.8%
Maximum	7.9%
Average	0.4%
Median	0.0%

There is no consistent pattern of negative value impact for the sales located within the subject's sphere of influence. The paired sales indicate a price difference ranging from -8.8% to 7.9% with an average price difference of 0.4% and a median of 0.0%. Seven pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining eight pairings do not indicate any decrease in value for one sale, and a price trend increase for the other seven sales located within the subject's sphere of influence.

PSERN Northeast

PSERN Northeast is a Monopole Telecommunications Tower located at 6900 36th Avenue SW, Seattle, King County, WA. The tower is 140' in height, and the tower and underlying equipment are situated on a 5.67-acre parcel of land in a suburban-type area.

The tower's immediate area is characterized by smaller urban residential lots. We have compared sale prices of single-family homes within the tower's sphere of influence (within 0.25 mile) to those located within 0.5 and 1.0 miles from the tower. We have considered every single-family sale that has occurred within 0.25 miles of the tower since the beginning of 2013. Excluded are non-arm's-length sales, REO and short-sales, and those sales for which we were not able to find a suitable paired-sale.

Our paired data analysis illustrating the increase/decrease in price for homes located within the towers' sphere of influence is presented in the following table.

Paired Data Analysis

Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Difference
4216 SW Raymond St., Seattle	0.7 mile NW	1,594	0.04	1926	10/10/2014	$390,000	$245	
7157 32nd Ave. SW, Seattle	0.2 mile SE	1,620	0.12	1925	8/18/2014	$392,000	$242	-1.1%
5980 26th Avenue SW, Seattle	0.8 mile NE	1,710	0.26	1922	9/2/2015	$410,000	$240	
7132 34th Avenue SW, Seattle	0.2 mile SE	1,790	0.12	1924	7/15/2015	$400,000	$223	-6.8%
3519 SW Elmgrove St., Seattle	.7 mile S	1,300	0.12	1951	6/23/2015	$410,000	$315	
7149 35th Avenue SW, Seattle	0.2 mile S	1,250	0.13	1948	8/17/2015	$413,000	$330	4.8%
5652 Fauntleroy Way SW, Seattle	0.7 mile NW	800	0.11	1914	9/9/2015	$415,000	$519	
7142 32nd Avenue SW, Seattle	0.2 mile SE	800	0.12	1927	7/20/2015	$426,000	$533	2.7%
8438 41st Avenue SW, Seattle	0.9 mile SW	1,550	0.10	1953	11/17/2014	$415,000	$268	
6534 36th Avenue SW, Seattle	0.2 mile N	1,650	0.14	1942	7/14/2014	$430,000	$261	-2.7%
6627 Fauntleroy Way SW, Seattle	0.6 mile NW	2,100	0.18	1940	3/11/2015	$425,000	$202	
7146 35th Avenue SW, Seattle	0.2 mile SE	2,040	0.11	1927	7/30/2015	$433,000	$212	4.9%
3920 Portland Street, Seattle	0.6 mile SW	1,800	0.12	1941	12/20/2013	$365,000	$203	
6926 37th Avenue SW, Seattle	0.0 mile SW	1,800	0.15	1942	2/28/2014	$355,000	$197	-2.7%
4016 SW Thistle Street, Seattle	0.8 mile SW	1,890	0.15	1932	4/29/2014	$438,000	$232	
6929 37th Avenue SW, Seattle	0.1 mile SW	1,860	0.13	1920	8/13/2014	$435,000	$234	0.9%
7170 27th Avenue SW, Seattle	0.5 mile E	1,663	0.03	2014	10/16/2015	$379,900	$228	
3408 SW Holly Street, Seattle	0.2 mile NE	1,580	0.03	2010	11/25/2015	$370,000	$234	2.5%
7166 Shinkle Place SW, Seattle	0.6 mile E	1,663	0.03	2014	8/1/2015	$374,900	$225	
6559 34th Avenue SW, Seattle	0.2 mile NE	1,520	0.03	2010	5/16/2015	$380,000	$250	10.9%
6005 48th Avenue SW, Seattle	0.9 mile NW	1,640	0.11	1925	8/4/2014	$363,000	$221	
7326 36th Avenue SW, Seattle	0.2 mile S	1,620	0.21	1918	5/29/2014	$342,400	$211	-4.5%
6022 21st Avenue SW, Seattle	1.0 mile NE	1,390	0.16	1928	12/19/2014	$315,000	$227	
7114 32nd Avenue SW, Seattle	0.2 mile E	1,460	0.12	1927	8/11/2014	$316,000	$216	-4.5%
6034 38th Avenue SW, Seattle	0.5 mile S	1,580	0.15	1914	3/11/2016	$417,000	$264	
6727 37th Avenue SW, Seattle	0.1 mile S	1,540	0.15	1927	3/22/2016	$405,000	$263	-0.4%

Minimum	-6.8%
Maximum	10.9%
Average	0.3%
Median	-0.4%

There is no consistent pattern of negative value impact for the sales located within the subject's sphere of influence. The paired sales indicate a price difference ranging from -6.8% to 10.9% with an

average price difference of 0.3% and a median of -0.4%. Seven pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining six pairings do not indicate any decrease in value for the sales located within the subject's sphere of influence.

Close-Proximity Tower Analysis

We also completed an analysis on properties adjacent to, or in very close proximity, telecommunication/cellular towers.

In order to make this determination, we analyzed single-family home sales in close proximity to two existing telecommunications towers in King County. During our research, we exclude all non-arm's length transactions such as partial transfers, foreclosures, trustee sales and tax sales. We utilize a paired data analysis of individual home sales. Paired data analysis is defined by *The Dictionary of Real Estate Appraisal, 6th Edition* as:

> *A quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties. To apply this technique, sales or rental data on nearly identical properties, or adjusted data, is compared to isolate and estimate a single characteristic's effect on value or rent.*

In our analysis, we compare sales of single-family homes within 200 feet of two telecommunication towers to otherwise similar homes within a 1.0 mile radius. Due to limited available data, we included paired-sales located within 0.5 miles but further than 0.25 miles from the towers. Our analysis does not extend to properties further than one mile from the towers since doing so would increase the chance price differences might result due to location. Sales of homes within the towers' spheres of influence, without suitably similar pairings, have been excluded from our analysis. The towers analyzed also represent lattice-type towers as opposed to mono-pole towers. Lattice-type towers are generally considered more visually disruptive than mono-pole towers.

T-Mobile Tower Comparable

This T-Mobile Tower is a Lattice-Type Telecommunications Tower located at 4350 88th Avenue SE, Mercer Island, King County, WA. The tower, which is 120' in height, is situated in the east portion of Rotary Park, a roughly 3.55-acre parcel of land in a suburban residential-type area.

The tower is adjacent to 89th Avenue SE, a street with primarily residential uses. The residential lots abutting 89th Avenue SE are typically medium in size. We have compared sale prices of single-family homes within 200 feet of the tower to those located within 0.25 and 1.0 miles from the tower.

Among other qualifications for consideration, we limit the paired-sale sets to properties which have 150 square feet (or less) to each other to control for variable prices per square foot due to significant size differences. The per-unit prices of properties with greater differences in size run an increased risk of being skewed. We also focused on properties featuring similar building styles. In order to collect an adequate amount of data for analysis, we have utilized multiple pairings of each sale if possible.

We located three such sales. The three sales located all involve properties located directly across the street from the tower analyzed. The properties and tower are shown in the following aerial photo.

Our paired data analysis illustrating the increase/decrease in price for homes located within 200 feet of the tower is presented in the following table.

Paired Data Analysis

Pairs	Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Differenc
1A	4515 Ferncroft Road, Mercer Island	0.4 mile SE	3,040	0.74	1974	4/4/2016	$1,165,000	$383	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	6.3%
1B	8420 SE 47th Street, Mercer Island	0.45 mile SW	3,210	0.25	1963	1/8/2016	$1,300,000	$405	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	0.6%
1C	4645 88th Avenue SE, Mercer Island	0.4 mile S	3,050	0.23	1966	7/17/2016	$1,303,475	$427	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	-4.7%
2A	3820 80th Avenue SE, Mercer Island	0.75 mile NW	3,070	0.27	1972	5/29/2002	$534,000	$174	
	4324 89th Avenue SE, Mercer Island	155 ft E	3,150	0.23	1963	6/21/2002	$549,000	$174	0.2%
2B	4859 86th Avenue SE, Mercer Island	0.70 mile SW	3,090	0.36	1963	4/5/2003	$555,000	$180	
	4324 89th Avenue SE, Mercer Island	155 ft. E	3,150	0.23	1963	6/21/2002	$549,000	$174	-3.0%
3	4215 Island Crest Way, Mercer	0.35 mile NW	2,200	0.32	1955	1/7/2013	$595,000	$270	
	4334 89th Avenue SE, Mercer Island	170 ft. E	2,190	0.23	1962	5/23/2013	$616,000	$281	4.0%

Minimum	-4.7%
Maximum	6.3%
Average	0.6%
Median	0.4%

There is no consistent pattern of negative value impact for the sales located within 200 feet of the tower. The paired sales indicate a price difference ranging from -4.7% to 6.3% with an average price difference of 0.6% and a median of 0.4%. Two pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining four pairings indicate a price trend increase for the sales located within 200 feet of the cell tower in the subject's sphere of influence.

Comcast Tower Comparable

This Comcast Tower is a Lattice-Type Telecommunications Tower located at 8914 Roosevelt Way, Seattle, King County, WA. The tower is 200' in height, and the tower and underlying equipment are situated on a 0.49-acre parcel of land in an urban-type area.

The tower's immediate area is characterized by smaller urban residential lots and commercial parcels along the arterial. We have compared sale prices of single-family homes within 200 feet of the tower to those located within 0.25 and 1.0 miles from the tower.

We located such sales, shown in the following aerial photo.

Our paired data analysis of multiple sales matched to the above sales, illustrating the increase/decrease in price for homes located in close proximity to the tower, is presented in the following table.

Paired Data Analysis

Pair	Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Difference
1A	1017 NE 91st Street, Seattle	0.1 mile N	2,200	0.15	1941	8/19/2005	$425,000	$193	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	1.9%
1B	1018 NE 96th Street, Seattle	0.35 mile N	2,022	0.12	1942	9/29/2005	$375,000	$185	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	6.1%
1C	815 NE 96th Street, Seattle	0.35 mile NW	2,280	0.16	1946	4/22/2005	$413,000	$181	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	8.6%
2	8024 11th Avenue NE, Seattle	0.4 mile S	2,660	0.17	1908	12/29/2008	$561,500	$211	
	1019 NE 90th Street, Seattle	100 feet E	2,500	0.15	1930	6/14/2008	$540,000	$216	2.3%
3A	8024 11th Avenue NE, Seattle	0.4 mile S	2,660	0.17	1908	12/29/2008	$561,500	$211	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	10.7%
3B	839 NE 97th Street, Seattle	0.4 mile N	2,430	0.15	1927	8/14/2015	$565,000	$233	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	0.5%
3C	1007 103rd Street, Seattle	0.65 mile N	2,540	0.10	1940	11/20/2015	$605,000	$238	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	-1.9%

Minimum	-1.9%
Maximum	10.7%
Average	4.0%
Median	2.3%

There is no consistent pattern of negative value impact for the sales located within the cell tower's sphere of influence. The paired sales indicate a price difference ranging from -1.9% to 10.7% with an average price difference of 4.0% and a median of 2.3%. One pairing indicated a decrease in value for the sale located in close proximity to the tower. The remaining five pairings do not indicate any decrease in value for the sales located within close proximity to the tower.

Literature Review

We also reviewed existing literature to determine whether other studies have shown a link between cellular towers/utility infrastructure and diminished residential property values.

Our review revealed that a limited number of studies have been completed analyzing the impact of cellular towers on residential property values in the United States., much less in the Pacific Northwest. Of particular interest however, is a study completed by J.R. Cowger, Steven C. Bottmiller, MAI and James Cahill, the results of which were published in the September/October 1996 issue of *Right of Way Magazine*. This study analyzed residential home prices in two different Oregon Counties (Washington & Clackamas) and two different Washington Counties (Clark & King,) that were in proximity to BPA high-voltage transmission lines varying in voltage from 115 kV to 500 kV. The analysis was completed incorporating a paired-sales analysis.

The analysis concluded that "overhead transmission lines had minimal impacts on residential property values in these metropolitan areas". This is relevant to the subject property and the proposed monopole tower since market participants typically consider transmission lines to be more disruptive than monopole cellular towers.

Market Study Conclusion

Based on the preceding valuation analysis and subject to the definitions, assumptions, and limiting conditions expressed in the report, it is our conclusion that there will not be a discernable negative impact on single-family home values resulting from the presence of the proposed subject telecommunication tower.

Furthermore, there is already significant existing electric utility infrastructure located in the area of the proposed tower, including a corridor of high-tension power lines and associated towers (with a cellular dish). The presence of the adjacent high-tension electric transmission lines and existing cellular dish mounted on the transmission tower adjacent to the firehouse, is a pre-existing condition already impacting the immediate neighborhood.

This market study is not based on any extraordinary assumptions or hypothetical conditions that may impact the assignment results.

Certification

We certify that, to the best of our knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
4. We have not performed any services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
5. We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
8. Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice as well as applicable state appraisal regulations.
9. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute.
10. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
11. Allen Safer, MAI, MRICS and Robert A. Hartner made a personal inspection of the property that is the subject of this report.
12. No one provided significant real property appraisal assistance to the persons signing this certification.
13. We have experience in appraising properties similar to the subject and are in compliance with the Competency Rule of USPAP.
14. As of the date of this report, Allen Safer, MAI, MRICS has completed the continuing education program for Designated Members of the Appraisal Institute.

15. **As of the date of this report, Robert A. Hartner has completed the Standards and Ethics Education Requirements for Candidates of the Appraisal Institute.**

Allen Safer, MAI, MRICS
Certified General Real Estate Appraiser
Washington Certificate # 1100662

Robert A. Hartner
Certified General Real Estate Appraiser
Washington Certificate # 1102293

Assumptions and Limiting Conditions

This appraisal and any other work product related to this engagement are limited by the following standard assumptions, except as otherwise noted in the report:

1. The title is marketable and free and clear of all liens, encumbrances, encroachments, easements and restrictions. The property is under responsible ownership and competent management and is available for its highest and best use.
2. There are no existing judgments or pending or threatened litigation that could affect the value of the property.
3. There are no hidden or undisclosed conditions of the land or of the improvements that would render the property more or less valuable. Furthermore, there is no asbestos in the property.
4. The revenue stamps placed on any deed referenced herein to indicate the sale price are in correct relation to the actual dollar amount of the transaction.
5. The property is in compliance with all applicable building, environmental, zoning, and other federal, state and local laws, regulations and codes.
6. The information furnished by others is believed to be reliable, but no warranty is given for its accuracy.

This appraisal and any other work product related to this engagement are subject to the following limiting conditions, except as otherwise noted in the report:

1. An appraisal is inherently subjective and represents our opinion as to the value of the property appraised.
2. The conclusions stated in our appraisal apply only as of the effective date of the appraisal, and no representation is made as to the effect of subsequent events.
3. No changes in any federal, state or local laws, regulations or codes (including, without limitation, the Internal Revenue Code) are anticipated.
4. No environmental impact studies were either requested or made in conjunction with this appraisal, and we reserve the right to revise or rescind any of the value opinions based upon any subsequent environmental impact studies. If any environmental impact statement is required by law, the appraisal assumes that such statement will be favorable and will be approved by the appropriate regulatory bodies.
5. Unless otherwise agreed to in writing, we are not required to give testimony, respond to any subpoena or attend any court, governmental or other hearing with reference to the property without compensation relative to such additional employment.
6. We have made no survey of the property and assume no responsibility in connection with such matters. Any sketch or survey of the property included in this report is for illustrative purposes only and should not be considered to be scaled accurately for size. The appraisal

covers the property as described in this report, and the areas and dimensions set forth are assumed to be correct.

7. No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in our appraisal.

8. We accept no responsibility for considerations requiring expertise in other fields. Such considerations include, but are not limited to, legal descriptions and other legal matters such as legal title, geologic considerations such as soils and seismic stability; and civil, mechanical, electrical, structural and other engineering and environmental matters. Such considerations may also include determinations of compliance with zoning and other federal, state, and local laws, regulations and codes.

9. The distribution of the total valuation in the report between land and improvements applies only under the reported highest and best use of the property. The allocations of value for land and improvements must not be used in conjunction with any other appraisal and are invalid if so used. The appraisal report shall be considered only in its entirety. No part of the appraisal report shall be utilized separately or out of context.

10. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraisers, or any reference to the Appraisal Institute) shall be disseminated through advertising media, public relations media, news media or any other means of communication (including without limitation prospectuses, private offering memoranda and other offering material provided to prospective investors) without the prior written consent of the persons signing the report.

11. Information, estimates and opinions contained in the report and obtained from third-party sources are assumed to be reliable and have not been independently verified.

12. Any income and expense estimates contained in the appraisal report are used only for the purpose of estimating value and do not constitute predictions of future operating results.

13. If the property is subject to one or more leases, any estimate of residual value contained in the appraisal may be particularly affected by significant changes in the condition of the economy, of the real estate industry, or of the appraised property at the time these leases expire or otherwise terminate.

14. Unless otherwise stated in the report, no consideration has been given to personal property located on the premises or to the cost of moving or relocating such personal property; only the real property has been considered.

15. The current purchasing power of the dollar is the basis for the values stated in the appraisal; we have assumed that no extreme fluctuations in economic cycles will occur.

16. The values found herein is subject to these and to any other assumptions or conditions set forth in the body of this report but which may have been omitted from this list of Assumptions and Limiting Conditions.

17. The analyses contained in the report necessarily incorporate numerous estimates and assumptions regarding property performance, general and local business and economic

conditions, the absence of material changes in the competitive environment and other matters. Some estimates or assumptions, however, inevitably will not materialize, and unanticipated events and circumstances may occur; therefore, actual results achieved during the period covered by our analysis will vary from our estimates, and the variations may be material.

18. The Americans with Disabilities Act (ADA) became effective January 26, 1992. We have not made a specific survey or analysis of the property to determine whether the physical aspects of the improvements meet the ADA accessibility guidelines. We claim no expertise in ADA issues, and render no opinion regarding compliance of the subject with ADA regulations. Inasmuch as compliance matches each owner's financial ability with the cost to cure the non-conforming physical characteristics of a property, a specific study of both the owner's financial ability and the cost to cure any deficiencies would be needed for the Department of Justice to determine compliance.

19. The appraisal report is prepared for the exclusive benefit of the Client, its subsidiaries and/or affiliates. It may not be used or relied upon by any other party. All parties who use or rely upon any information in the report without our written consent do so at their own risk.

20. No studies have been provided to us indicating the presence or absence of hazardous materials on the subject property or in the improvements, and our valuation is predicated upon the assumption that the subject property is free and clear of any environment hazards including, without limitation, hazardous wastes, toxic substances and mold. No representations or warranties are made regarding the environmental condition of the subject property. Integra Realty Resources – Seattle, Integra Realty Resources, Inc., Integra Strategic Ventures, Inc. and/or any of their respective officers, owners, managers, directors, agents, subcontractors or employees (the "Integra Parties"), shall not be responsible for any such environmental conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because we are not experts in the field of environmental conditions, the appraisal report cannot be considered as an environmental assessment of the subject property.

21. The persons signing the report may have reviewed available flood maps and may have noted in the appraisal report whether the subject property is located in an identified Special Flood Hazard Area. We are not qualified to detect such areas and therefore do not guarantee such determinations. The presence of flood plain areas and/or wetlands may affect the value of the property, and the value conclusion is predicated on the assumption that wetlands are non-existent or minimal.

22. Integra Realty Resources – Seattle is not a building or environmental inspector. Integra Seattle does not guarantee that the subject property is free of defects or environmental problems. Mold may be present in the subject property and a professional inspection is recommended.

23. The appraisal report and value conclusions for an appraisal assume the satisfactory completion of construction, repairs or alterations in a workmanlike manner.

24. It is expressly acknowledged that in any action which may be brought against any of the Integra Parties, arising out of, relating to, or in any way pertaining to this engagement, the appraisal reports, and/or any other related work product, the Integra Parties shall not be

responsible or liable for any incidental or consequential damages or losses, unless the appraisal was fraudulent or prepared with intentional misconduct. It is further acknowledged that the collective liability of the Integra Parties in any such action shall not exceed the fees paid for the preparation of the appraisal report unless the appraisal was fraudulent or prepared with intentional misconduct. Finally, it is acknowledged that the fees charged herein are in reliance upon the foregoing limitations of liability.

25. Integra Realty Resources – Seattle, an independently owned and operated company, has prepared the appraisal for the specific intended use stated elsewhere in the report. The use of the appraisal report by anyone other than the Client is prohibited except as otherwise provided. Accordingly, the appraisal report is addressed to and shall be solely for the Client's use and benefit unless we provide our prior written consent. We expressly reserve the unrestricted right to withhold our consent to your disclosure of the appraisal report or any other work product related to the engagement (or any part thereof including, without limitation, conclusions of value and our identity), to any third parties. Stated again for clarification, unless our prior written consent is obtained, no third party may rely on the appraisal report (even if their reliance was foreseeable).

26. The conclusions of this report are estimates based on known current trends and reasonably foreseeable future occurrences. These estimates are based partly on property information, data obtained in public records, interviews, existing trends, buyer-seller decision criteria in the current market, and research conducted by third parties, and such data are not always completely reliable. The Integra Parties are not responsible for these and other future occurrences that could not have reasonably been foreseen on the effective date of this assignment. Furthermore, it is inevitable that some assumptions will not materialize and that unanticipated events may occur that will likely affect actual performance. While we are of the opinion that our findings are reasonable based on current market conditions, we do not represent that these estimates will actually be achieved, as they are subject to considerable risk and uncertainty. Moreover, we assume competent and effective management and marketing for the duration of the projected holding period of this property.

27. All prospective value opinions presented in this report are estimates and forecasts which are prospective in nature and are subject to considerable risk and uncertainty. In addition to the contingencies noted in the preceding paragraph, several events may occur that could substantially alter the outcome of our estimates such as, but not limited to changes in the economy, interest rates, and capitalization rates, behavior of consumers, investors and lenders, fire and other physical destruction, changes in title or conveyances of easements and deed restrictions, etc. It is assumed that conditions reasonably foreseeable at the present time are consistent or similar with the future.

Addendum A

Appraiser Qualifications

Allen Safer, MAI, MRICS

Integra Realty Resources
Seattle

600 University Street
Suite 310
Seattle, WA 98101

T 206.903.6700x190
F 206.623.5731

irr.com

Experience

Senior **Managing Director for Integra Realty Resources-Seattle in Washington State. Integra Realty Resources Seattle is part of Integra Realty Resources (IRR), a national valuation and consulting firm with 66 offices in the U.S. and Caribbean.**

Mr. Safer **and his firm are experienced in the analysis of various property types including: vacant land,** residential **plats, master planned communities, multi family developments, retail, office, industrial and** special **purpose properties in Washington State and Alaska. Clients served** include various financial concerns, law and public accounting firms, private and public agencies, pension and advisory companies, investment firms, and the general public. **Further,** utilizing the resources of Integra's nationwide coverage, the firm is actively involved in the completion of large portfolio engagements.

Mr. Safer's background includes 35+ years of consultation and valuation analysis for the general public on commercial and residential properties in Washington and Alaska. Entered the appraisal profession with Coldwell Banker Appraisal Services from 1977 to 1981. Founded Safer & Company in 1982 and transitioned to Property Counselors from 1986 to 2001.

Professional Activities & Affiliations

Appraisal Institute, Member (MAI)
President: Local Chapter of the Appraisal Institute, January 2007 - December 2007
Chairman: Seattle Chapter Real Estate Fall Conference, January 2008 - December 2010
Chairman: National Appraisal Institute Regional Chairs, January 2000 - December 2000
Chairman: National Appraisal Institute Executive Committee, January 2000 - December 2000
Chairman: Pacific NW Region 1 Board of Directors, January 1998 - December 1999
Board of Director: Appraisal Institute, January 1996 - December 2001
Member: Appraisal Institute Finance Committee, January 1996 - December 1997
Board of Director: General Appraisal Board of the Appraisal Institute, January 1994 - December 1996
Chairman: National Comprehensive Exam Subcommittee of the Appraisal Institute, Jan. 1990 -Dec.1992
Member: National Comprehensive Exam Subcommittee of the Appraisal Institute, Jan. 1983 -Dec.1992
Member: Government Relations Committee, January 2002 December 2004
Member: National Admissions Committee of the Appraisal Institute, January 1990 December 1993
Board of Director: Seattle Chapter of the Appraisal Institute, January 1989 December 1992
Member: Regional Professional Standards Panel of the Appraisal Institute, January 1984
Chairman: Local Chapter Admissions and Programs, January 1986 December 1991

Licenses

Alaska, Appraiser, 412
Washington, Appraiser, 1100662, Expires September 2015
Washington, Designated Broker, 3341, Expires December 2015

Education

Bachelor of Science, Real Estate, University of Colorado, Boulder, Colorado

Qualified Before Courts & Administrative Bodies

United States Bankruptcy Court, Seattle Washington
King County Superior Court, Washington
King County Board of Equalization
Pierce County District Court
Washington State Board of Tax Appeals
Various Arbitration & Land Use Hearings

Miscellaneous

Recipient of the Seattle AI Chapter's "Appraiser of the Year" Award for 2001.
Recipient of the Seattle AI Chapter's 2009 "President's Award".
IRR Certified Reviewer

asafer@irr.com - 206.436.1190

Robert A. Hartner

Experience

Robert Hartner is a Senior Analyst with Integra Realty Resources. He provides valuation services for office, industrial, land, multi-family, and retail properties for the purposes of eminent domain, acquisition, financing, asset management, portfolio analysis and valuation. Robert has been actively engaged in Commercial Real Estate Valuation since 2006. Prior to joining Integra Realty Resources - Seattle, he worked for Integra in Milwaukee, Wisconsin.

Robert focuses primarily on appraisal and valuation but does other real estate consulting assignments including highest and best use analysis, ground leases, estate valuations, and lease arbitration. He specializes in appraisals for eminent domain and right-of-way matters.

Professional Activities & Affiliations

Appraisal Institute, Affiliate Member

Licenses

Washington, Certified General Real Estate Appraiser, 1102293, Expires May 2016
Wisconsin, Certified General Real Estate Appraiser, 2002-10, Expires December 2015

Education

Bachelor of Arts, Finance, Production & Operations Mgmt. - University of Wisconsin - Milwaukee

Robert is working toward his MAI designation. The following courses sponsored by the Appraisal Institute have been successfully completed:

- Basic Appraisal Principles
- Basic Appraisal Procedures
- National USPAP Course
- General Appraiser Sales Comparison Approach
- General Appraiser Site Valuation and Cost Approach
- Business Practices and Ethics
- General Appraiser Report Writing and Case Studies
- General Appraiser Income Approach / Part 1
- General Appraiser Income Approach / Part 2
- Real Estate Finance Statistics and Valuation Modeling
- General Market Analysis and Highest & Best Use
- Standards and Ethics Education Requirement of the Appraisal Institute for associate members

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Integra Realty Resources, Inc.
Corporate Profile

Integra Realty Resources, Inc. offers the most comprehensive property valuation and counseling coverage in the United States with 62 independently owned and operated offices in 34 states and the Caribbean. Integra was created for the purpose of combining the intimate knowledge of well-established local firms with the powerful resources and capabilities of a national company. Integra offers integrated technology, national data and information systems, as well as standardized valuation models and report formats for ease of client review and analysis. Integra's local offices have an average of 25 years of service in the local market, and virtually all are headed by a Senior Managing Director who is an MAI member of the Appraisal Institute.

A listing of IRR's local offices and their Senior Managing Directors follows:

ATLANTA, GA - Sherry L. Watkins., MAI, FRICS
AUSTIN, TX - Randy A. Williams, MAI, SR/WA, FRICS
BALTIMORE, MD - G. Edward Kerr, MAI, MRICS
BIRMINGHAM, AL - Rusty Rich, MAI, MRICS
BOISE, ID - Bradford T. Knipe, MAI, ARA, CCIM, CRE, FRICS
BOSTON, MA - David L. Cary, Jr., MAI, MRICS
CHARLESTON, SC - Cleveland "Bud" Wright, Jr., MAI
CHARLOTTE, NC - Fitzhugh L. Stout, MAI, CRE, FRICS
CHICAGO, IL - Eric L. Enloe, MAI, FRICS
CINCINNATI, OH - Gary S. Wright, MAI, FRICS, SRA
CLEVELAND, OH - Douglas P. Sloan, MAI
COLUMBIA, SC - Michael B. Dodds, MAI, CCIM
COLUMBUS, OH - Bruce A. Daubner, MAI, FRICS
DALLAS, TX - Mark R. Lamb, MAI, CPA, FRICS
DAYTON, OH - Gary S. Wright, MAI, FRICS, SRA
DENVER, CO - Brad A. Weiman, MAI, FRICS
DETROIT, MI - Anthony Sanna, MAI, CRE, FRICS
FORT WORTH, TX - Gregory B. Cook, SR/WA
GREENSBORO, NC - Nancy Tritt, MAI, SRA, FRICS
GREENVILLE, SC - Michael B. Dodds, MAI, CCIM
HARTFORD, CT - Mark F. Bates, MAI, CRE, FRICS
HOUSTON, TX - David R. Dominy, MAI, CRE, FRICS
INDIANAPOLIS, IN - Michael C. Lady, MAI, SRA, CCIM, FRICS
JACKSON, MS - J. Walter Allen, MAI, FRICS
JACKSONVILLE, FL - Robert Crenshaw, MAI, FRICS
KANSAS CITY, MO/KS - Kenneth Jaggers, MAI, FRICS
LAS VEGAS, NV - Charles E. Jack IV, MAI
LOS ANGELES, CA - John G. Ellis, MAI, CRE, FRICS
LOS ANGELES, CA - Matthew J. Swanson, MAI
LOUISVILLE, KY - Stacey Nicholas, MAI, MRICS
MEMPHIS, TN - J. Walter Allen, MAI, FRICS
MIAMI/PALM BEACH, FL - Scott M. Powell, MAI, FRICS
MIAMI/PALM BEACH, FL- Anthony M. Graziano, MAI, CRE, FRICS
MINNEAPOLIS, MN - Michael F. Amundson, MAI, CCIM, FRICS
NAPLES, FL - Carlton J. Lloyd, MAI, FRICS
NASHVILLE, TN - R. Paul Perutelli, MAI, SRA, FRICS
NEW JERSEY COASTAL - Halvor J. Egeland, MAI
NEW JERSEY NORTHERN - Barry J. Krauser, MAI, CRE, FRICS
NEW YORK, NY - Raymond T. Cirz, MAI, CRE, FRICS
ORANGE COUNTY, CA - Larry D. Webb, MAI, FRICS
ORLANDO, FL - Christopher Starkey, MAI, MRICS
PHILADELPHIA, PA - Joseph D. Pasquarella, MAI, CRE, FRICS
PHOENIX, AZ - Walter 'Tres' Winius III, MAI, FRICS
PITTSBURGH, PA - Paul D. Griffith, MAI, CRE, FRICS
PORTLAND, OR - Brian A. Glanville, MAI, CRE, FRICS
PROVIDENCE, RI - Gerard H. McDonough, MAI, FRICS
RALEIGH, NC - Chris R. Morris, MAI, FRICS
RICHMOND, VA - Kenneth L. Brown, MAI, CCIM, FRICS
SACRAMENTO, CA - Scott Beebe, MAI, FRICS
ST. LOUIS, MO - P. Ryan McDonald, MAI, FRICS
SALT LAKE CITY, UT - Darrin W. Liddell, MAI, CCIM, FRICS
SAN ANTONIO, TX - Martyn C. Glen, MAI, CRE, FRICS
SAN DIEGO, CA - Jeff A. Greenwald, MAI, SRA, FRICS
SAN FRANCISCO, CA - Jan Kleczewski, MAI, FRICS
SARASOTA, FL - Carlton J. Lloyd, MAI, FRICS
SAVANNAH, GA - J. Carl Schultz, Jr., MAI, FRICS, CRE, SRA
SEATTLE, WA - Allen N. Safer, MAI, MRICS
SYRACUSE, NY - William J. Kimball, MAI, FRICS
TAMPA, FL - Bradford L. Johnson, MAI, MRICS
TULSA, OK - Robert E. Gray, MAI, FRICS
WASHINGTON, DC - Patrick C. Kerr, MAI, SRA, FRICS
WILMINGTON, DE - Douglas L. Nickel, MAI, FRICS
CARIBBEAN/CAYMAN ISLANDS - James Andrews, MAI, FRICS

Corporate Office
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Telephone: (212) 255-7858; Fax: (646) 424-1869; E-mail info@irr.com
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Addendum B

Comparison of Report Formats

Comparison of Report Formats

Reporting Options in 2014-2015 Edition of USPAP	Integra Reporting Formats Effective January 1, 2014	Corresponding Reporting Options in 2012-2013 Edition of USPAP
Appraisal Report	Appraisal Report – Comprehensive Format	Self-Contained Appraisal Report
	Appraisal Report – Standard Format	Summary Appraisal Report
	Appraisal Report – Concise Summary Format	Minimum Requirements of Summary Appraisal Report
Restricted Appraisal Report	Restricted Appraisal Report	Restricted Use Appraisal Report

USPAP Reporting Options

The 2014-2015 edition of USPAP requires that all written appraisal reports be prepared under one of the following options: Appraisal Report or Restricted Appraisal Report.

An Appraisal Report summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. The requirements for an Appraisal Report are set forth in Standards Rule 2-2 (a) of USPAP.

A Restricted Appraisal Report states the appraisal methods employed and the conclusions reached but is not required to include the data and reasoning that supports the analyses, opinions, and conclusions. Because the supporting information may not be included, the use of the report is restricted to the client, and further, the appraiser must maintain a work file that contains sufficient information for the appraiser to produce an Appraisal Report if required. The requirements for a Restricted Appraisal Report are set forth in Standards Rule 2-2 (b).

Integra Reporting Formats under the Appraisal Report Option

USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal. Accordingly, Integra Realty Resources has established internal standards for three alternative reporting formats that differ in depth and detail yet comply with the USPAP requirements for an Appraisal Report. The three Integra formats are:

- Appraisal Report – Comprehensive Format
- Appraisal Report – Standard Format
- Appraisal Report – Concise Summary Format

An Appraisal Report – Comprehensive Format has the greatest depth and detail of the three report types. It describes and explains the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. This format meets or exceeds the former Self-Contained Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

An Appraisal Report – Standard Format has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. This format meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

An Appraisal Report - Concise Summary Format has less depth and detail than the Appraisal Report – Standard Format. It briefly summarizes the data, reasoning, and analyses used in the appraisal process while additional supporting documentation is retained in the work file. This format meets the minimum requirements of the former Summary Appraisal Report that were contained in the 2012-2013 edition of USPAP.

On occasion, clients will request, and Integra will agree to provide, a report that is labeled a Self-Contained Appraisal Report. Other than the label, there is no difference between a Self-Contained Appraisal Report and an Appraisal Report - Comprehensive Format. Both types of reports meet or

exceed the former Self-Contained Appraisal Report requirements set forth in the 2012-2013 edition of USPAP.

Integra Reporting Format under Restricted Appraisal Report Option

Integra provides a Restricted Appraisal Report format under the USPAP Restricted Appraisal Report option. This format meets the requirements of the former Restricted Use Appraisal Report that were contained in the 2012-2013 edition of USPAP.

Addendum C

Property Information

PARCEL DATA

Parcel	095182-0080	Jurisdiction	BELLEVUE
Name	BELLEVUE FIRE DEPARTMENT	Levy Code	0816
Site Address	12412 SE 69TH WAY 98006	Property Type	C
Geo Area	75-40	Plat Block / Building Number	
Spec Area		Plat Lot / Unit Number	TR A
Property Name	FIRE DIST #25	Quarter-Section-Township-Range	NE-28-24-5

Legal Description

DEL MAR WOODS DIV 4
PLat Block:
Plat Lot: TR A

LAND DATA

Highest & Best Use As If Vacant	COMMERCIAL SERVICE	Percentage Unusable	0
Highest & Best Use As Improved	PRESENT USE	Unbuildable	NO
Present Use	Governmental Service	Restrictive Size Shape	YES
Land SqFt	70,131	Zoning	R-5
Acres	1.61	Water	WATER DISTRICT
		Sewer/Septic	PUBLIC
		Road Access	PUBLIC
		Parking	ADEQUATE
		Street Surface	PAVED

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Waterfront

Waterfront Location	
Waterfront Footage	0
Lot Depth Factor	0
Waterfront Bank	
Tide/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	NO
Proximity Influence	NO

Designations

Historic Site	
Current Use	(none)
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	NO
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Nuisances

Topography	
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrency	NO
Other Problems	NO

Environmental

Environmental	NO

BUILDING

Building Number	1
Building Description	FIRE STATION
Number Of Buildings Aggregated	1
Predominant Use	FIRE STATION (STAFFED) (322)
Shape	Rect or Slight Irreg
Construction Class	MASONRY
Building Quality	AVERAGE

Picture of Building 1

Stories	1
Building Gross Sq Ft	6,977
Building Net Sq Ft	6,877
Year Built	1975
Eff. Year	1991
Percentage Complete	100
Heating System	FORCED AIR UNIT
Sprinklers	No
Elevators	

Section(s) Of Building Number: 1

Section Number	Section Use	Description	Stories	Height	Floor Number	Gross Sq Ft	Net Sq Ft
1	FIRE STATION (STAFFED) (322)		1	24		6,977	6,877

TAX ROLL HISTORY

This is a government owned parcel.
Change to state law (RCW 84. 40.045 and 84.40.175) by the 2013 Legislature eliminated revaluation of government owned parcels.

SALES HISTORY

Excise Number	Recording Number	Document Date	Sale Price	Seller Name	Buyer Name	Instrument	Sale Reason
1411782	199501060570	12/30/1994	$0.00	KING CO FIRE DIST #25	CITY OF BELLEVUE	Quit Claim Deed	Other

REVIEW HISTORY

PERMIT HISTORY

HOME IMPROVEMENT EXEMPTION

New Search | Property Tax Bill | Map This Property | Glossary of Terms | Area Report | Print Property Detail

Account/Parcel Summary

Tax Account Number	195182008001
Parcel Number	1951820080
Account Status	This account is active.
Tax Payer Name	BELLEVUE FIRE DEPARTMENT 640815
Mailing Address	766 BELLEVUE WAY SE BELLEVUE WA 98004
Payment Status	**NO TAXES ARE DUE AT THIS TIME.**
Annual Statement Requested By	
Statement Request	Request Statement to be Mailed
Select Payment Amount	
Actions	Disabled View Cart Search Again

TO PAY MULTIPLE ACCOUNTS WITH ONE PAYMENT: After clicking on the appropriate select box(es) and the "Add to Cart" button, click "Search Again" to continue locating and adding parcels/accounts.

If you would like to pay by mail, make your check payable to King County Treasury. Write your tax account number on your check and send it to:

King County Treasury
500 Fourth Avenue, Room 600
Seattle, WA 98104

Tax Year Details Receipts 2016 Tax/Fee Distribution

2016 Tax Information

Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 3.53	Levy code:0816
Conservation	$ 9.25	Status: Exempt
Total billed:	**$ 12.78**	Omit year: 0000
Amount paid: $ 12.78		
Interest: $ 0.00		
Penalty: $ 0.00		
2016 Balance:	**$ 0.00**	

2015 Tax Information

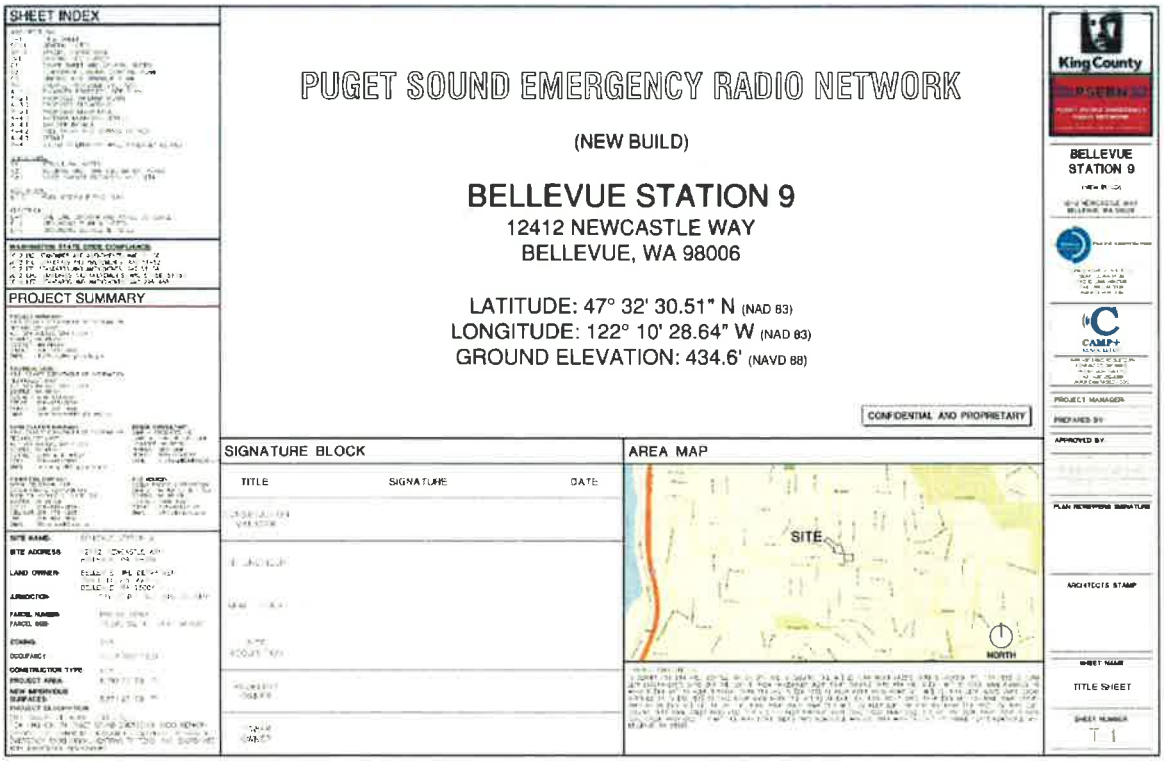
Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 3.53	Levy code:0816
Conservation	$ 9.25	Status: Exempt
Total billed:	**$ 12.78**	Omit year: 0000
Amount paid: $ 12.78		
Interest: $ 0.00		
Penalty: $ 0.00		
2015 Balance:	**$ 0.00**	

2014 Tax Information

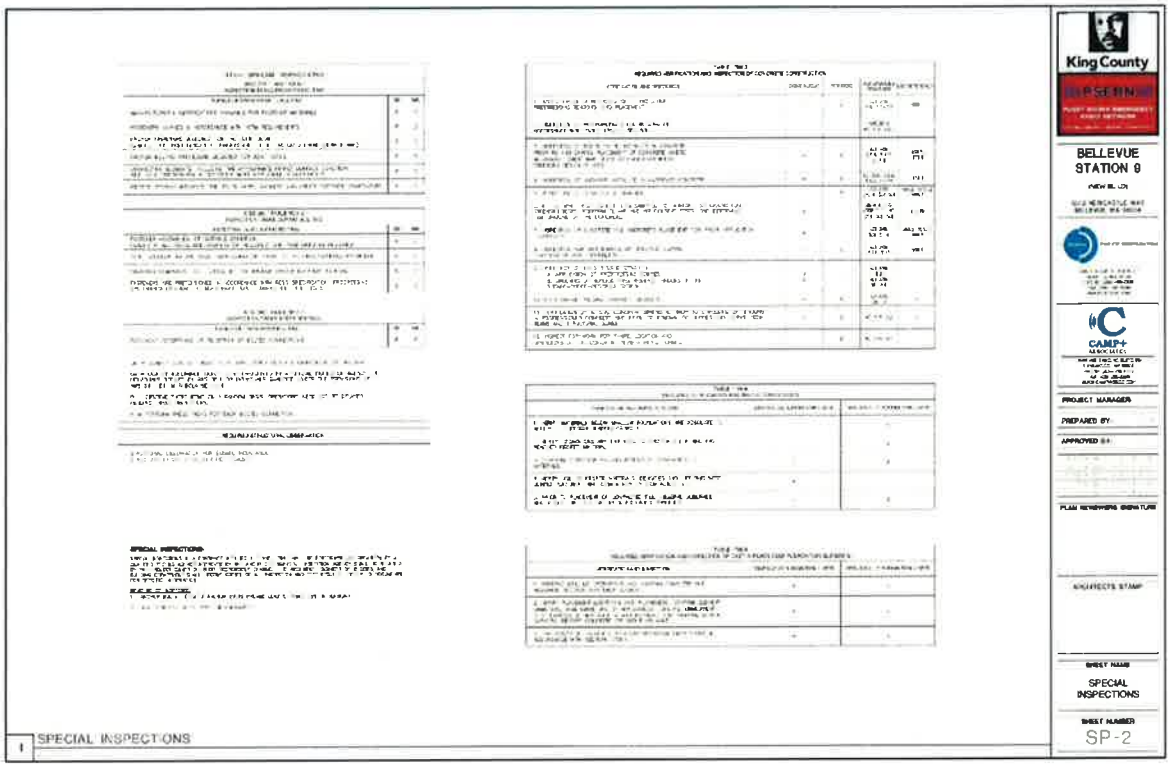
Tax	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 2.40	Levy code:0816
Conservation	$ 5.08	Status: Exempt
Total billed:	**$ 7.48**	Omit year: 0000
Amount paid: $ 7.48		
Interest: $ 0.00		
Penalty: $ 0.00		
2014 Balance:	**$ 0.00**	

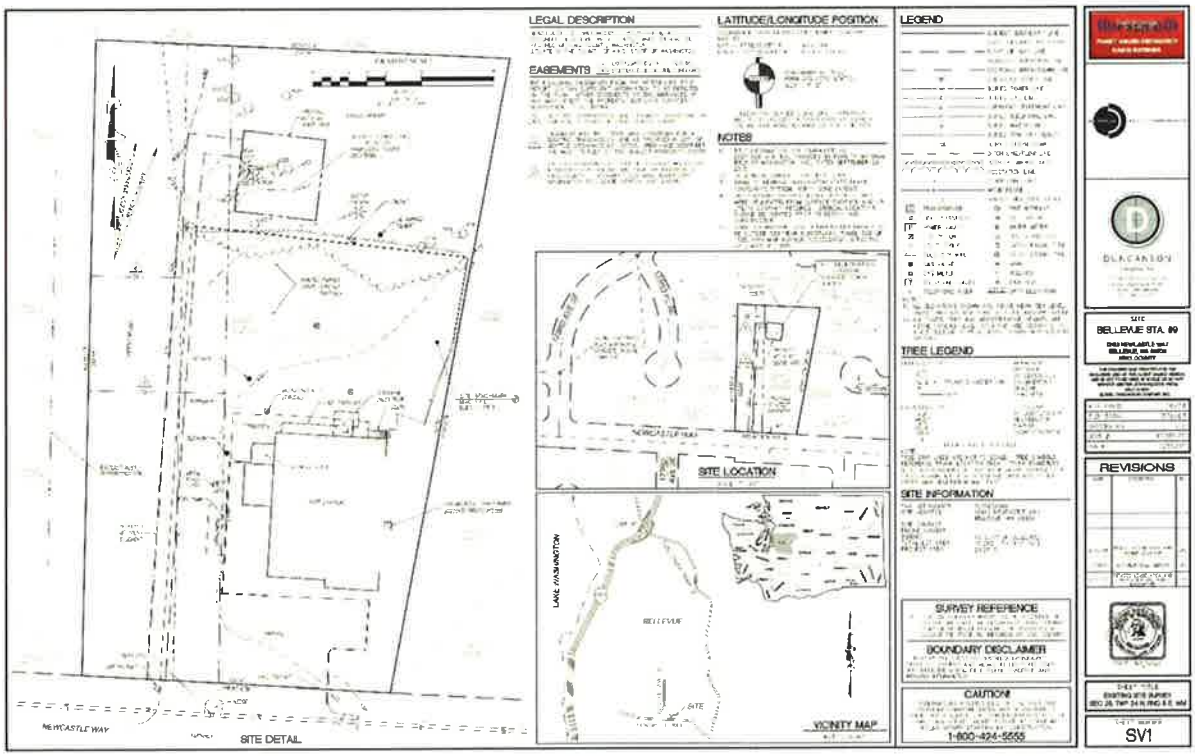
2013 Tax Information

Tax	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 2.40	Levy code:0816
Conservation	$ 5.08	Status: Exempt
Total billed:	**$ 7.48**	Omit year: 0000
Amount paid: $ 7.48		
Interest: $ 0.00		
Penalty: $ 0.00		
2013 Balance:	**$ 0.00**	


SHEET INDEX
PROJECT SUMMARY
PUGET SOUND EMERGENCY RADIO NETWORK
(NEW BUILD)
BELLEVUE STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
LATITUDE: 47° 32' 30.51" N (NAD 83)
LONGITUDE: 122° 10' 28.64" W (NAD 83)
GROUND ELEVATION: 434.6' (NAVD 88)
CONFIDENTIAL AND PROPRIETARY
SIGNATURE BLOCK
TITLE
SIGNATURE
DATE
AREA MAP
SITE
NORTH
King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWING SIGNATURE
ARCHITECTS STAMP
SHEET NAME
TITLE SHEET
SHEET NUMBER
T 1

GENERAL NOTES
King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PLAN REVIEWING SIGNATURE
ARCHITECTS STAMP
SHEET NAME
GENERAL NOTES
SHEET NUMBER
SP 1


King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
PLAN REVIEWING SIGNATURE
ARCHITECTS STAMP
SHEET NAME
SPECIAL INSPECTIONS
SHEET NUMBER
SP-2
SPECIAL INSPECTIONS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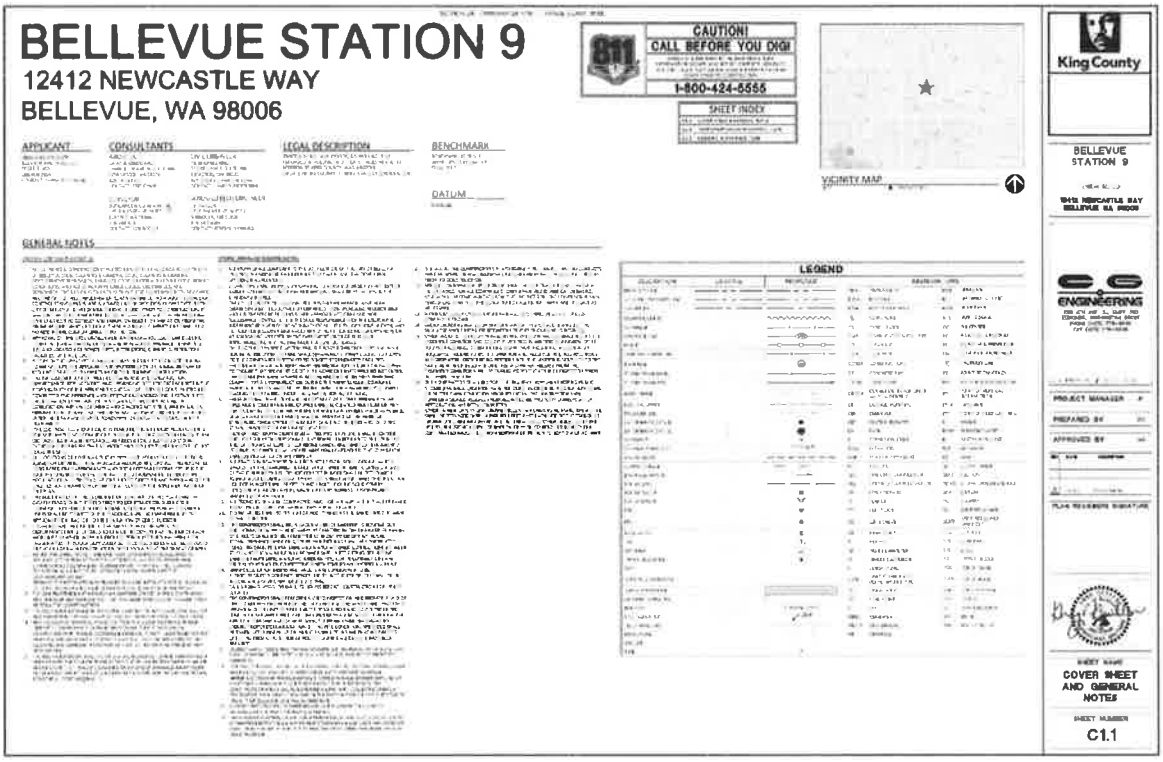
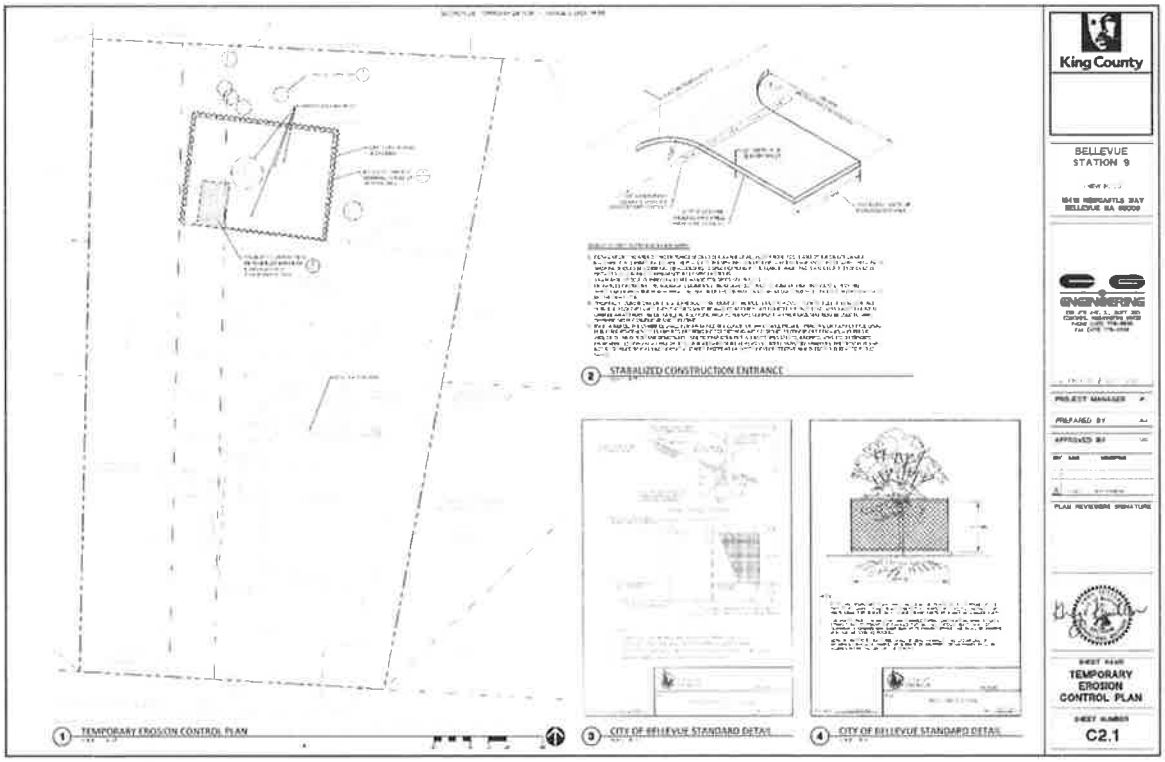
EASEMENTS
LATITUDE/LONGITUDE POSITION
NOTES
LEGEND
TREE LEGEND
SITE INFORMATION
SURVEY REFERENCE
BOUNDARY DISCLAIMER
CAUTION!
1-800-424-5555
SITE LOCATION
VICINITY MAP
LAKE WASHINGTON
BELLEVUE
NEWCASTLE WAY
SITE DETAIL
BELLEVUE STA. #9
REVISIONS
SV1


BELLEVUE STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
CAUTION!
CALL BEFORE YOU DIG!
1-800-424-5555
SHEET INDEX
VICINITY MAP
GENERAL NOTES
LEGEND
King County
BELLEVUE STATION 9
ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISIONS SIGNATURE
COVER SHEET AND GENERAL NOTES
C1.1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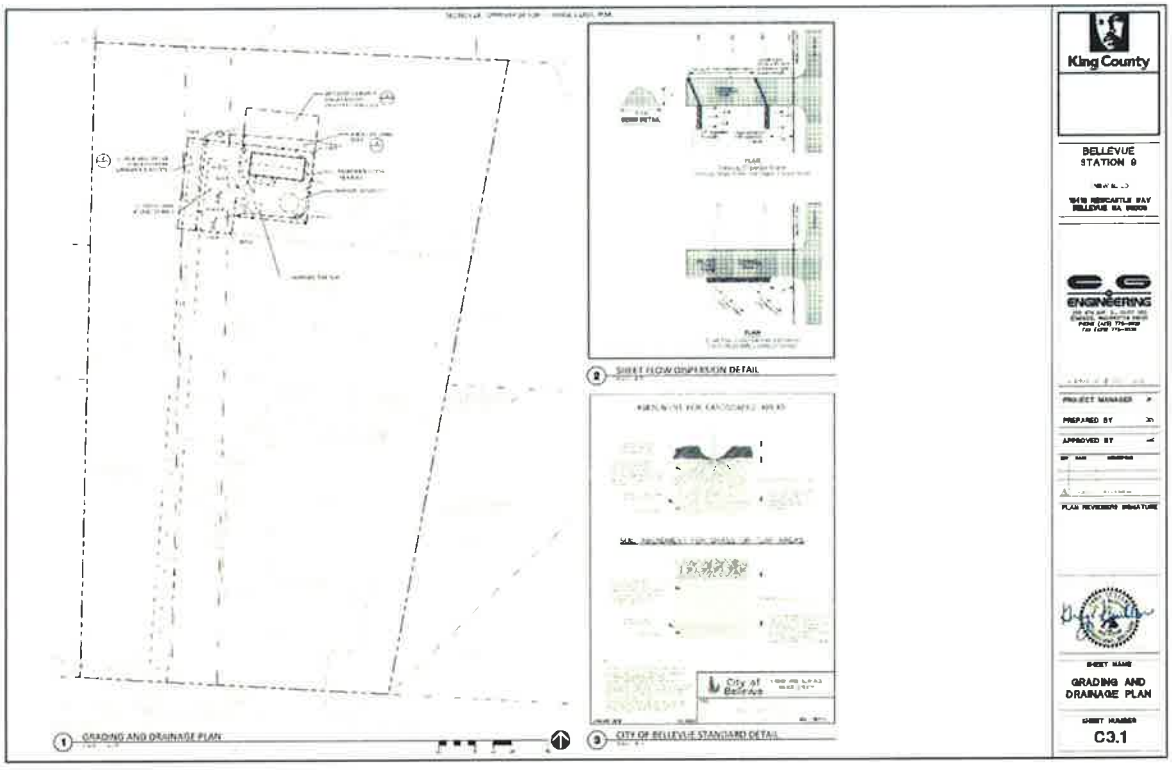
CITY OF BELLEVUE STANDARD DETAIL
CITY OF BELLEVUE STANDARD DETAIL
King County
BELLEVUE STATION 9
ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISIONS SIGNATURE
TEMPORARY EROSION CONTROL PLAN
C2.1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GRADING AND DRAINAGE PLAN
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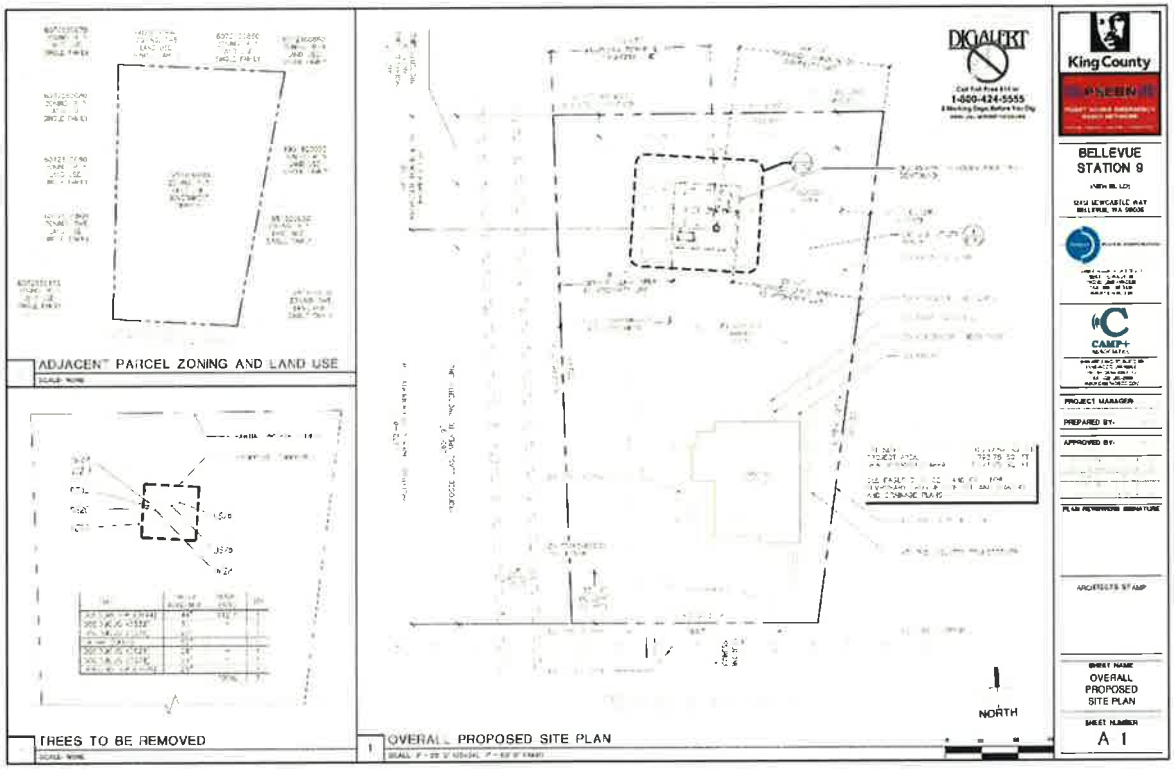
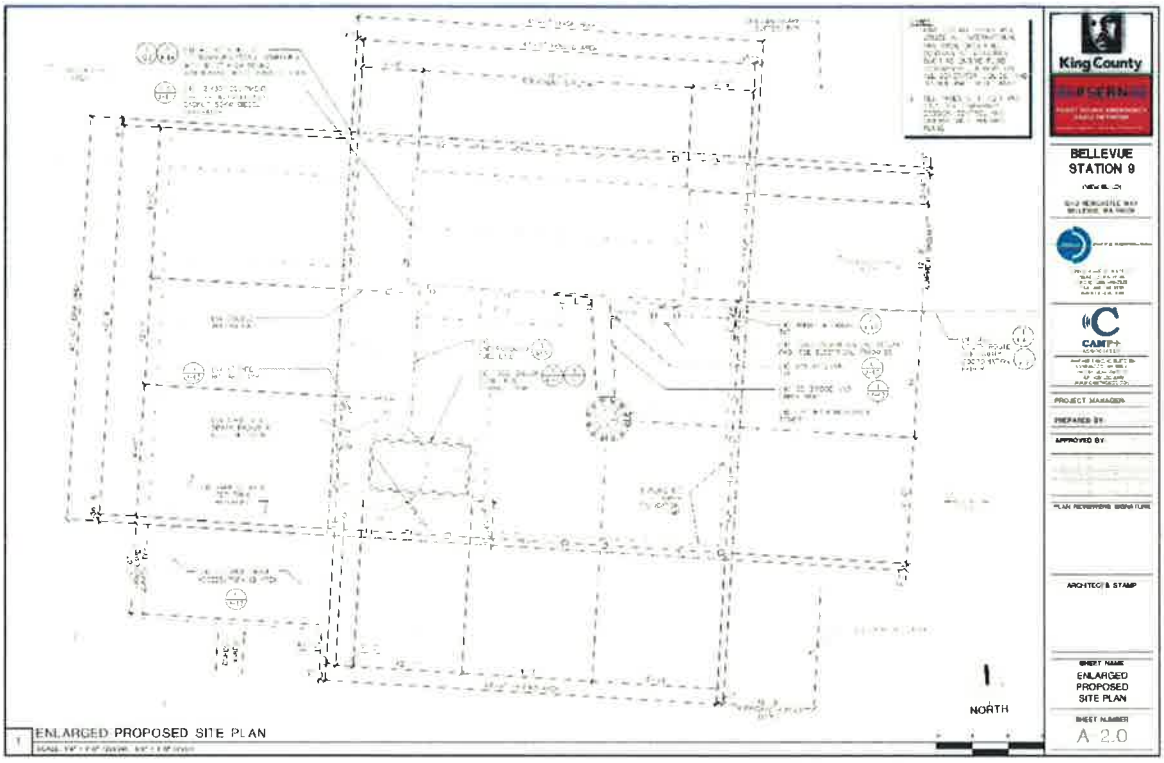
1 GRADING AND DRAINAGE PLAN
2 SHEET FLOW DISPERSION DETAIL
3 CITY OF BELLEVUE STANDARD DETAIL


King County
BELLEVUE STATION 9
OVERALL PROPOSED SITE PLAN
A 1
ADJACENT PARCEL ZONING AND LAND USE
TREES TO BE REMOVED
1 OVERALL PROPOSED SITE PLAN
NORTH
DIGALERT
1-800-424-5555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STATION 9
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APPROVED BY
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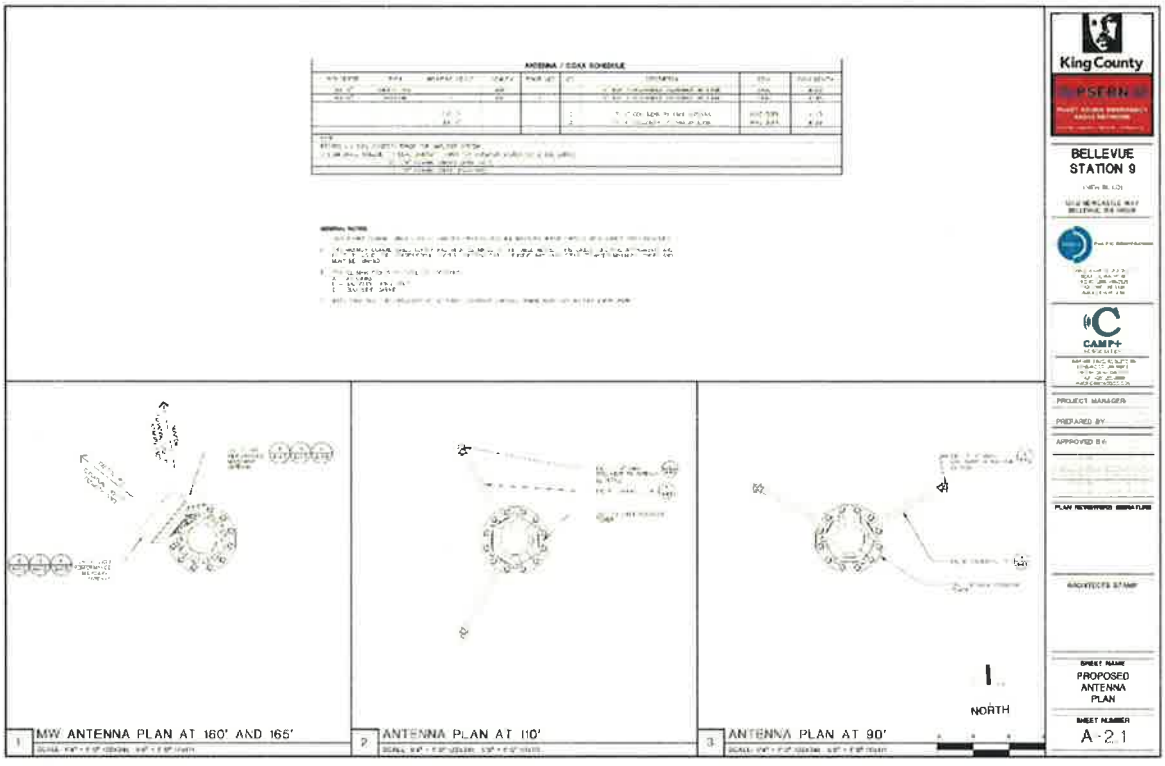
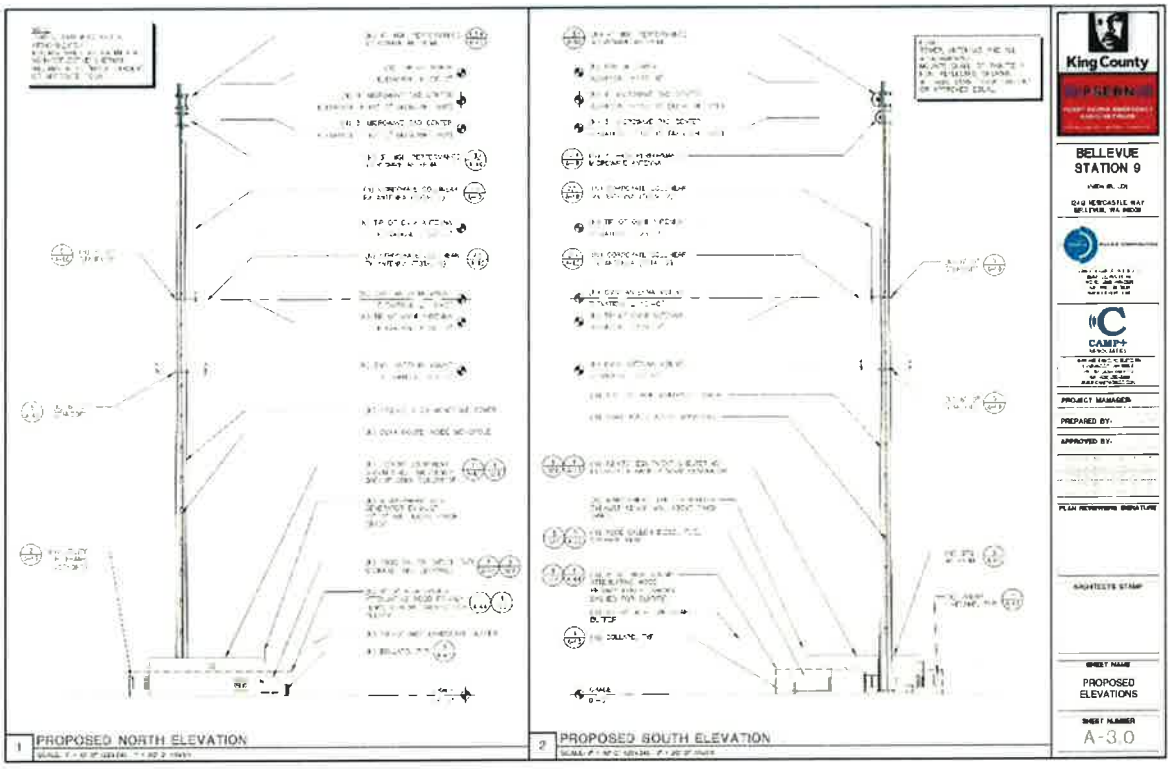
ENLARGED
PROPOSED
SITE PLAN
SHEET NUMBER
A 2.0
NORTH
1 ENLARGED PROPOSED SITE PLAN


ANTENNA / COAX SCHEDULE
King County
BELLEVUE
STATION 9
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWING SIGNATURE
ARCHITECT'S STAMP
SHEET NAME
PROPOSED
ANTENNA
PLAN
SHEET NUMBER
A-2.1
NORTH
1 MW ANTENNA PLAN AT 160' AND 165'
2 ANTENNA PLAN AT 110'
3 ANTENNA PLAN AT 90'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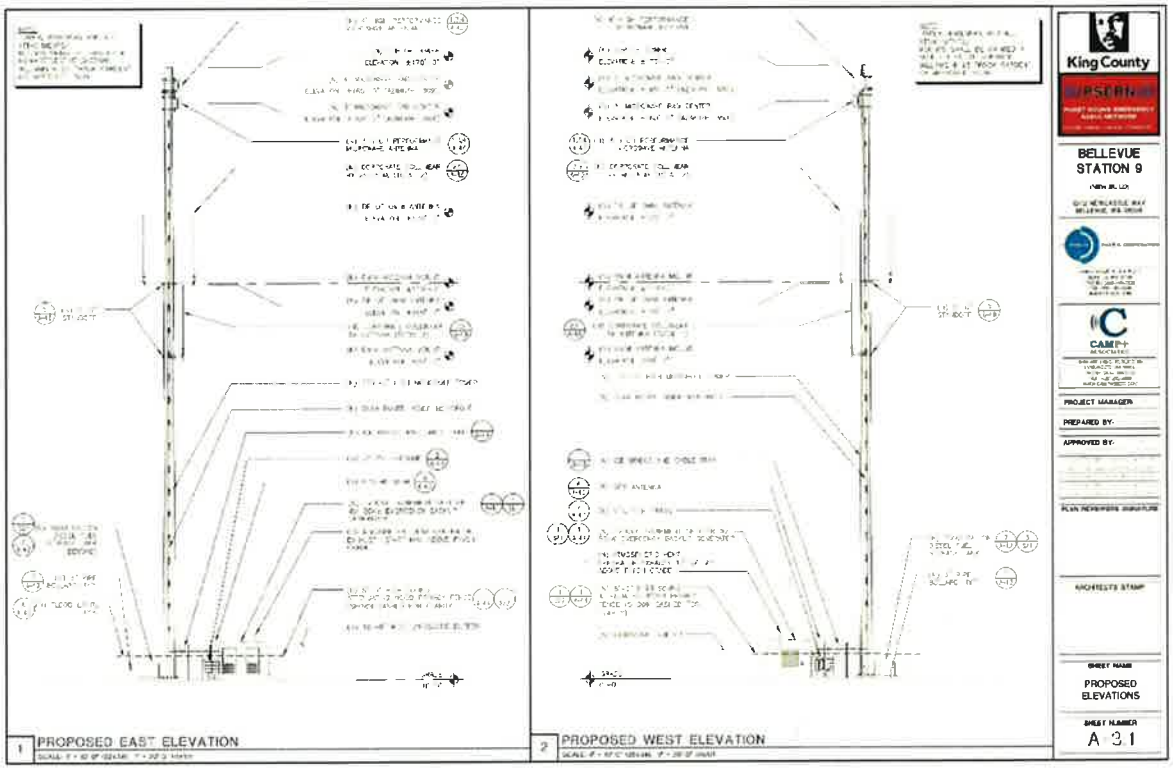
APPROVED BY:
PROPOSED ELEVATIONS
A-3.0
1 PROPOSED NORTH ELEVATION
2 PROPOSED SOUTH ELEVATION


King County
BELLEVUE STATION 9
PROJECT MANAGER
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APPROVED BY:
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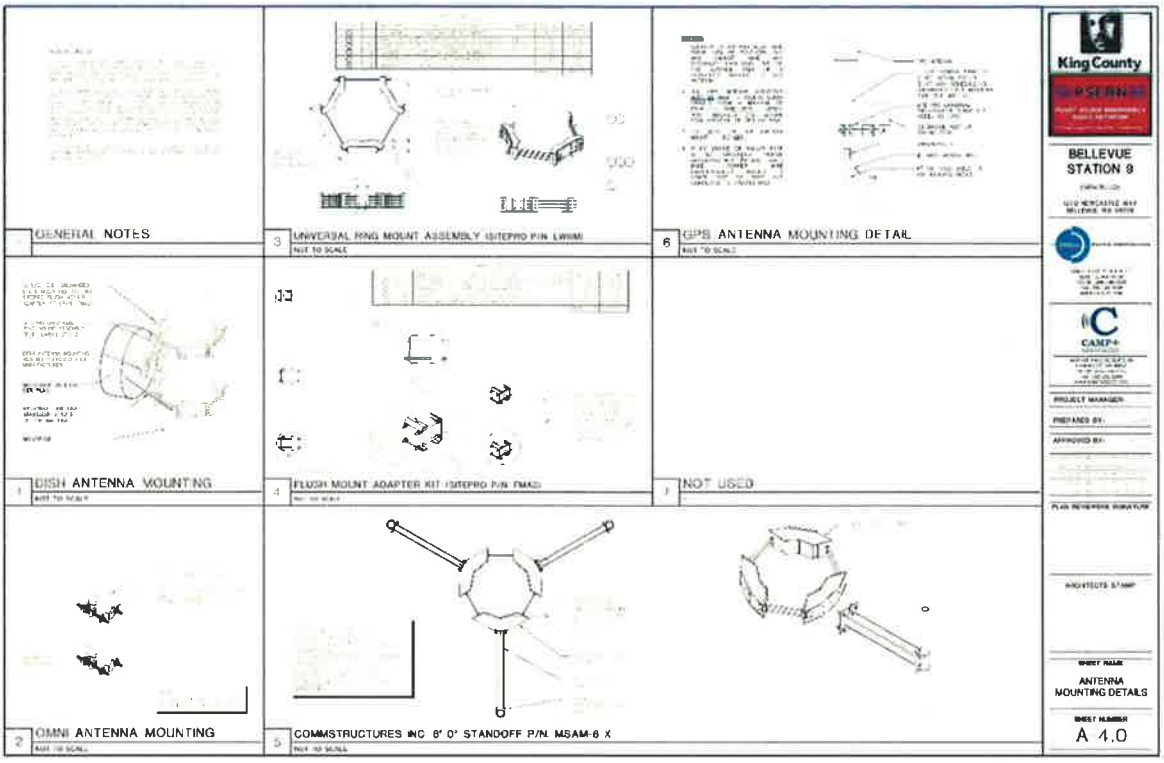
A 3.1
1 PROPOSED EAST ELEVATION
2 PROPOSED WEST ELEVATION


GENERAL NOTES
3 UNIVERSAL RING MOUNT ASSEMBLY (SITEPRO P/N: UWMM)
6 GPS ANTENNA MOUNTING DETAIL
1 DISH ANTENNA MOUNTING
4 FLUSH MOUNT ADAPTER KIT (SITEPRO P/N: FMA2)
7 NOT USED
2 OMNI ANTENNA MOUNTING
5 COMMSTRUCTURES INC 6' 0" STANDOFF P/N: MSAM-6 X
King County
BELLEVUE STATION 9
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
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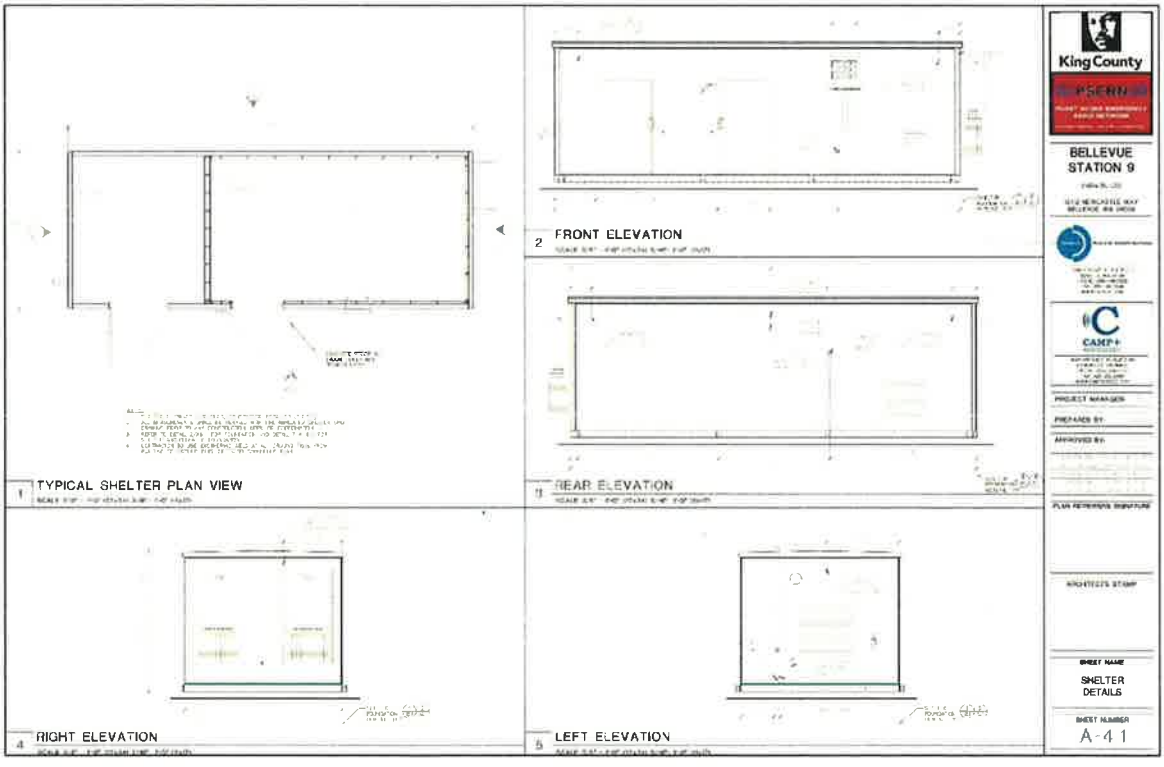
SHEET NAME
ANTENNA MOUNTING DETAILS
SHEET NUMBER
A 4.0


1 TYPICAL SHELTER PLAN VIEW
2 FRONT ELEVATION
3 REAR ELEVATION
4 RIGHT ELEVATION
5 LEFT ELEVATION
King County
BELLEVUE STATION 9
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
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SHELTER DETAILS
SHEET NUMBER
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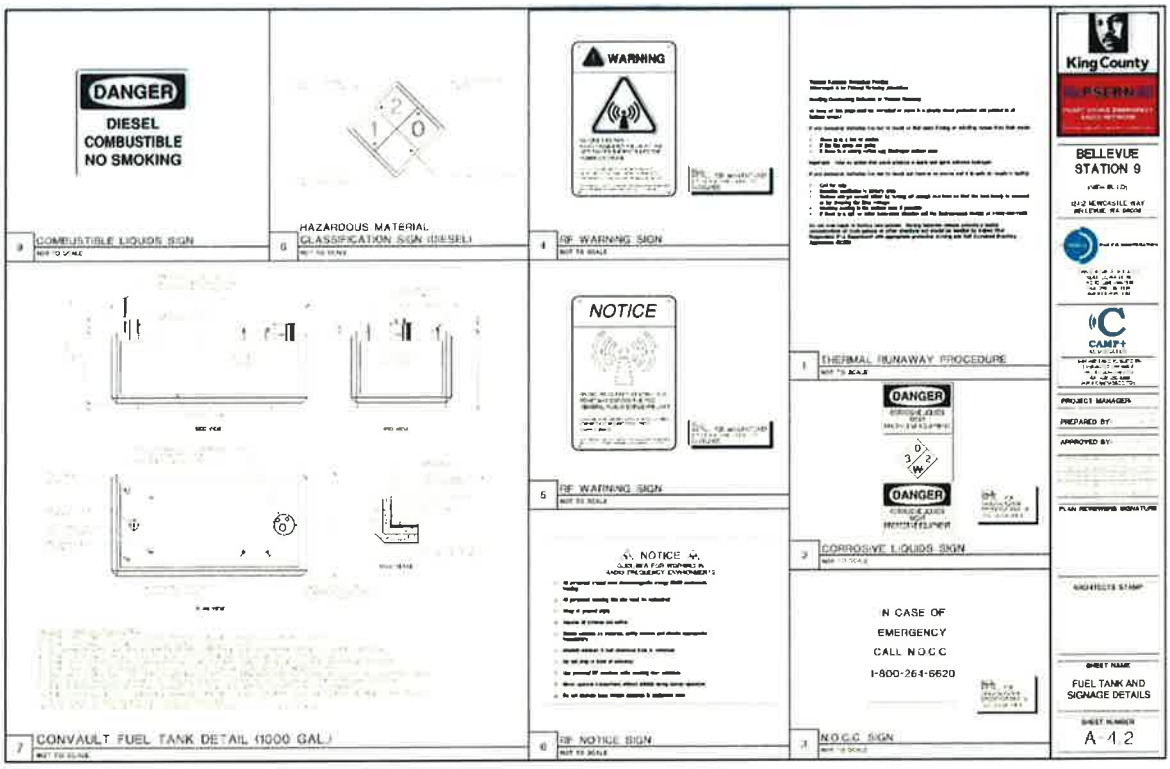
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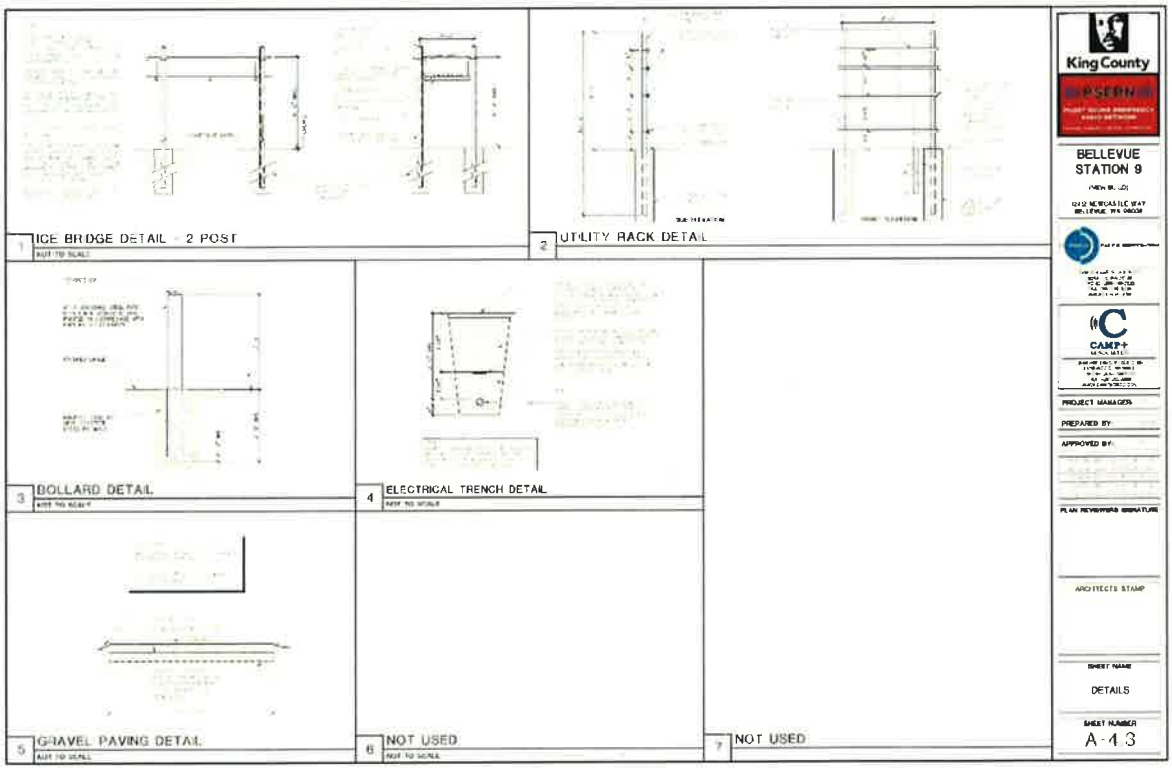
DIESEL
COMBUSTIBLE
NO SMOKING
COMBUSTIBLE LIQUIDS SIGN
HAZARDOUS MATERIAL
CLASSIFICATION SIGN (DIESEL)
WARNING
RF WARNING SIGN
NOTICE
RF WARNING SIGN
THERMAL RUNAWAY PROCEDURE
DANGER
DANGER
CORROSIVE LIQUIDS SIGN
NOTICE
RF NOTICE SIGN
IN CASE OF
EMERGENCY
CALL NOGC
1-800-264-6620
N.O.G.C. SIGN
CONVAULT FUEL TANK DETAIL (1000 GAL)
King County
BELLEVUE
STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
CAMP+
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
FUEL TANK AND
SIGNAGE DETAILS
SHEET NUMBER
A-12


ICE BRIDGE DETAIL - 2 POST
UTILITY RACK DETAIL
BOLLARD DETAIL
ELECTRICAL TRENCH DETAIL
GRAVEL PAVING DETAIL
NOT USED
NOT USED
King County
BELLEVUE
STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
CAMP+
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
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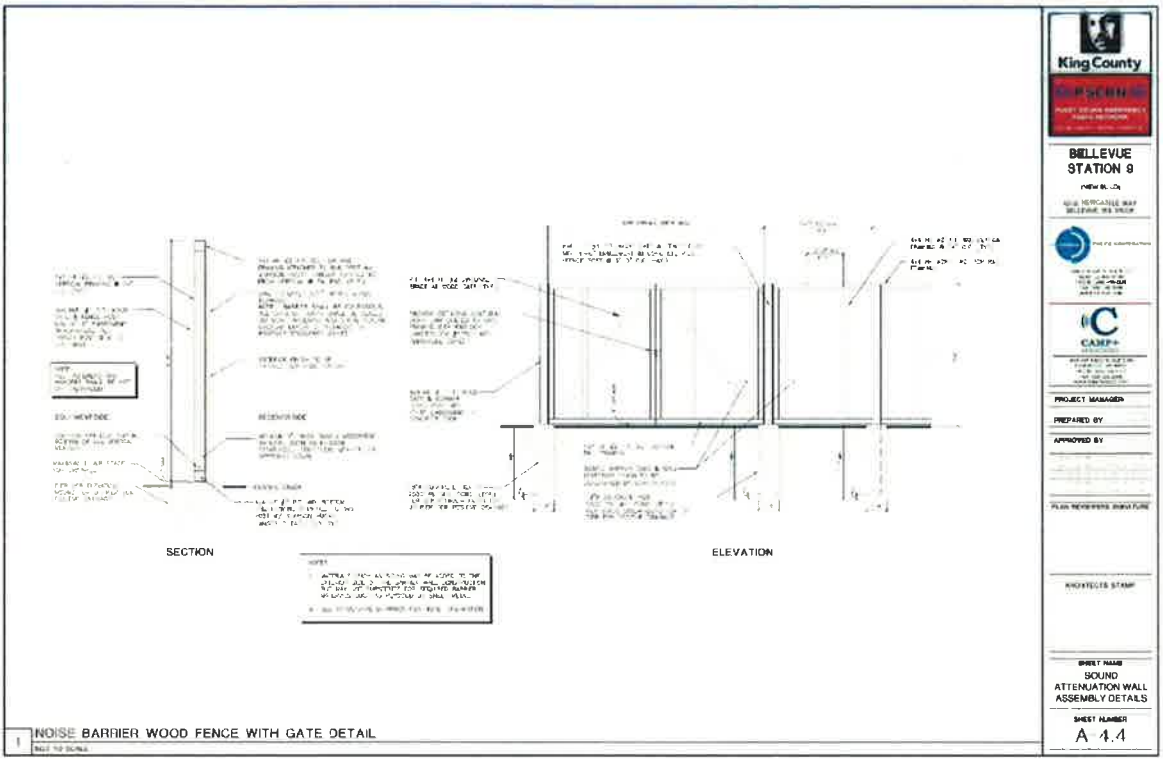
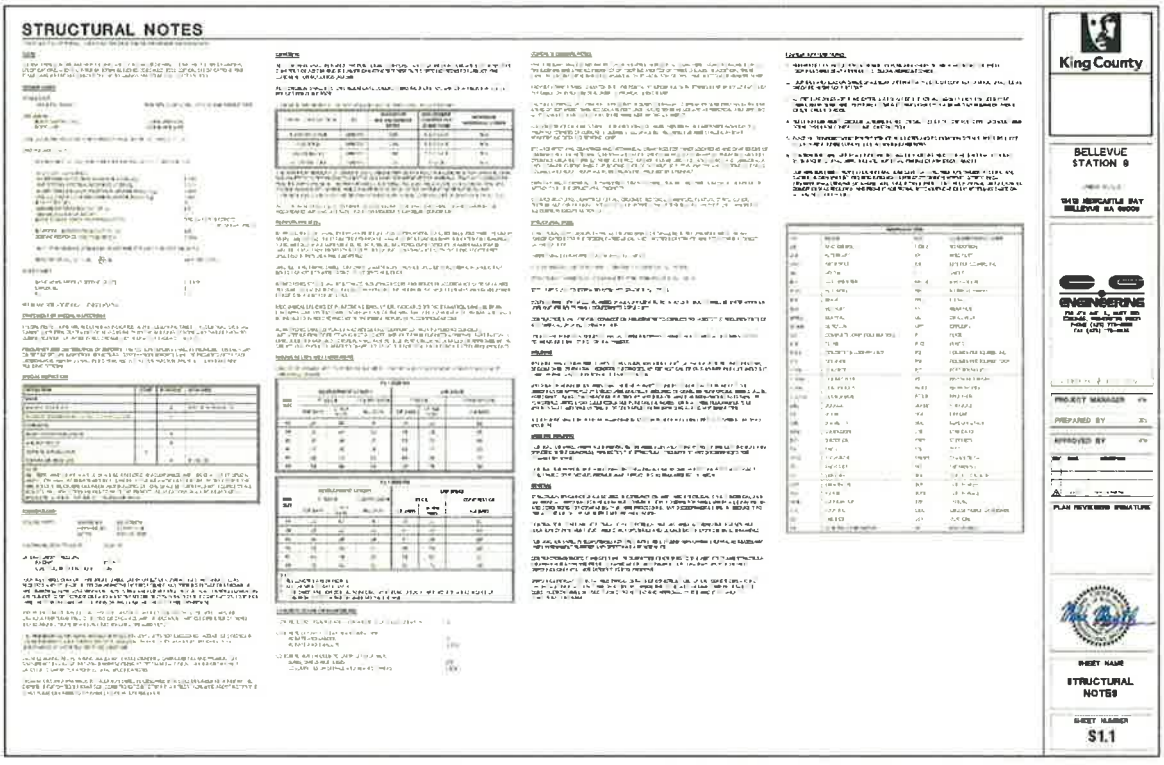
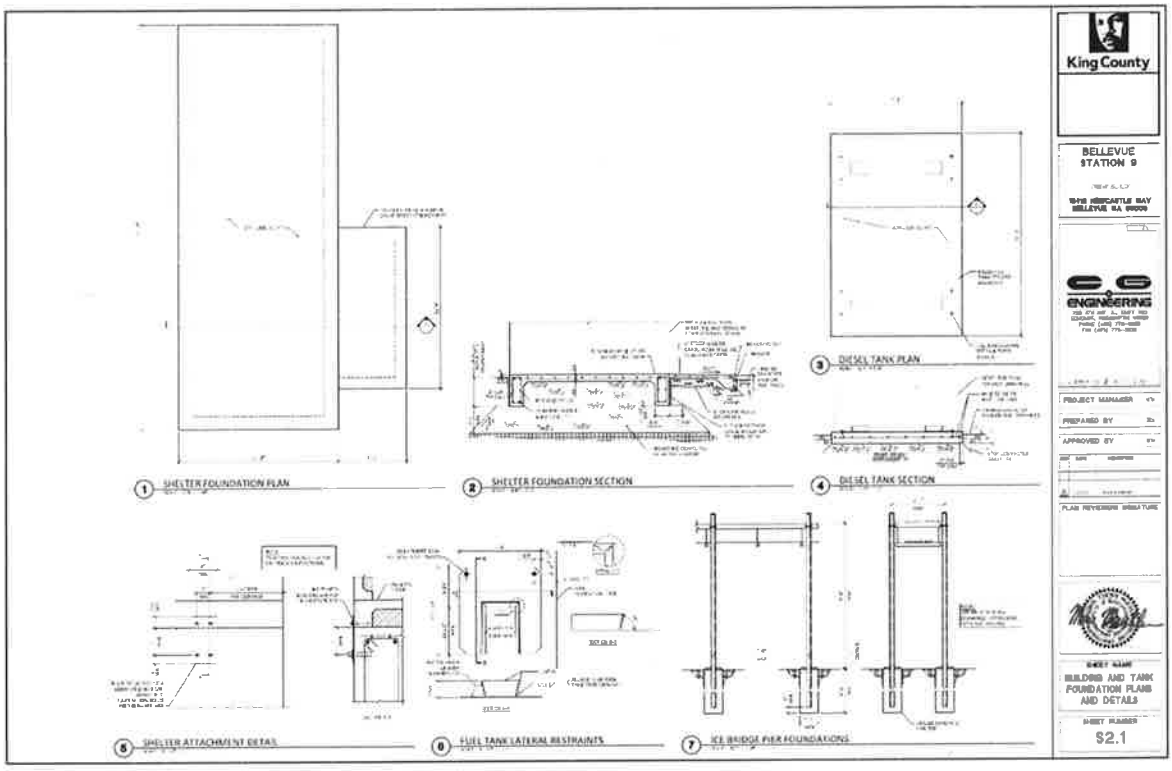
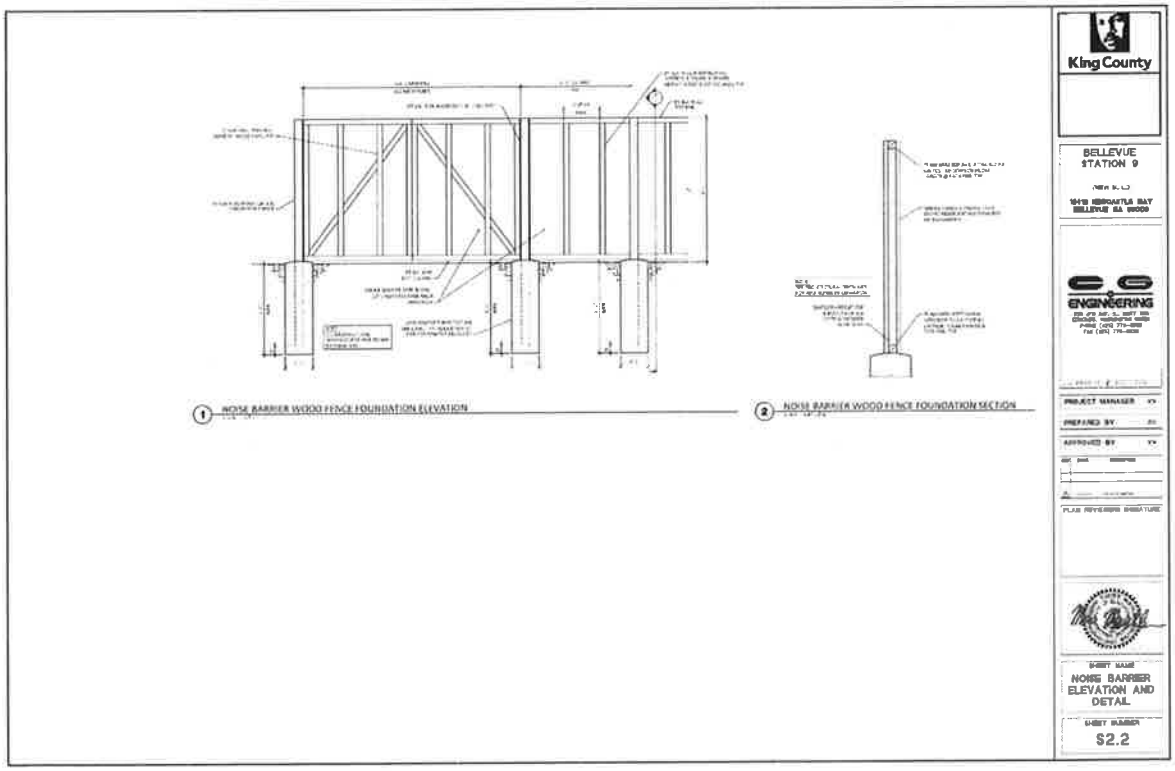
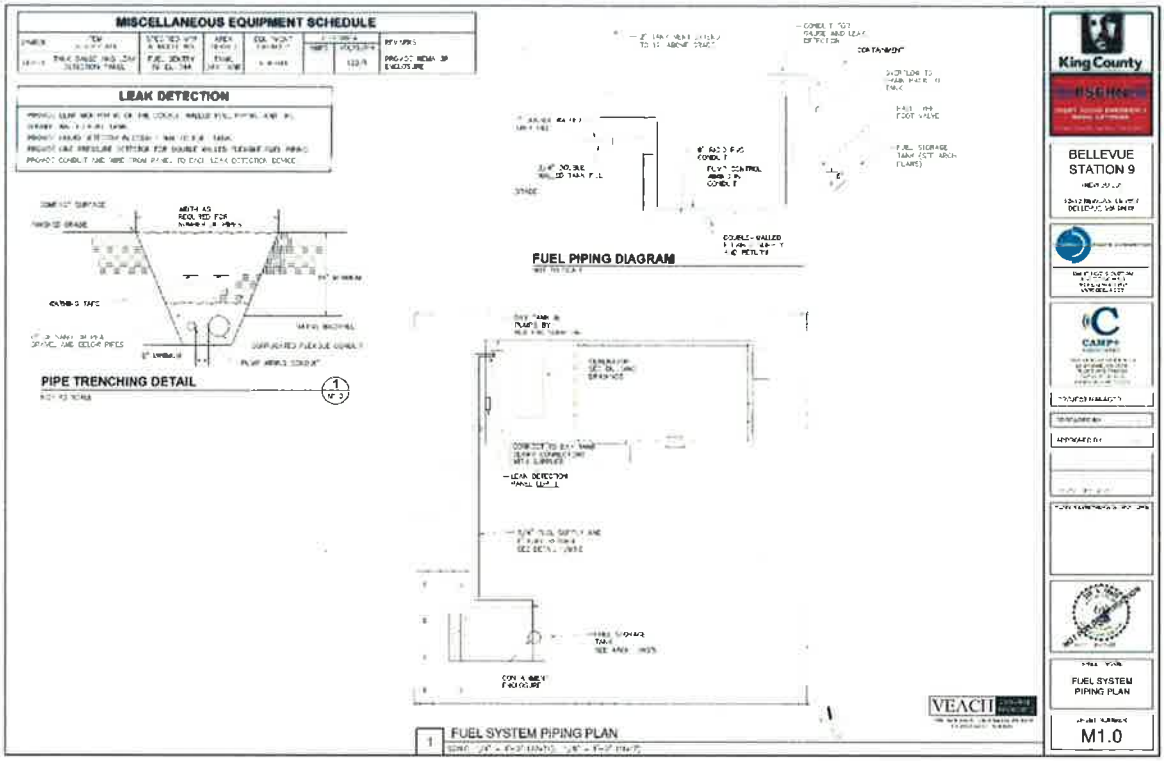
ARCHITECTS STAMP
SHEET NAME
DETAILS
SHEET NUMBER
A-13

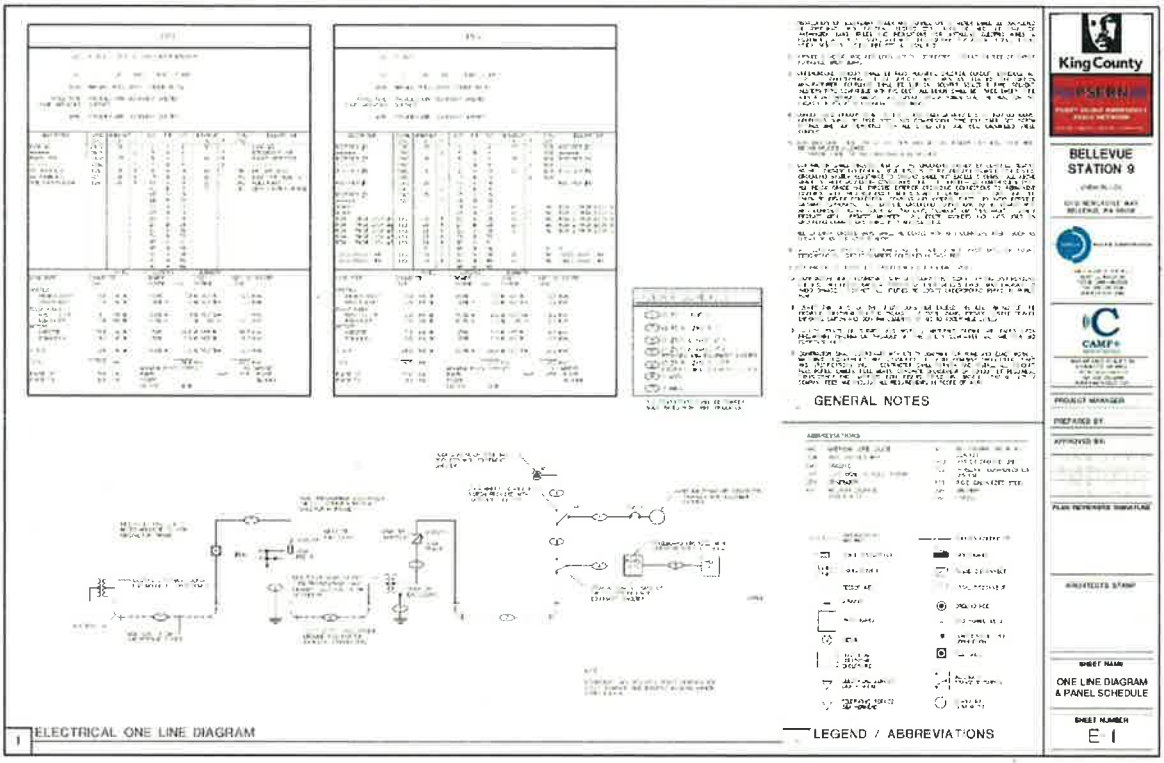

King County
BELLEVUE STATION 9
SECTION
ELEVATION
NOISE BARRIER WOOD FENCE WITH GATE DETAIL
SOUND ATTENUATION WALL ASSEMBLY DETAILS
A 4.4


STRUCTURAL NOTES
King County
BELLEVUE STATION 9
STRUCTURAL NOTES
S1.1


1 SHELTER FOUNDATION PLAN
2 SHELTER FOUNDATION SECTION
3 DIESEL TANK PLAN
4 DIESEL TANK SECTION
5 SHELTER ATTACHMENT DETAIL
6 FUEL TANK LATERAL RESTRAINTS
7 ICE BRIDGE PIER FOUNDATIONS
King County
BELLEVUE STATION 9
CG ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISION SIGNATURE
SHEET NAME
BUILDING AND TANK FOUNDATION PLANS AND DETAILS
SHEET NUMBER
S2.1


1 NOISE BARRIER WOOD FENCE FOUNDATION ELEVATION
2 NOISE BARRIER WOOD FENCE FOUNDATION SECTION
King County
BELLEVUE STATION 9
CG ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISION SIGNATURE
SHEET NAME
NOISE BARRIER ELEVATION AND DETAIL
SHEET NUMBER
S2.2


MISCELLANEOUS EQUIPMENT SCHEDULE
LEAK DETECTION
PIPE TRENCHING DETAIL
FUEL PIPING DIAGRAM
FUEL SYSTEM PIPING PLAN
King County
BELLEVUE STATION 9
FUEL SYSTEM PIPING PLAN
M1.0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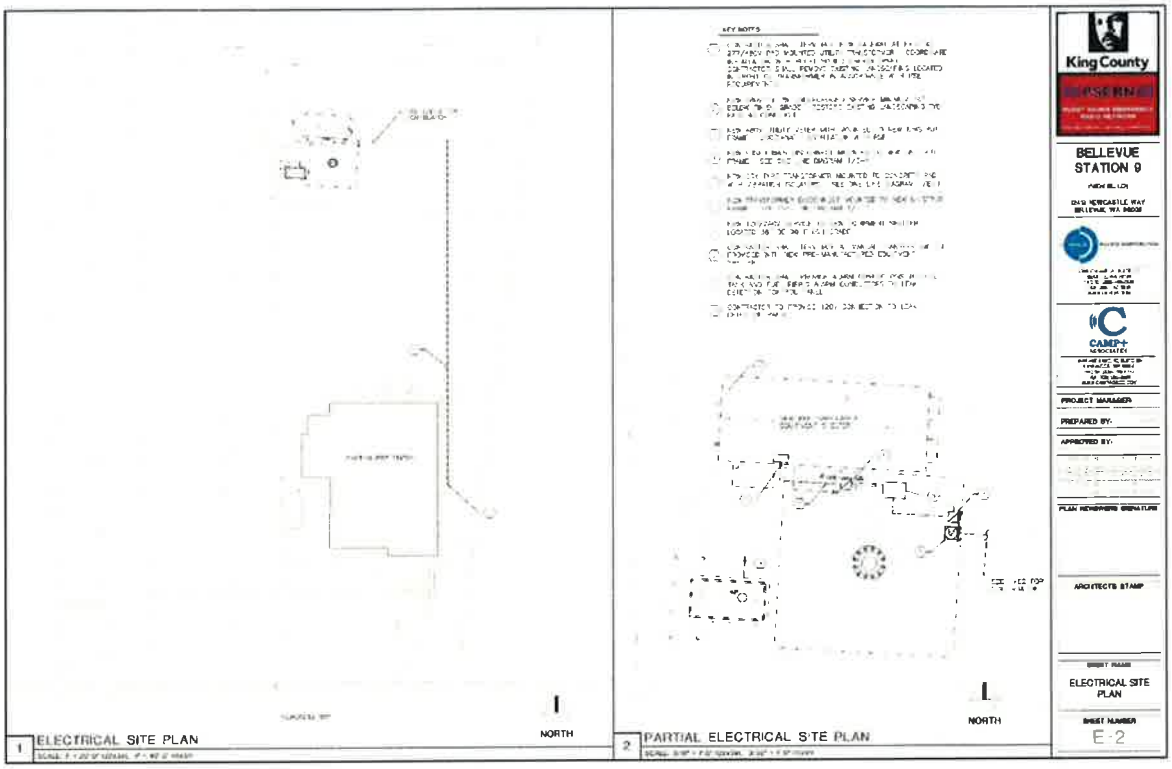
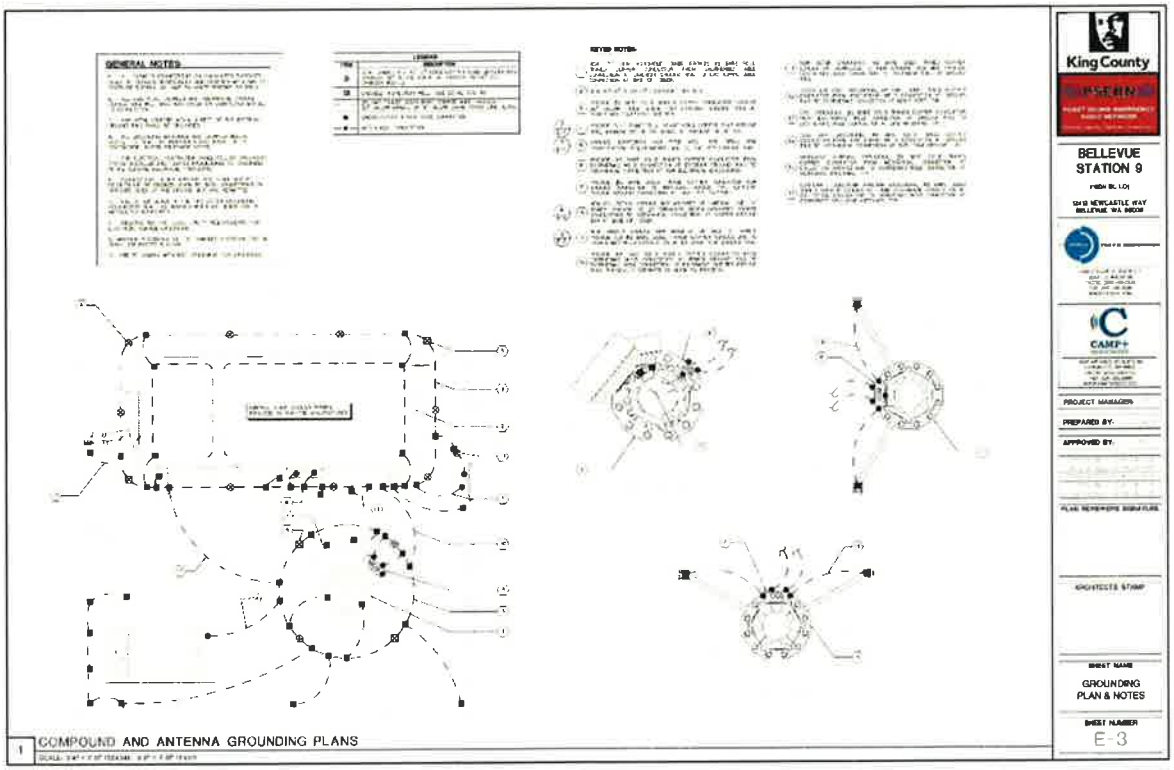
ELECTRICAL ONE LINE DIAGRAM
LEGEND / ABBREVIATIONS
King County
BELLEVUE STATION 9
ONE LINE DIAGRAM & PANEL SCHEDULE
E1


King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
ARCHITECTS STAMP
ELECTRICAL SITE PLAN
E-2
1 ELECTRICAL SITE PLAN
NORTH
2 PARTIAL ELECTRICAL SITE PLAN
NORTH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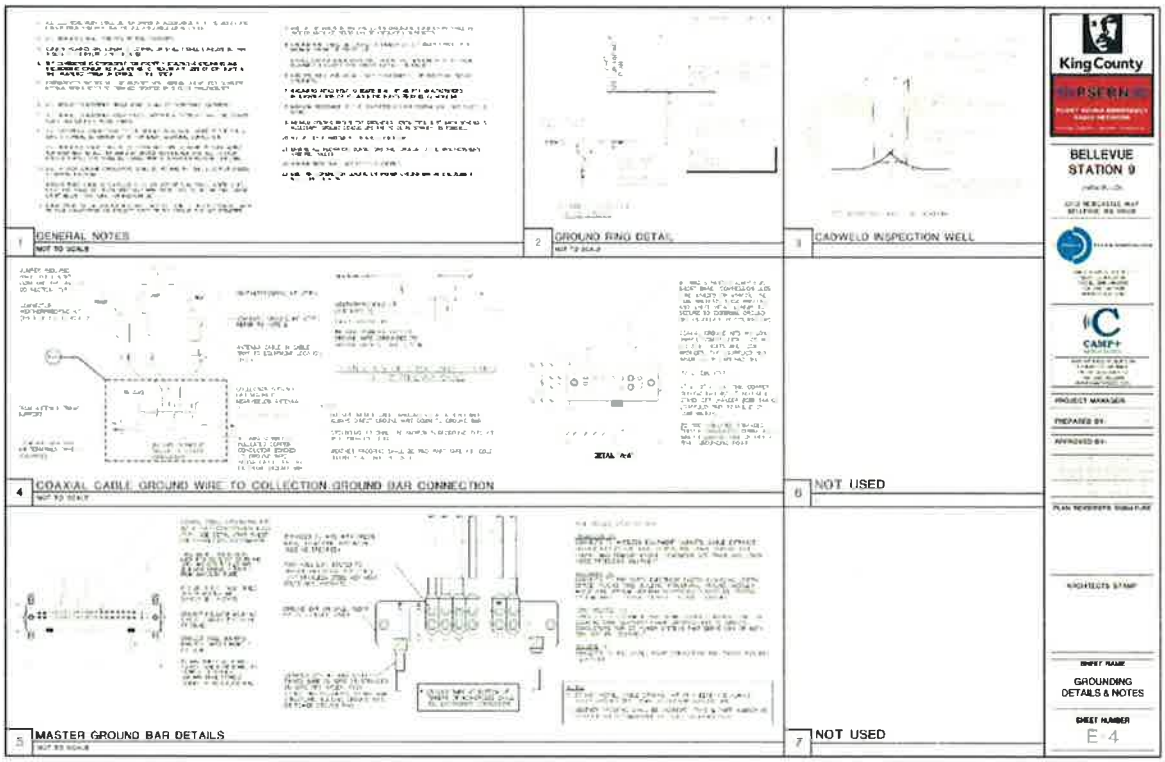
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
ARCHITECTS STAMP
GROUNDING PLAN & NOTES
E-3
1 COMPOUND AND ANTENNA GROUNDING PLANS


1 GENERAL NOTES
NOT TO SCALE
2 GROUND RING DETAIL
3 CADWELD INSPECTION WELL
4 COAXIAL CABLE GROUND WIRE TO COLLECTION GROUND BAR CONNECTION
6 NOT USED
5 MASTER GROUND BAR DETAILS
7 NOT USED
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
ARCHITECTS STAMP
SHEET NAME
GROUNDING DETAILS & NOTES
SHEET NUMBER
E 4

ATTACHMENT G
SITE JUSTIFICATION LETTER

King County
Department of
Information Technology
CNK-EX-0600
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

August 1, 2016

City of Bellevue Development Services
450 110th Avenue NE
Bellevue, WA 98004

Re: King County PSERN – Bellevue Station 9 – Site Justification Letter

Dear City of Bellevue:

This letter is being submitted to the City of Bellevue to address the following:

- Height Justification per Bellevue Land Use Code (BLUC) Section 20.20.195E.1
- Overall site justification

Project Overview

King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help during an emergency as well as help emergency responders coordinate response efforts to an emergency. The current emergency radio system is more than 20 years old and is needs to be upgraded to ensure reliability.

King County PSERN has proposed to install an emergency communications facility at the City of Bellevue Fire Station 9 property located at 12412 Newcastle Way, Bellevue, WA (Parcel No. 1951820080). PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a tower to a height of one hundred seventy feet (170') to effectively transmit and receive emergency radio communications.

Communication Objectives

The proposed facility has been located and designed to provide the best possible emergency radio coverage to a large portion of Bellevue and surrounding communities. This area is underserved by the current emergency radio network and is a known hazard to our first responders. The height and location of the proposed tower have also been maximized to provide microwave links to both Capitol Hill and NORCOM Dispatch on the top of the Bellevue City Hall. The Emergency Radio Network uses redundant microwave as our primary means of communication as microwave links are the most reliable means of communication after a major disaster: roads can buckle or break, causing fiber or other terrestrial communication to fail, but will not affect microwave; which, worse case, simply need to be realigned to restore communication. Please see the attached emergency radio coverage map and the microwave path analysis.

Alternative Sites Reviewed

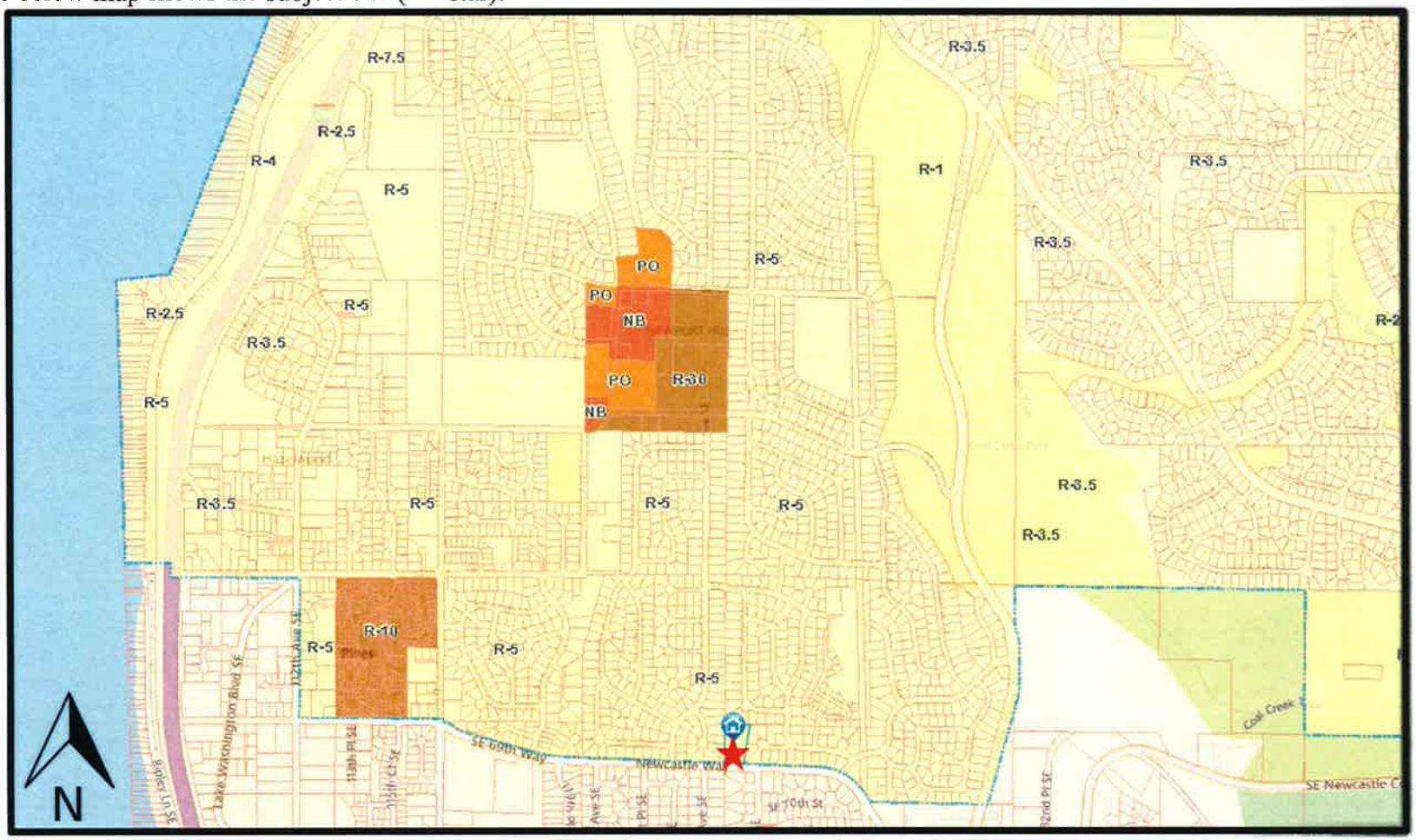
The search for an adequate site for the King County PSERN emergency communications facility in this area of King County started in June 2014. The subject area of Bellevue/Newcastle was important in the King County PSERN design due to the City of Newcastle Police Department indicating that they were experiencing coverage/communications issues in this area of Newcastle and Bellevue. The Bellevue Station 9 site location was selected due to the following:

- A facility in this location and height could provide the necessary emergency radio signal coverage to Bellevue and the surrounding areas – resolving an urgent and ongoing issue of poor communication for first responders in the immediate vicinity.
- A facility in this location and height could achieve necessary microwave links to downtown Bellevue and Capitol Hill.
- This location compared to all alternatives reviewed provided the best overall emergency communications.

The subject property (Bellevue Fire Station 9) is zoned R-5. This entire area of the City of Bellevue is zoned residential. The adjacent zoning in the City of Newcastle is also residential. The nearest non-residential zones are the Office (O) and Community Business (CB) to the east in the City of Newcastle. As mentioned below, the City of Newcastle City Hall was reviewed as an alternative but due to a tower construction moratorium was not viable.

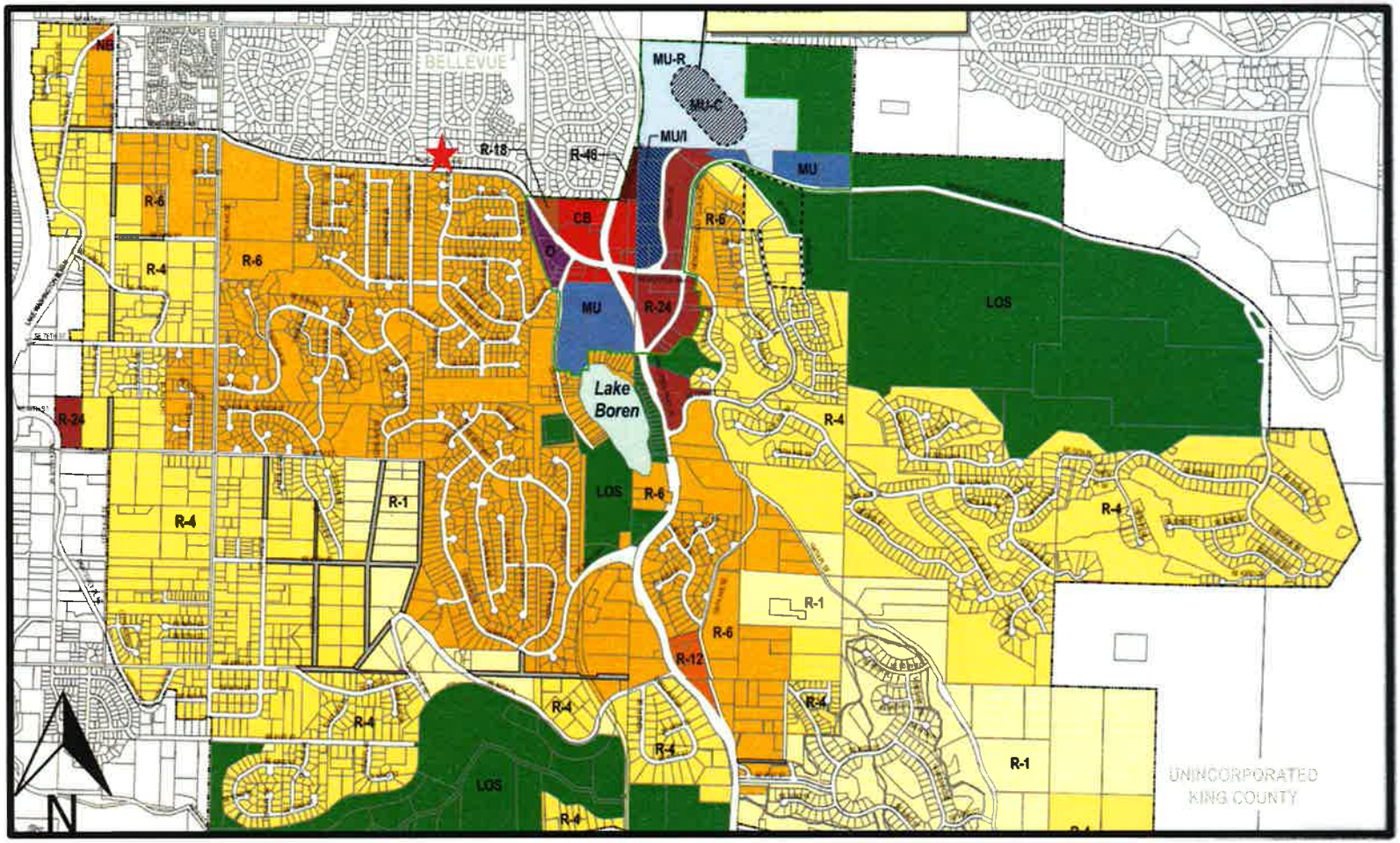
City of Bellevue – Area Zoning Map

The below map shows the subject site (red star):



City of Newcastle – Area Zoning Map

The below map shows the subject site (red star):



Aerial Map Showing Alternatives Reviewed and Locations

The below map shows the subject site (red star) and alternative sites reviewed (letters corresponded with **the below more detailed site** information):

A. **Newcastle City Hall**
12835 Newcastle Way (City of Newcastle)
Zoning: Office (O)

There was not sufficient ground space for the tower and equipment shelter due to the geometry of the parcel. Additionally, the City of Newcastle has placed a moratorium on new towers (Newcastle Ordinance #2016-535 and #2016-536). Locating the emergency communication tower within Newcastle is not possible due to the moratorium.

B. Mercer Island Fire Station 92
8473 SE 68th Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

C. Mercer Island High School
9100 SE 42nd Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

D. Mercer Island Water Tanks – Rotary Park
4350 88th Avenue SE (City of Mercer Island)
Zoning: Residential (R-9.6)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

E. T-Mobile Office Building in Factoria
3625 132nd Avenue SE
Zoning: Factoria Land Use District 3 (F-3)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Bellevue.

F. **Newcastle Golf Course**
15500 Six Penny Lane (City of Newcastle)
Zoning: Limited Open Space (LOS)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Newcastle.

G. Seattle City Light Transmission Tower (adjacent to the subject parcel)

Seattle City Light no longer allows wireless antennas above the conductors (wires) on their high-power lines. Therefore, the subject tower is not tall enough to meet our coverage or microwave requirements.

H. Various Puget Sound Energy (PSE) poles in the areas (Not shown on map)
Zoning: Varies

These sites were not considered due to the height of the distribution poles in the area. Even if they were to be extended by 100% of the existing height (which is highly unlikely) they would still not meet our coverage or microwave requirements.

I. VA Hospital
1660 S. Columbian Way (City of Seattle)
Zoning: Major Institution Overlay-105-Lowrise 3 (MIO-105-LR3)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Seattle.

J. I-405 Park & Ride
5115 113th Place SE
Zoning: Residential (R-2 and R-5)

This site location was not originally evaluated by PSERN because of its location relative to the required coverage area – this area is about 200 feet lower in elevation than the proposed location. Per the request of the neighbors during the outreach process of this application, the P&R was reviewed. It was determined that the site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from the P&R.

Height Justification

The microwave path from Bellevue Fire Station #9 to the adjacent sites: NORCOM on the top of the Bellevue city hall and Capitol Hill requires the 170' height in order to clear trees fairly close to the proposed site. These trees are approximately 120' in height and lie on terrain approximately 20' higher than the proposed height. Microwave communications is not strictly line of site, near line of site obstructions (in the Fresnel zone) affect the performance of the link. Further, the system is being engineered to perform for a 20-year life span. All of these factors taken together drive the 170' tower height. See attached microwave path survey reports for more details.

Conclusion

The Bellevue Fire Station #9 emergency radio site is critical for emergency communications coverage in the east Lake Washington area. It and the Cougar Mountain site provide the backbone of the emergency radio coverage for first responders in this area. Further, the Bellevue Fire Station #9 site link the NORCOM and Capitol Hill sites, providing a critical link in the microwave chain linking the emergency radio network. Without the Bellevue Fire Station #9 site, we will not be able to provide the level of emergency radio coverage to the first responders that rely on communication in the field in the greater southern Bellevue area.

Respectfully.

David Mendel
Project Director
King County
David.mendel@kingcounty.gov

ATTACHMENT H
RF EMISSIONS RESPONSE LETTER

Andrew H. Thatcher
www.rfthatcher.com

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

Site Address:
12412 Newcastle Way
Bellevue, WA 98006

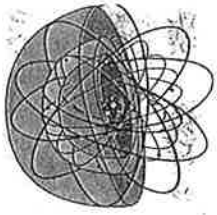
Site Name:
Puget Sound Emergency Radio Network
Bellevue Station 9

Prepared for:
Odelia Pacific Corp.

February 2, 2017

Prepared By:
Andrew H. Thatcher, MSHP, CHP

Andrew H. Thatcher, MSHP, CHP
Environmental & Occupational Health Physics



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Introduction

This report details the results of the ground level analysis of the emissions created by the antennas located on a Puget Sound Emergency Radio Network (PSERN) Bellevue Station 9 site at 12412 Newcastle Way Bellevue WA 98006. In addition to the contributions from the proposed PSERN antennas, the analysis will include the contributions from a Sprint base station located on a nearby Seattle City Light transmission and a T-Mobile base station located about 660' away on Newcastle Way.

Summary of Findings

Based on a calculation specified by the Federal Communication Commission, the maximum level of public exposure to RF signal from the proposed antennas will be a fraction of FCC exposure limits. Specifically, the maximum ground level predicted exposure is 0.023 mW/cm² or 2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123 Ave SE and Newcastle Way. The maximum contribution from the proposed PSERN site is 0.0027 mW/cm².

Technical Data

This report is based on engineering data for the project provided by S. Telschow of Odelia Pacific Corp. No other RF transmitting facility is within 2,000 feet of the proposed facility. The proposed facility consists of a RFI Wireless CC807 series antennas transmitting at 90' in height and a pair of microwave transmitters transmitting in different directions at heights of 165' and 160'. The antennas are the Commscope VHLP3-11W-6WH/A (160') and the Commscope HPX4-107-P3A/B at 165'. Note that the input power used for the RFI antenna was the 500 W maximum input power recommended by the manufacturer with a coax line loss of 1.7 dB included. The input power for the microwave antennas was assumed to be 1 W with the respective gains included in the EIRP calculations.

Sprint data for their Clearwire site near 12412 Newcastle Way on the Seattle City Light was provided by S. Gerdts, RF engineer for Sprint on 2/2/2017. The existing antenna is a Kathrein KAT87DEGXXPOL and operates at 2600 MHz. Data for this older antenna is no longer available so an antenna with similar propagation characteristics was selected (Commscope DBXLH-8585B-VTM). The T-Mobile antenna is located at the corner of 123rd Ave SE and Newcastle Way. T-Mobile data was provided by F. Morton, RF Engineer for T-Mobile on 2/1/2017. The T-Mobile antenna used is a TMBXX-6516-R2M and operates at the 2100 MHz and 1900 MHz frequencies. Details on the power levels used and antenna height is provided in Table 1.

Basis of Calculations

Equation 6 of OET Bulletin 65[1] is used as the basis for the calculations as it considers a truly upper limit prediction of power density in an outdoor environment in which 100% of incoming

[1] Federal Communications Commission Office of Engineering and Technology. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 65. 1997.

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radiation is assumed to reflect off a ground surface, resulting in a doubling of the predicted field strength and a four fold increase in power density. The signal levels inside buildings will be substantially lower than those calculated using the FCC model because of the substantial absorption of RF energy by building materials.

The calculation used the formula from OET Bulletin 65:

$$S = [EIRP] / [\pi \cdot D^2]$$

WHERE:
S = Power density (mW/cm²)
EIRP = Effective isotropic radiated power (mW).
D = Hypotenuse distance (cm)

The EIRP varies with direction with respect to the main beam due to the antenna beam pattern. For the calculations presented here, the beam pattern was obtained from the manufacturer of the antenna. In instances where the exact radiation pattern envelope was not available, professional judgment was used and a suitable replacement antenna's characteristics were substituted.

Ground Level Exposures

Table 1 shows the calculated Maximum Permissible Exposure (MPE) at 6' above ground level assuming all antennas operating at 100% and complete ground reflection. Note that only a single antenna from the proposed PSERN site can contribute to exposure at a given location and, as noted in the table below, the contribution from a microwave dish to a person at ground level is very low. The predicted maximum exposure is 0.021 mW/cm² or 2.3% of the FCC general public exposure limit. This location is about 60' away from the existing T-Mobile at the corner of 123rd Ave SE and Newcastle Way as the signal from the T-Mobile site dominates the background for the area. The maximum contribution from the PSERN antennas is 0.0027 mW/cm² approximately 60' from the proposed tower. Table 1 also provides the combined input power for each frequency band.

Table 1: Calculated Ground Level Power Density

Site Name:	PSERN Bellevue Station					
Location	Azimuth ~350 degrees					
Carrier Type	Worst Case ERP (watts)	Worst Case ERP (dBm)	Antenna Height (ft)	Maximum outdoor exposure (with ground reflection) (mW/cm²)	% of Standard	General Population Exposure Limit (mW/cm²)
RFI 800 MHz Collinear Ant	2048	63.11	90	2.45E-03	0.46%	0.533
Commscope VHLP3-11W-6WH/A	1221	60.87	160	4.65E-07	0.00%	1.000
Sprint 2600 MHz	604	57.81	108	9.11E-05	0.01%	1.000
T-Mobile 2100 MHz	3666	65.64	50	1.23E-02	1.23%	1.000
T-Mobile 1900 MHz	3666	65.64	50	5.76E-03	0.58%	1.000
			Total	2.06E-02	**2.28%**	

Discussion

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

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

For further information The Federal Communications Commission (FCC) maintains a World Wide Web site at http://www.fcc.gov. A general information sheet about possible health and safety issues regarding radiofrequency energy is at: http://www.fcc.gov/oet/rfsafety/cellpcs.html.

Conclusions/Recommendations

The maximum ground level predicted exposure is 0.023 mW/cm² or 2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123 Ave SE and Newcastle Way. The maximum contribution from the proposed PSERN site is 0.0027 mW/cm².

Certification

I hereby certify the following:

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

Regards,

Andrew H. Thatcher, MSHP, CHP

LEGEND

★ Subject Property

Andrew H. Thatcher
www.rfthatcher.com

Responses to Follow up Questions Regarding Proposed PSERN Bellevue Station 9

Site Address:
12412 Newcastle Way
Bellevue, WA 98006

Prepared for:
Odelia Pacific Corp.

February 2, 2017

Prepared By:
Andrew H. Thatcher, MSHP, CHP

Andrew H. Thatcher
www.rfthatcher.com

Question 4. Were any baseline RF emission measurements recorded before other tower projects were constructed? If not, why was this not done?

Response: No RF baseline measurements were conducted prior to installation of this site. Following the guidance of FCC OET Bulletin 65[1], compliance for a given site may be performed through either direct measurements or via prediction methods as outlined in OET 65. A report calculating the RF emissions from this site was prepared by A.H. Thatcher in February 2017.

Question 5. Will this site have any pre-construction RF emission measurements?

Response: No, the site will not have any pre-construction RF emission measurements. Following the guidance of FCC OET Bulletin 65[2], compliance for a given site may be performed through either direct measurements or via prediction methods as outlined in OET 65. A report calculating the RF emissions from this site was prepared by A.H. Thatcher in June, 2016.

Question 10. What is the impact of RF emissions on bats, birds, and other mammals?

Response:
Regarding potential effects on wildlife, it is important to note that many of the studies of interest to humans are based upon the results of animal studies. Included below are some of the conclusions from the United Kingdom's Health Protection Agency's most recent report[3]:

> Studies with animals have proved highly useful for investigating whether exposure to the RF fields associated with mobile phones can cause health effects. Many new studies have been published since the previous review by AGNIR in 2003 and these have employed a wide range of biological models, exposure levels and signal modulations. There is no clear evidence of harmful effects with exposures below guideline values, although some studies have reported subtle biological changes, often following single, acute exposures. It is noteworthy that several large-scale studies investigating the initiation and development of cancer have all been robustly negative, and a similar lack of effect has been seen regarding auditory function.

To support the conclusion that RF exposure does not affect reproduction and development, included below is an excerpt from the SCENIHR 2015[4] review:

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[1] Federal Communications Commission Office of Engineering and Technology. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 65. 1997.

[2] Federal Communications Commission Office of Engineering and Technology. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 65. 1997.

[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/333080/RCE-20_Health_Effects_RF_Electromagnetic_fields.pdf Accessed 1/5/2017

[4] Scientific Committee on Emerging and Newly Identified Health Risks. Potential health effects of exposure to electromagnetic fields. 2015
https://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_041.pdf Accessed 1/5/2017

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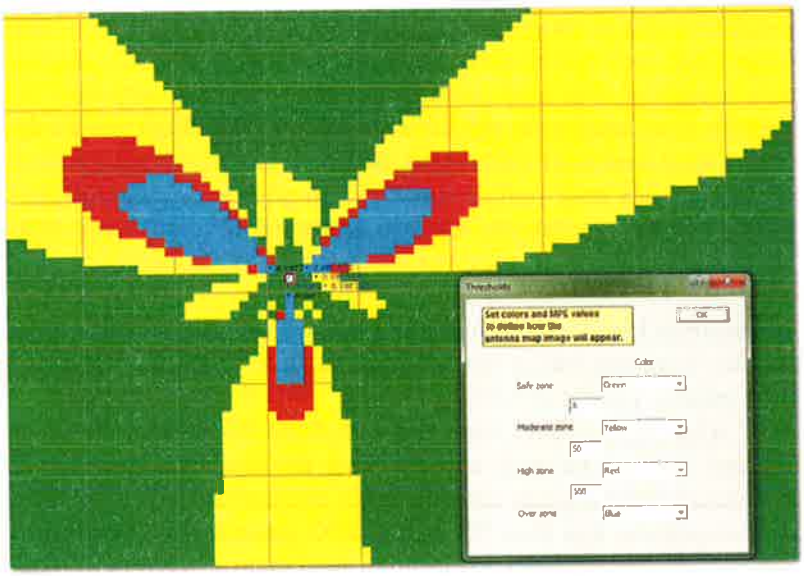
Most recent studies investigating effects on pregnancy outcome and development of the offspring have been large and well conducted, and so can provide very useful information. These studies found that low level prenatal and early postnatal exposure to a variety of RF signals was not associated with any adverse outcome, although one study suggested early postnatal exposure increased maturity in male rats, and another suggested long-term, low level exposure of rats may reduce survival. In addition, no significant effects were seen following almost continuous lifetime exposure of mice over four generations.

Finally, regarding the potential exposure to birds nesting in the top hat area of a base station (see image below as a worst case example - note that this is not Bellevue Station 9). Birds nesting in the area behind the antennas are virtually unexposed while nesting. To illustrate this point I modeled a typical cellular "top hat" with three sectors using three separate frequencies for each sector. I used 2' as the projected arm distance for each antenna from the center. Figure 2 is a color coded vertical view of the exposure from a given antenna at the level of the antennas. The green color in the center represents exposures less than 5% of the FCC general public exposure limit. The calculated power density at this centroid location is less than 1 $\mu W/cm^2$. This exposure is ~0.07% of the FCC general public exposure limit. The calculations were made using the RoofView© program obtained from Richard Tell Associates.[5]

The exposure of the birds flying to/from the tower is not calculated as the exposure duration for each flight (in close proximity to the front of the antennas) would be on the order of seconds and would therefore never amount to a meaningful exposure.

Figure 1: Image of a typical cellular "top hat" (NOT Bellevue Station 9)

[5] Richard Tell Associates, RoofView and RoofView User Guide, version 4.15. January 2011.



Question 11. What scientific evidence can be provided to indicate safety for these creatures?

Response: Please see the above referenced quotes to Question 10.

Regards,

Andrew H. Thatcher, MSHP, CHP

ANDREW H. THATCHER
CERTIFIED HEALTH PHYSICIST
ABHP
AMERICAN BOARD OF HEALTH PHYSICS

ATTACHMENT I
STAMPED FLAMMABILITY LETTER

valmont
STRUCTURES

February 6, 2017

City of Bellevue
450 110th Ave. NE
P.O. Box 90012
Bellevue, WA 98009

Subject: **170-ft Monopole - Likelihood of Catching Fire**
Site Name: Bellevue Station, WA
Valmont Order No.: 324543

The purpose of this letter is to dispell any concerns that the local jurisdiction and/or the public may have about the tapered steel monopole captioned in the subject line catching fire.

The MSDS for the steel used in the fabrication of our monopoles lists the flash point as N/A, the auto ignition temperature as N/A, and the upper & lower flammable limits in air as N/A; also that there are no fire and/or explosion hazards. Therefore the steel monopole, with steel having a melting point of 2,750° F, does not have a flash point temperature that would cause it to ignite.

The MSDS for zinc, that is used to galvanize our steel monopoles lists the melting point of zinc at 787° F and states that there is no fire hazard for solid metal.

Due to the non-flammability of the steel and zinc, the monopole itself presents no risk of catching fire under normal operating circumstances.

We hope these comments address the issues that you might encounter relative to the flammability of our monopole structures. If you have additional questions or comments please call me at (503)-589-6626.

Sincerely,

Nathan Ross, EIT
Associate Engineer

FEB 06 2017

JEFFREY E. GRASSMAN
STATE OF WASHINGTON
33983
REGISTERED
PROFESSIONAL ENGINEER

Valmont Microflect, LTCS, Valmont Industries, Inc.
3575 25th Street Salem, OR 97302-1123 USA
Toll Free: 800-547-2151 Fax: 503-316-2040 www.valmont.com

ATTACHMENT J
SEATTLE CITY LIGHT LETTER

700 5th Ave, Suite 3200 | P.O. Box 34023 | Seattle WA 98124-4023
TEL (206) 684-3000 TTY/TDD (206) 684-3225 FAX (206) 625-3709
seattle.gov/light
twitter.com/SEACityLight facebook.com/SeattleCityLight

Seattle City Light

February 13, 2017

City of Bellevue
450 110th Ave. NE
P.O. Box 90012
Bellevue, WA 98009

Re: Letter of Consent for the King County PSERN – Bellevue Station 9 project

Dear City of Bellevue Staff:

Please accept this letter from Seattle City Light (SCL) acknowledging the proposed King County Puget Sound Emergency Radio Network (PSERN) tower installation at the Bellevue Station 9 fire station located at 12412 Newcastle Way Bellevue, WA.

King County PSERN provided SCL a copy of the proposed plans which indicate that no work is planned to be within SCL's adjacent transmission easement area. King County PSERN has indicated that they will coordinate directly with SCL if changes occur during construction that could that impact SCL's easement area.

SCL has no issues and/or concerns with the proposed King County PSERN facility and associated tower.

Thank you,

Doug Haberman
Wireless Communications Program Manager

An equal employment opportunity, affirmative action employer. Accommodations for people with disabilities provided upon request.
Printed on recycled paper made from 100% post-consumer waste fiber.

ATTACHMENT K
ALTERNATE SITES ANALYSIS

A. Newcastle City Hall
12835 Newcastle Way (City of Newcastle)
Zoning: Office (O)

There was not sufficient ground space for the tower and equipment shelter due to the geometry of the parcel. Additionally, the City of Newcastle has placed a moratorium on new towers (Newcastle Ordinance #2016-535 and #2016-536). Locating the emergency communication tower within Newcastle is not possible due to the moratorium.

B. Mercer Island Fire Station 92
8473 SE 68th Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

C. Mercer Island High School
9100 SE 42nd Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

D. Mercer Island Water Tanks – Rotary Park
4350 88th Avenue SE (City of Mercer Island)
Zoning: Residential (R-9.6)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

E. T-Mobile Office Building in Factoria
3625 132nd Avenue SE
Zoning: Factoria Land Use District 3 (F-3)
This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Bellevue.

F. Newcastle Golf Course
15500 Six Penny Lane (City of Newcastle)
Zoning: Limited Open Space (LOS)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Newcastle.

G. Seattle City Light Transmission Tower (adjacent to the subject parcel)

Seattle City Light no longer allows wireless antennas above the conductors (wires) on their high-power lines. Therefore, the subject tower is not tall enough to meet the PSERN coverage or microwave requirements.

H. Various Puget Sound Energy (PSE) poles in the areas (not shown on map)
Zoning: Varies

These sites were not considered due to the height of the distribution poles in the area. Even if they were to be extended by 100% of the existing height (which is highly unlikely) they would still not meet our coverage or microwave requirements.

I. VA Hospital
1660 S. Columbian Way (City of Seattle)
Zoning: Major Institution Overlay-105-Lowrise 3 (MIO-105-LR3)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Seattle.

J. I-405 Park & Ride (P&R)
5115 113th Place SE
Zoning: Residential (R-2 and R-5)

This site location was not originally evaluated by PSERN because of its location relative to the required coverage area – this area is about 200 feet lower in elevation than the proposed location. Per the request of the neighbors during the outreach process of this application, the P&R was reviewed. It was determined that the site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from the P&R.

CITY OF BELLEVUE

MyBuildingPermit.com

Land Use Application #350825 - King County PSERN - Bellevue Station 9

Applicant

First Name	Last Name	Company Name
Sarah	Telschow	Odelia Pacific Corporation

Number	Street	Apartment or Suite Number	E-mail Address
5506	6th Avenue South	202	stelschow@odelia.com

City	State	Zip	Phone Number	Extension
Seattle	WA	98108	(206) 979-6268	

Contractor

Company Name

Number Street Apartment or Suite Number

City State Zip Phone Number Extension

State License Number License Expiration Date UBI # E-mail Address

Project Location

Number	Street	Floor Number	Suite or Room Number
12412	NEWCASTLE WAY		

City	Zip Code	County Parcel Number
BELLEVUE	98006	1951820080

Associated Building Permit Number Tenant Name

Additional Information (i.e. equipment location or special instructions).

Work Location

Property Owner

First Name	Last Name or Company Name
*	BELLEVUE FIRE DEPARTMENT

Number	Street	Apartment or Suite Number
766	BELLEVUE WAY SE	

City	State	Zip
BELLEVUE	WA	98004

Certification Statement - The applicant states:

I certify that I am the owner of this property or the owner's authorized agent. If acting as an authorized agent, I further certify that I have full power and authority to file this application and to perform, on behalf of the owner, all acts required to enable the jurisdiction to process and review such application. I have furnished true and correct information. I will comply with all provisions of law and ordinance governing this type of application. If the scope of work requires a licensed contractor to perform the work, the information will be provided prior to permit issuance.

Date Submitted: 8/5/2016 **Submitted By:** Sarah Telschow

LEGAL DESCRIPTION

PROJECT NAME: King County PSERN – Bellevue Station 9

PROJECT ADDRESS: 12412 Newcastle Way

PROJECT A.P.N.#: 1951820080

Tract A, Del Mar Woods, Division No. 4, according to the Plat thereof recorded in Volume 96 of Plats, Page(s) 38 and 39, records of King County, Washington.

To Whom This May Concern:

Re: Agent Authorization

This letter is to confirm that King County PSERN and their authorized agent Odelia Pacific Corporation are hereby authorized to submit applicable land-use and/or building permit applications on behalf of King County PSERN on the Bellevue Fire District property located at 12412 Newcastle Way Bellevue, Washington (Tax Parcel 1951820080).

Patti M. Ebert
Print Name

Sr. Real Property Agent
Print Title

City of Bellevue
Print Company Name

Patti M. Ebert
Signature

6/30/15
Date

PROJECT NARRATIVE

INTRODUCTION

King County Puget Sound Emergency Radio Network (here after referred to as "King County PSERN") is a project that will replace/upgrade the existing aging emergency radio communications system. The emergency radio communications network is used to reach and coordinate with emergency responders.

This proposal describes the scope of the proposed project by providing specific information regarding the project location, zoning, specifications, and required services.

It is King County PSERN's desire to work with the City of Bellevue to ensure that this project is consistent with local ordinances and zoning regulations while providing critical communication services for emergency services.

GENERAL PROJECT DESCRIPTION

Project Overview

The applicant, King County PSERN, proposes to construct a 170' tower and associated equipment shelter at the Bellevue Fire Station No. 9 located at 12412 Newcastle Way Bellevue, Washington (Parcel Number 1951820080). King County PSERN intends to achieve these network goals consistent with all policies and ordinances of the City of Bellevue.

Application Request Plan

The applicant is requesting the following:

- Conditional Use Permit (CUP) approval
- State Environmental Policy Act (SEPA) approval
- Clearing and Grading Permit approval
- Mechanical Permit approval
- Commercial Building Permit approval

GENERAL PROJECT DESCRIPTION

Project Overview

King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help during an emergency as well as help first responders such as police officers, fire fighters, and emergency medical staff coordinate response efforts to an emergency.

King County PSERN, hereafter referred to as PSERN, is proposing to install an emergency communications facility at the City of Bellevue Fire Station 9 property located at 12412 Newcastle Way, Bellevue, WA (Parcel No. 1951820080). PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a monopole to a height one hundred seventy feet (170') to effectively transmit and receive emergency radio communications.

Facility Specifications

- Antennas - PSERN is proposing to attach four (4) omni antennas to the proposed tower. Please see Sheet A-2.1 for more detailed information.

- Color - The tower and all proposed and future antenna/attachments shall be painted Sherwin Williams Rock Garden (SW6195) using a non-reflective finish. Please see the enclosed tower color sample for more detailed information. The equipment building and fencing will be painted to match the fire station. Please see the photo simulations for more detailed information.

- Equipment Building - The equipment will house all of PSERN's equipment and will meet all applicable noise standards. Please see the enclosed acoustical report.

- Fencing - A wood fence has been proposed to provide additional screening and noise abatement. The fence will be painted to match the fire station building. Please see Sheet A-2.0 and A-4.4 for more detailed information.

- Generator - PSERN is proposing a 50kw generator with a one thousand (1,000) gallon diesel tank for emergency back-up power. The proposed generator will be located within the proposed equipment building. The generator will meet all applicable noise standards. Please see the enclosed acoustical report.

- Landscaping - A landscaping plan has been proposed for this site. A twenty-foot (20') landscape buffer to the north and east and ten-foot (10') buffer to the south. Please see Sheet L-1 for more detailed information.

- Microwave Dishes - PSERN is proposing to attach two (2) microwave dishes to the proposed tower. Please see Sheet A-2.1 for more detailed information.

GENERAL SITE ANALYSIS

Zoning General Plan Designation

The site is zoned Residential 5 (R-5). The proposed Emergency Communication Facility requires the review and approval of a Conditional Use Permit (CUP) according to Bellevue Land Use Code (BLUC) Section 20.20.195.C.1c:

> Review of Nonexempt Wireless Communication Facilities.
>
> WCF that do not satisfy the criteria of subsection B of this section shall require either a Conditional Use Permit or an Administrative Conditional Use Permit, as described below. Such WCF shall meet the criteria described in subsection D of this section.
>
> 1. Facilities Requiring Conditional Use Approval. A Conditional Use Permit is required for:
>
>   a. Any WCF proposed in the public right-of-way within a residential land use district, where the WCF is proposed within 520 feet of any other WCF located either in the public right-of-way or on property owned by the City of Bellevue. For purposes of measuring distance between WCF, WCF serving public emergency communication functions and WCF operated by and supporting City of Bellevue functions shall not be considered; or
>   b. Any WCF proposed on City-owned property within a residential land use district, where the WCF is proposed within 520 feet of any WCF located in the public right-of-way. For purposes of measuring distance between WCF, WCF serving public emergency communication functions and WCF operated by and supporting City of Bellevue functions shall not be considered; or
>   c. Any WCF involving a new WCF support structure proposed in a residential land use district or in a Transition Area.

Accordingly, King County PSERN is requesting the review and approval of a Conditional Use Permit (CUP).

Development Standards

Height

According to BLUC Section 20.20.195.E.1:

> a. Except where a Conditional Use Permit is required, requests to exceed the height limit for the underlying land use district require an Administrative Conditional Use Permit in conjunction with the application for location and design subject to the criteria set out below. No variance from the provisions of the LUC is required.
> b. Requirements for Exceeding Height Limit. The Director may approve a request to exceed the height limit for the underlying land use district if the applicant demonstrates that:
>   i. The requested increase is the minimum necessary for the effective functioning of the system.
>   ii. Construction of a network consisting of a greater number of smaller less obtrusive facilities is not technically feasible. Applicants may be required

to submit an areawide deployment plan to demonstrate compliance with this requirement.

iii. Visual and aesthetic impacts associated with the facility have been mitigated to the greatest extent technically feasible.

The proposed 170' facility has been located and designed to provide the best possible emergency radio coverage to a large portion of Bellevue and surrounding communities. Currently this area of King County is underserved by the existing emergency radio network which is hazardous to first responders as well as the community. Please see the provided Site Justification Letter for more detailed information regarding the need for this facility at this location and the proposed height.

The requested height of 170' is the minimum height necessary for effective functioning of the system. PSERN uses redundant microwave as the primary means of communication to ensure that the system is not impacted by major disasters. Construction of a network consisting of a greater number of smaller less obtrusive facilities is not technically feasible due to the necessary microwave connections to adjacent sites.

The proposed emergency communication facility has been design to minimize aesthetic impacts to the greatest extent feasible. The tower has been painted to blend in with surrounding vegetation, the fence and equipment building will be painted to match the nearby fire station, and additional landscaping has been proposed.

Ground Screening and Fencing

According to BLUC Section 20.20.195.E.2:

a. All ancillary equipment must comply with the sight screening requirements contained in LUC 20.20.525.

b. If the Director of the Development Services Department determines that the facility is potentially dangerous to human life, an eight-foot fence which complies with the sight screening requirements contained in LUC 20.20.525 may be required.

According to 20.20.525 Mechanical Equipment:

A. Applicability.

The requirements of this section shall be imposed for all new development, and construction or placement of new mechanical equipment on existing buildings, and each time a project requires a discretionary land use permit approval. Mechanical equipment should be installed so as not to detract from the appearance of the building or development.

B. Design Objectives.

The following objectives apply to the type and placement of mechanical equipment proposed:

1. To the maximum extent reasonable and consistent with site design objectives, mechanical equipment should be located at or below grade rather than mounted on the roof of a structure.
2. Where the equipment must be located on the roof, it should be consolidated to the maximum extent reasonable rather than scattered.
3. Exposed mechanical equipment should be visually screened by a solid, nonreflective visual barrier that equals or exceeds the height of the mechanical equipment.

C. Implementation.

1. Mechanical equipment located at or below grade may be placed within a required rear or side setback area unless that setback is in a single-family residential land use district, directly abuts a residential land use district, or that setback is within a critical area, critical area buffer, or critical area structure setback required by Part 20.25H LUC.
2. Mechanical equipment associated with new single-family residential homes and homes adding more than 1,000 gross square feet in single-family residential land use districts shall be located in the rear yard or, if placed in the side yard outside of the side structure setback, shall provide sound screening to attenuate noise impacts. Mechanical equipment located in the rear yard shall not be placed less than five feet from any property line.
3. Mechanical equipment located at or below grade will not be included for purposes of calculating lot coverage.
4. Mechanical equipment shall be visually screened by a solid, nonreflective visual barrier that equals or exceeds the height of the mechanical equipment; provided, that the function of a large satellite dish antenna or an antenna array may not be compromised by the screening requirement. The barrier may be provided by any of the following:
    a. Architectural features, such as parapets or mechanical penthouses;
    b. Walls or solid fencing, of a height at least as high as the equipment it screens;
    c. Vegetation and/or a combination of vegetation and view-obscuring fencing, of a type and size which will provide a dense visual barrier at least as high as the equipment it screens within two years from the time of planting; or
    d. The natural topography of the site or the adjoining property or right-of-way.
5. Where screening from above is required, mechanical equipment shall be screened by incorporating one of the following measures:
    a. A solid nonreflective roof. The roof may incorporate nonreflective louvers, vents or similar penetrations to provide necessary ventilation or exhaust of the equipment being screened; or
    b. Painting of the equipment to match or approximate the color of the background against which the equipment is viewed.
6. For development which requires approval of a discretionary land use permit, the City may modify the screening requirements of subsections C.4 and C.5 of this section subject to the criteria set forth in subsection C.7 of this section.
7. The Director may approve alternative screening measures not meeting the specific requirements of subsection C.4 or C.5 of this section if the applicant demonstrates that:
    a. The proposed alternative screening measures will achieve the design objectives of subsection B of this section and produce an equal or better result than the requirements of subsection C.4 or C.5 of this section; or
    b. When screening of mechanical equipment on an existing roof is required:
    i. The existing roof structure cannot safely support the required screening, or
    ii. The integrity of the existing roof will be so compromised by the required screening as to adversely affect any existing warranty of the performance of the roof.

The proposed equipment complies with the sight screening contained in 20.20.525A. The equipment will be visually screened by a solid wood fence and an equipment building both painted

to match the fire station building. Additionally, existing and proposed landscaping will provide additional screening. Please see Sheet A-3.2 for more detailed information.

Setbacks

According to BLUC Section 20.20.195.E.3:

> Setback Requirements. Any structure, facility or fence associated with a communication, broadcast or relay tower with freestanding support structure must conform to the setback requirement for structures in the land use district in which the structure, facility or fence is located, except that the minimum side setback for any structure, facility or fence in a residential land use district is 20 feet.

King County PSERN's tower and associated equipment has been located to be screened to the fullest extent possible. The tower and associated equipment meets the zone setback requirements and meets the required twenty-foot (20') setback from residential zones.

The proposed tower, equipment building, fuel tank, and fencing meets all applicable setback requirements. The tower is setback as follows:

North (Rear) - 78'-10"
East (Side) - 104'-3"
South (Front) - 273'-8"
West (Side) -109'-7"

The lease area/fencing is setback as follows:

North (Rear) - 46'-10"
East (Side) - 88'-7"
South (Front) - 260'-9"
West (Side) - 78'1"

Please see Sheet A-1 for more detailed information

Development Standards

According to BLUC Section 20.20.010:

Uses in land use districts Dimensional Requirements

STD LAND USE CODE REF	LAND USE CLASSIFICATION	R-5
	DIMENSIONS	(43)
	Minimum Setbacks of Structures (feet) Front Yard (18) (20) (38) (39)	20
	Rear Yard (11) (17) (18) (20) (38) (39)	20
	Side Yard (11) (17) (18) (20) (38) (39)	5
	2 Side Yards (17) (18) (20) (38) (39)	15
	Minimum Lot Area Acres (A) or Thousands of Sq. Ft. (3) (39)	7.2
	Dwelling Units per Acre (15) (21) (22)	5
	Minimum Dimensions (feet) Width of Street Frontage	30
	Width Required in Lot (4)	60
	Depth Required in Lot (4)	80
	Maximum in Building Height (feet) (10) (19) (26) (45)	30/35 (44)
	Maximum Lot Coverage by Structures (percent) (13) (14) (16) (26) (27) (37) (39)	40
	Maximum Impervious Surface (percent) (35) (37) (39)	55 (36)
	Minimum Greenscape Percentage of Front Yard Setback (40)	50 (40)

Setbacks: The proposed tower, associated equipment shelter, fuel tank, and fencing meets all applicable setback requirements per BLUC Section 20.20.195.E.3 and BLUC Section 20.20.010.

The tower is setback as follows:

North (Rear) - 78'-10"
East (Side) - 104'-3"
South (Front) - 273'-8"
West (Side) -109'-7"

The lease area/fencing is setback as follows:

North (Rear) - 46'-10"
East (Side) - 88'-7"
South (Front) - 260'-9"
West (Side) - 78'1"

Please see Sheet A-1 for more detailed information

Minimum Lot Area: This site meets the minimum lot size of 7,200 sq. ft. The parcel is 70,282 sq. ft. in size (1.61 acres). Please see Sheet SV1 and A-1 for more detailed information.

Minimum Width of Street Frontage: This site meets the minimum width of street frontage of thirty feet (30'). The parcel has 169.74' of street frontage. Please see Sheet SV1 and A-1 for more detailed information.

Minimum Width Required in Lot: This site meets the minimum lot width of sixty feet (60'). Please see Sheet SV1 and A-1 for more detailed information.

Minimum Depth Required in Lot: This site meets the minimum lot depth of eighty feet (80'). Please see Sheet SV1 and A-1 for more detailed information.

Building Height: The proposed tower height exceeds the allowable height limit in the R-5 zone. According to BLUC Section 20.20.195.E.1.a, "Except where a Conditional Use Permit is required, requests to exceed the height limit for the underlying land use district require an Administrative Conditional Use Permit in conjunction with the application for location and design subject to the criteria set out below. No variance from the provisions of the LUC is required." Please see the above reference to Height and associated required justification to exceed the height limit.

Maximum Lot Coverage by Structure: Buildings do not exceed 40% of total lot area. The final building coverage will be 12.92%.

Maximum Impervious Surface (percentage): The site does not exceed 55% of total impervious surface lot coverage. The final impervious surface amount will be 49.03%.

Minimum Greenscape Percentage of Front Yard Setback: The proposed project will not decrease the required greenscape percentage of front yard setback (50%).

Conditional Use Permit Required Findings

According to BLUC Section 20.30B.140:

The City may approve or approve with modifications an application for a Conditional Use Permit if:

A. The conditional use is consistent with the Comprehensive Plan; and

The proposed King County PSERN project is consistent with the general goals, objectives, policies and standards of the City of Bellevue Comprehensive Plan. The proposed facility adheres to the City of Bellevue Comprehensive Plan Neighborhood Goals and Policies which are as follows:

> N-2: Ensure police, fire and emergency services provide high levels of public safety that respond to growth and changing community needs.
>
> N-4: Plan and prepare for the response, recovery, and mitigation of potential disasters and hazards.

The proposed PSERN emergency communication facility will ensure that the City of Bellevue and surrounding cities and areas within King County will have the highest level of public safety by providing police, fire and other emergency services the critical communication that is needed in order to best serve and protect the public. This facility will provide necessary communications during emergencies and disasters. The proposed microwave links provide the most reliable means of communication after a major disaster.

The proposed facility adheres to the City of Bellevue Comprehensive Plan Capital Facilities Goals and Policies which are as follows:

> CF-2: Plan for the long-term renewal or replacement of aging capital facilities as needed to maintain target service levels.
>
> CF-17: Require essential public facilities to be sited and designed according to city standards and criteria in order to minimize potential impacts to the community, while recognizing the public importance and difficult-to-site nature of such facilities.
>
> CF-18: Participate in inter-jurisdictional efforts to site countywide or statewide essential public facilities. Pursue agreements among jurisdictions to mitigate against the disproportionate burden that may fall on the jurisdiction which becomes the site of a facility.
>
> CF-20: Work to site or expand essential public facilities in ways that equitably balance social, environmental, and economic impacts to achieve citywide and regional planning objectives.

The proposed PSERN emergency communication facility is an inter-jurisdictional effort throughout King County to upgrade the current King County system that is more than 20 years old and must be upgraded to ensure reliability. The proposed emergency communication facility has been designed and located in order to be the least intrusive while still providing necessary services. The tower will be painted to blend in with surrounding vegetation, the fence and equipment building will be painted to match the nearby fire station, and additional landscaping has been

proposed. The siting of these facilities have been designed throughout King County and Bellevue does not have a disproportionate burden. The proposed enhancement of emergency communications has been located and designed in order to balance social, environmental, and economic impacts to the community while achieving citywide and reginal emergency communication needs.

> B. The design is compatible with and responds to the existing or intended character, appearance, quality of development and physical characteristics of the subject property and immediate vicinity; and

The proposed emergency communication facility has been designed and located in order to be the least intrusive while still providing necessary critical communication services. The tower will be painted to blend in with surrounding vegetation, the fence and equipment building will be painted to match the nearby fire station, and additional landscaping has been proposed. Additionally, the fire station is a non-residential public facility in the neighborhood. Locating the emergency communication tower on the fire station property next to adjacent utility towers which have existing communication uses is compatible with existing uses and with the subject property.

> C. The conditional use will be served by adequate public facilities including streets, fire protection, and utilities; and

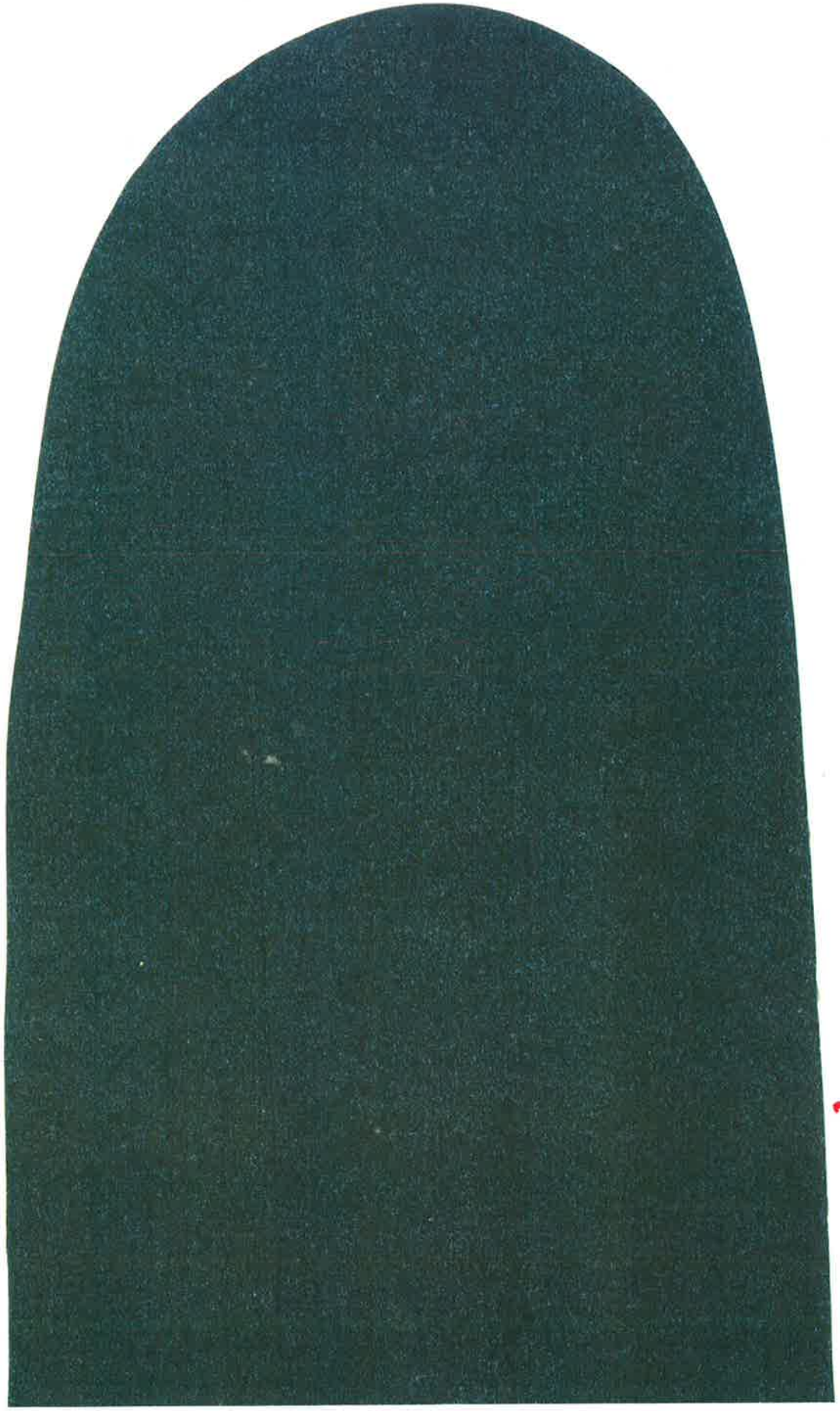
The proposed conditional use will be served by adequate public facilities. The proposed facility is a direct public benefit providing critical emergency communication services to the surrounding area and within the entire network.

> D. The conditional use will not be materially detrimental to uses or property in the immediate vicinity of the subject property; and

The proposed emergency communication facility has been designed and located in order to be the least intrusive while still providing necessary services. The proposed conditional use will not be materially detrimental to uses and/or property in the immediate vicinity of the project. The proposed facility will not impact views, be detrimental to the environment, meets all required City of Bellevue zoning regulations and codes, meets state and local requirements regarding noise, will not impact neighboring property values, and will be a benefit to the public by providing necessary emergency communications. Please review the following reports that have been submitted to the City of Bellevue for additional information: photo simulations, property valuation, site justification letter, acoustical report, NIER Report, FAA determination, and tower color sample.

> E. The conditional use complies with the applicable requirements of this Code. (Ord. 5481, 10-20-03, § 4; Ord. 4972, 3-3-97, § 79; Ord. 4816, 12-4-95, § 178)

The proposed King County PSERN project is consistent with the goals, objectives, policies and standards of the Comprehensive Plan, the zoning regulations and any other plans, programs, maps or ordinances of the City of Bellevue. The proposed conditional use complies with all applicable requirements.



Dark green color of Pole

King County
Department of
Information Technology
CNK-EX-0600
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

August 1, 2016

City of Bellevue Development Services
450 110th Avenue NE
Bellevue, WA 98004

Re: King County PSERN – Bellevue Station 9 – Site Justification Letter

Dear City of Bellevue:

This letter is being submitted to the City of Bellevue to address the following:

- Height Justification per Bellevue Land Use Code (BLUC) Section 20.20.195E.1
- Overall site justification

Project Overview

King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help during an emergency as well as help emergency responders coordinate response efforts to an emergency. The current emergency radio system is more than 20 years old and is needs to be upgraded to ensure reliability.

King County PSERN has proposed to install an emergency communications facility at the City of Bellevue Fire Station 9 property located at 12412 Newcastle Way, Bellevue, WA (Parcel No. 1951820080). PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a tower to a height of one hundred seventy feet (170') to effectively transmit and receive emergency radio communications.

Communication Objectives

The proposed facility has been located and designed to provide the best possible emergency radio coverage to a large portion of Bellevue and surrounding communities. This area is underserved by the current emergency radio network and is a known hazard to our first responders. The height and location of the proposed tower have also been optimized to provide microwave links to both Capitol Hill and NORCOM Dispatch on the top of the Bellevue City Hall. The Emergency Radio Network uses redundant microwave as our primary means of communication as microwave links are the most reliable means of communication after a major disaster: roads can buckle or break, causing fiber or other terrestrial communication to fail, but will not affect microwave; which, worse case, simply need to be realigned to restore communication. Please see the attached emergency radio coverage map and the microwave path analysis.

Alternative Sites Reviewed

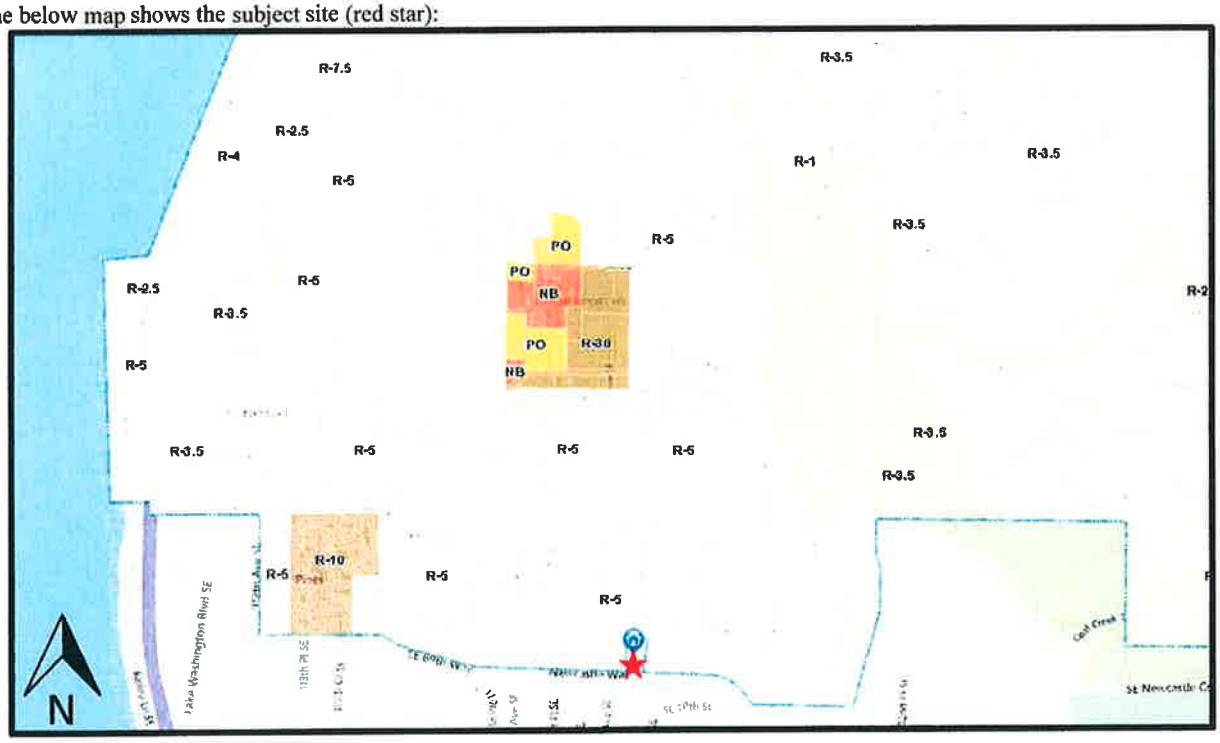
The search for an adequate site for the King County PSERN emergency communications facility in this area of King County started in June 2014. The subject area of Bellevue/Newcastle was important in the King County PSERN design due to the City of Newcastle Police Department indicating that they were experiencing coverage/communications issues in this area of Newcastle and Bellevue. The Bellevue Station 9 site location was selected due to the following:

- A facility in this location and height could provide the necessary emergency radio signal coverage to Bellevue and the surrounding areas – resolving an urgent and ongoing issue of poor communication for first responders in the immediate vicinity.
- A facility in this location and height could achieve necessary microwave links to downtown Bellevue and Capitol Hill.
- This location compared to all alternatives reviewed provided the best overall emergency communications.

The subject property (Bellevue Fire Station 9) is zoned R-5. This entire area of the City of Bellevue is zoned residential. The adjacent zoning in the City of Newcastle is also residential. The nearest non-residential zones are the Office (O) and Community Business (CB) to the east in the City of Newcastle. As mentioned below, the City of Newcastle City Hall was reviewed as an alternative but due to a tower construction moratorium was not viable.

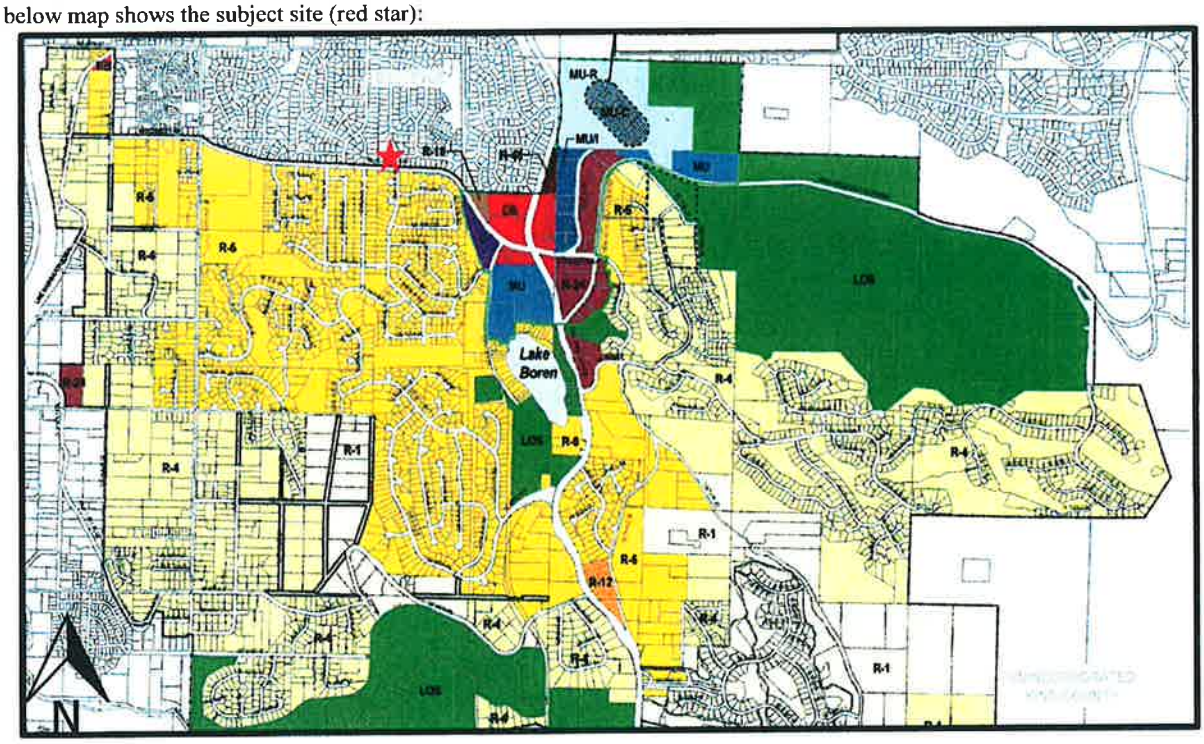
City of Bellevue – Area Zoning Map

The below map shows the subject site (red star):



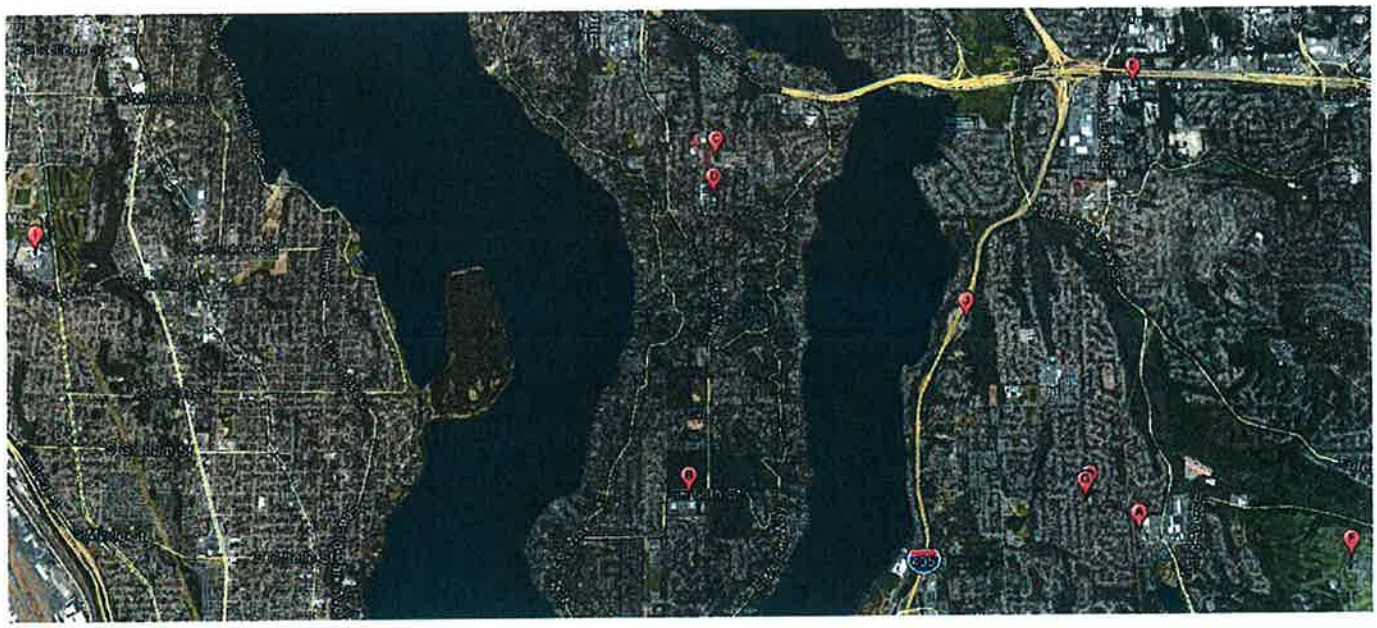
City of Newcastle – Area Zoning Map

The below map shows the subject site (red star):



Aerial Map Showing Alternatives Reviewed and Locations

The below map shows the subject site (red star) and alternative sites reviewed (letters corresponded with the below more detailed site information):



A. Newcastle City Hall
12835 Newcastle Way (City of Newcastle)
Zoning: Office (O)

There was not sufficient ground space for the tower and equipment shelter due to the geometry of the parcel. Additionally, the City of Newcastle has placed a moratorium on new towers (Newcastle Ordinance #2016-535 and #2016-536). Locating the emergency communication tower within Newcastle is not possible due to the moratorium.

B. Mercer Island Fire Station 92
8473 SE 68th Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

C. Mercer Island High School
9100 SE 42nd Street (City of Mercer Island)
Zoning: Public Institution (PI)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

D. Mercer Island Water Tanks – Rotary Park
4350 88th Avenue SE (City of Mercer Island)
Zoning: Residential (R-9.6)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Mercer Island.

E. T-Mobile Office Building in Factoria
3625 132nd Avenue SE
Zoning: Factoria Land Use District 3 (F-3)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Bellevue.

F. Newcastle Golf Course
15500 Six Penny Lane (City of Newcastle)
Zoning: Limited Open Space (LOS)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Newcastle.

G. Seattle City Light Transmission Tower (adjacent to the subject parcel)

Seattle City Light no longer allows wireless antennas above the conductors (wires) on their high-power lines. Therefore, the subject tower is not tall enough to meet our coverage or microwave requirements.

H. Various Puget Sound Energy (PSE) poles in the areas (Not shown on map)
Zoning: Varies

These sites were not considered due to the height of the distribution poles in the area. Even if they were to be extended by 100% of the existing height (which is highly unlikely) they would still not meet our coverage or microwave requirements.

I. VA Hospital
1660 S. Columbian Way (City of Seattle)
Zoning: Major Institution Overlay-105-Lowrise 3 (MIO-105-LR3)

This site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from this area of Seattle.

J. I-405 Park & Ride
5115 113th Place SE
Zoning: Residential (R-2 and R-5)

This site location was not originally evaluated by PSERN because of its location relative to the required coverage area – this area is about 200 feet lower in elevation than the proposed location. Per the request of the neighbors during the outreach process of this application, the P&R was reviewed. It was determined that the site did not provide the coverage required for the Emergency Service Network for Bellevue residents in the area of the proposed site location. Moreover, the required microwave paths could not be achieved from the P&R.

Height Justification

The microwave path from Bellevue Fire Station #9 to the adjacent sites: NORCOM on the top of the Bellevue city hall and Capitol Hill requires the 170' height in order to clear trees fairly close to the proposed site. These trees are approximately 120' in height and lie on terrain approximately 20' higher than the proposed height. Microwave communications is not strictly line of site, near line of site obstructions (in the Fresnel zone) affect the performance of the link. Further, the system is being engineered to perform for a 20-year life span. All of these factors taken together drive the 170' tower height. See attached microwave path survey reports for more details.

Conclusion

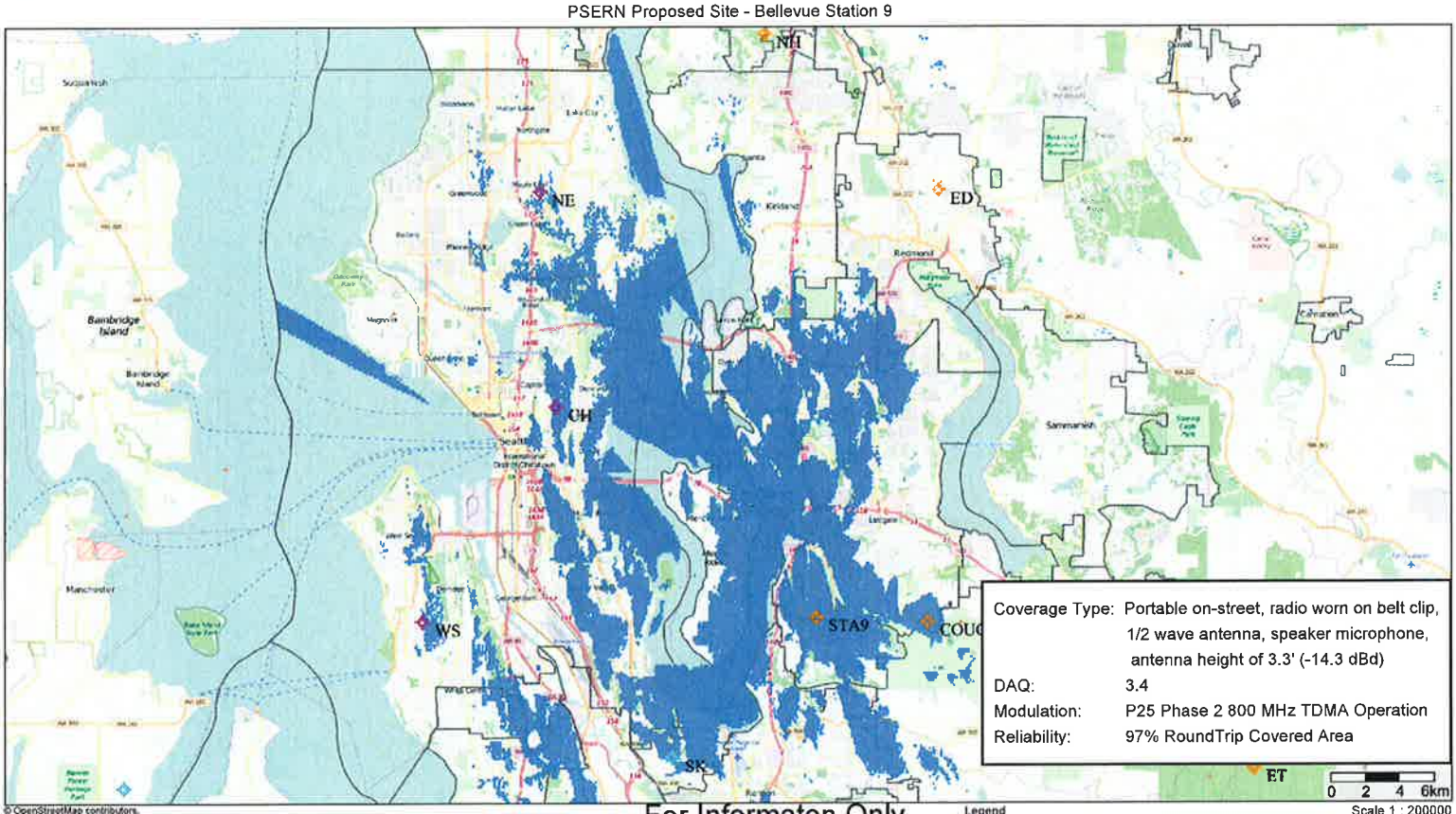
The Bellevue Fire Station #9 emergency radio site is critical for emergency communications coverage in the east Lake Washington area. It and the Cougar Mountain site provide the backbone of the emergency radio coverage for first responders in this area. Further, the Bellevue Fire Station #9 site link the NORCOM and Capitol Hill sites, providing a critical link in the microwave chain linking the emergency radio network. Without the Bellevue Fire Station #9 site, we will not be able to provide the level of emergency radio coverage to the first responders that rely on communication in the field in the greater southern Bellevue area.

Respectfully.

David Mendel
Project Director
King County
David.mendel@kingcounty.gov

MOTOROLA

PSERN Proposed Site - Bellevue Station 9



© OpenStreetMap contributors.

Scale 1 : 200000

Solution: PSERN 800MHz

Job ID: 6743530611.1.16

Workspace: PSERN Full System

System version: 20160608, N/A, 1.91.1

Design: Design 61

Printed: 6/23/2016

For Informaton Only
(Non-Simulcast Map)

Legend

site_area_reliability Portable APX4000 TDMA spk mic STA9 [Component Rel]

Microwave Path Survey Report

Motorola PSERN
Bellevue FS#9 to Capitol Hill
NA130703-48393

Release 2.0
September 2015/Feb. 2016

Issue Releases

Issue Number	Issue Release Date	Changes	Preparer
1.0	September 2015	Initial Release	Justin Lowendick
2.0	February 2016	Re-design to add 20 feet of future growth onto all trees along the path.	Justin Lowendick

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GENERAL

STATEMENT OF WORK

The following report summarizes the results of a microwave path survey conducted by Aviat Networks, Santa Clara, California, for Motorola - PSERN. Field survey work was performed on August 24th – September 4th, 2015, by Justin Lowendick.

The survey was undertaken to verify site locations and determine antenna sizes and centerlines required to establish a microwave communications system in conformance with customer requirements and current engineering practices.

SURVEY PROCEDURES

Preliminary path profiles will be drawn based on the supplied site coordinates and contour information extracted from the best available topographic mapping. A field site survey will be conducted to verify site coordinates and elevations based on North American Datum 1983 (NAD83) and gather information related to the proposed radio equipment and antenna locations, site access, and site development constraints. A field path survey will be conducted to verify path profile elevations, measure all natural and manmade potential obstructions and assess the reflective potential of all natural and manmade surfaces. Antenna centerline heights will be calculated for the proposed frequency band by applying suitable clearance criteria based on the propagation characteristics of the geographic area.

Path calculation sheets will then be generated for each hop, based upon the recommended centerline heights. Antenna sizes and the choice of propagation protection diversity will be chosen to meet the required fade margin and the desired path propagation reliability. Propagation outage and reliability calculations will be based on the Vigants model (ref. "Space Diversity Engineering", BSTJ, 1/75).

DESIGN CRITERIA

Path clearance criteria must be established for each path on the basis of total system performance objectives, economic considerations, and careful analysis of local atmospheric conditions derived from published climatological data, where available, and reported microwave transmission experience pertinent to the area. Antenna heights much greater than actually needed cause an unwarranted increase in system cost, and on paths with significant ground reflections, it can increase the exposure to multipath and ground reflection signal fading. It is desirable to locate the antennas high enough so that even under severe super-standard atmospheric refractive conditions (surface ducting) there is adequate clearance such that signal entrapment does not significantly degrade the fade margin of the path or generate excessive multipath fade activity. The choice of clearance criteria for a microwave path is a balance between cost and performance.

The path clearance criterion as applied to a given geographic area is a function of the degree and direction of atmospheric beam bending and can conveniently be defined by the equivalent earth radius K factor:

$$K = \frac{Effective\ \ Earth's\ \ Radius}{Actual\ \ Earth's\ \ Radius}$$

The Median Propagation value of K = 4/3 allows the normal microwave horizon to be slightly extended when compared to the optical horizon; however, under certain meteorological conditions (for example, during nighttime super-refractivity usually associated with temperature inversions) the value of K increases to 2 or greater for periods of several minutes to several hours. This increases the path clearance and results in the heavy multipath fade activity seen on some reflective paths and antenna decoupling power fading on others.

CLEARANCE CRITERIA

The criteria used to design a radio path in regions where the X-factor is equal to or less than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 60% first Fresnel zone radius over K=1, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

The criteria used to design a radio path in regions where the X-factor is greater than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 30% first Fresnel zone radius over K=2/3, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

MICROWAVE PATH PERFORMANCE CALCULATIONS AND WARRANTIES

The microwave path design models most frequently employed within the industry (e.g., Vigants, and ITU PN-530) provide a reasonably accurate (and therefore usually guaranteed) estimate of the cumulative time a path will be out of service due to random atmospheric multipath fading under normal atmospheric conditions. **These models do not (and cannot) accommodate abnormal, unusual, anomalous, or otherwise unpredictable conditions of weather or atmospheric refractivity**.

MICROWAVE FREQUENCY ENGINEERING / INTER-SYSTEM INTERFERENCE ANALYSIS

Aviat Networks will partner with Comsearch, a CommScope company, to provide cost-effective frequency planning and FCC licensing services for radio communications systems (if required). The planning software used, considers specific operating parameters of both the proposed microwave system and the environment microwave systems (license and proposed) to properly consider the interference potential of the new path or system. Parameters and data elements incorporated into the modeling include, but are not limited to, antenna type, antenna height, elevation, antenna radiation pattern, receiver filter performance, terrain, radio modulation, path orientation, receiver threshold, etc. These elements are required to accurately predict specific interfering levels into and from the existing microwave systems. The accuracy of the calculations is ensured by "real time" maintenance of the Comsearch point-to-point microwave, earth station, radio equipment, antenna, interference objective, and contact database.

MICROWAVE FREQUENCY SELECTION

The interference analysis performed on the microwave system identifies available frequencies considering existing and proposed systems found in the Comsearch database. When applicable, an analysis of the systems in the adjacent bands can be done to ensure the microwave system does not receive unwanted threshold degradation. In bands shared with satellite systems, an analysis of potential interference with earth stations and with the geo-stationary satellite orbit can also be done. Additionally, co-located or nearby transmitters already licensed in the required frequency band can be identified in order to reduce the possibility of "bucking" an existing high/low frequency plan that could increase the possibility of receiver overload or reflective interference from a nearby system.

MICROWAVE FREQUENCY COORDINATION AND FCC LICENSING

The majority of microwave bands subject to FCC Rule Part 101 require prior coordination with existing licensees. Aviat Networks will partner with Comsearch to perform the frequency coordination and FCC licensing on behalf of the customer (if required). The procedure will include notification of the technical parameters of the proposed system to all existing and proposed licensees in the area and frequency band of operation. Frequency coordination will also be performed with Canadian and Mexican authorities in border areas when necessary. By FCC rule, recipients are given 30 days to respond, or in some cases an expedited response can be requested.

Upon completion of the prior coordination process, documentation required to satisfy FCC Rule Part 101.103 (d) can be prepared on behalf of the customer. This will include any necessary exhibits, including Supplemental Showings required upon submittal of the requested license application. The FCC filing process includes:

- Filing of the FCC Form 601 microwave application upon written approval from the customer and providing an electronic copy of the application to the customer via email.
- Tracking the status of the application until the license is granted by the FCC. Amendments will be handled expeditiously on behalf of the customer for any questions or concerns from the Commission.
- Email notifications to the licensee when the license is granted by the FCC.

- Filing of the required "Completion of Construction" notification with the FCC upon written approval from the licensee and notification of the filing via email.

SPECIAL CONSIDERATIONS

On all microwave radio paths traversing urban areas there exists the possibility of multiple on- and off-path structural reflections which generate long-delayed echoes, as well as "terrain scatter" RF intra- and inter-system interference. Long delayed, low-level echoes have no effect on digital radio performance; however, the terrain scatter mechanism cannot be accurately predicted nor precisely measured without an extensive and expensive field trial. Consequently, this mechanism is specifically excluded from all current industry-wide path survey and frequency coordination performance guarantees.

The structure supporting the microwave antenna can take many forms. The antenna is most often mounted on a tower, but can be mounted on a variety of structures such as roof tripods, penthouse wall, wooden telephone pole or metal monopole. It is recommended that the customer or end user conduct a structural analysis of the support structure to determine if the structure will support the additional loading imposed by the antenna and its mount. The structure must also meet the twist and sway requirements per EIA/ANSI 222G.

Certain geographic areas / frequency bands are restricted due to Radio Astronomy use or DOD and other Government top-secret installations. Even outside the absolute exclusion zone, there are areas where 18 GHz can be cleared by DOD. Coordinators must file applications and wait for the FCC to contact NTIA and NTIA to contact IRAC to analyze these before FCC licenses are granted. If the application is rejected, the proposed microwave link could be subject to redesign with another frequency band.

SITE INFORMATION – Bellevue FS#9

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	32	'	28.83 "N
122	°	10	'	28.26 "W
Elev:		433	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	32	'	30.5 "N
122	°	10	'	28.6 "W
Elev:		436	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 12412 Newcastle Way
City: Newcastle
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☐Existing ☒New
- Tower Type: ☐Guyed ☐Self Supporting ☒Monopole ☐Rooftop ☐Water tank ☐Other: _____

The tower is a proposed monopole, a minimum centerline height of 165 feet is required to meet the design clearance criteria due to trees along the paths.

Antenna Mounting Considerations for each path:

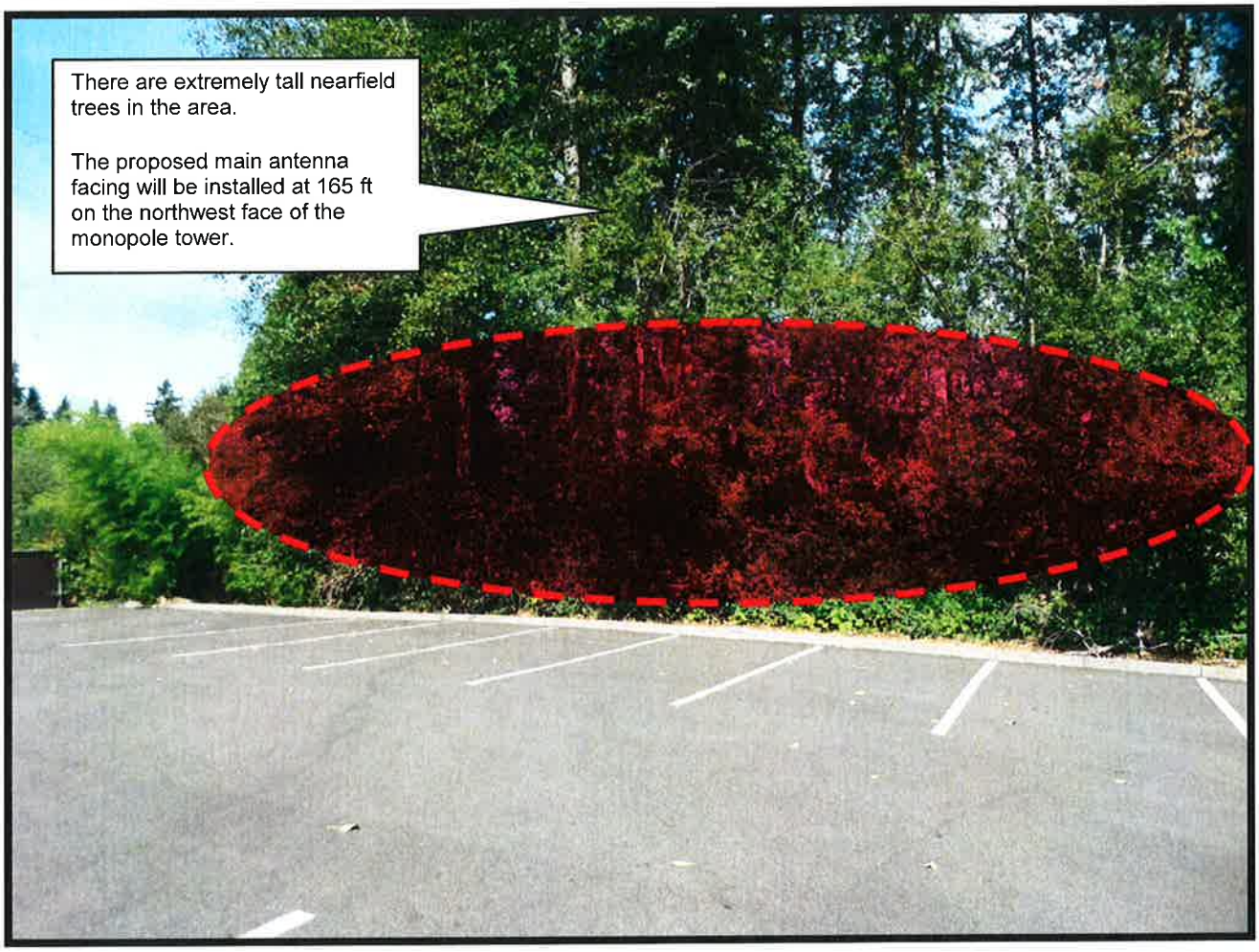
- Path to Capitol Hill: The proposed main antenna will be installed at 165 ft on the northwest face of the monopole tower.
  - Centerline: 165 feet
  - Azimuth: 309.19°
  - Tilt Angle: -0.14°

Transmission Line Considerations for each path:

- Path to Capitol Hill: An estimated 220 feet of cable is required from the proposed antenna height to the radio in the equipment room.
- Cable Ladder: ☐Use Existing ☒Recommended ☐Not Required
- Cable Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Entry Ports: ☐Use Existing ☒New Entry Port Required
- Ground Bus Bar: ☐Use Existing ☒New Bus Bar Required

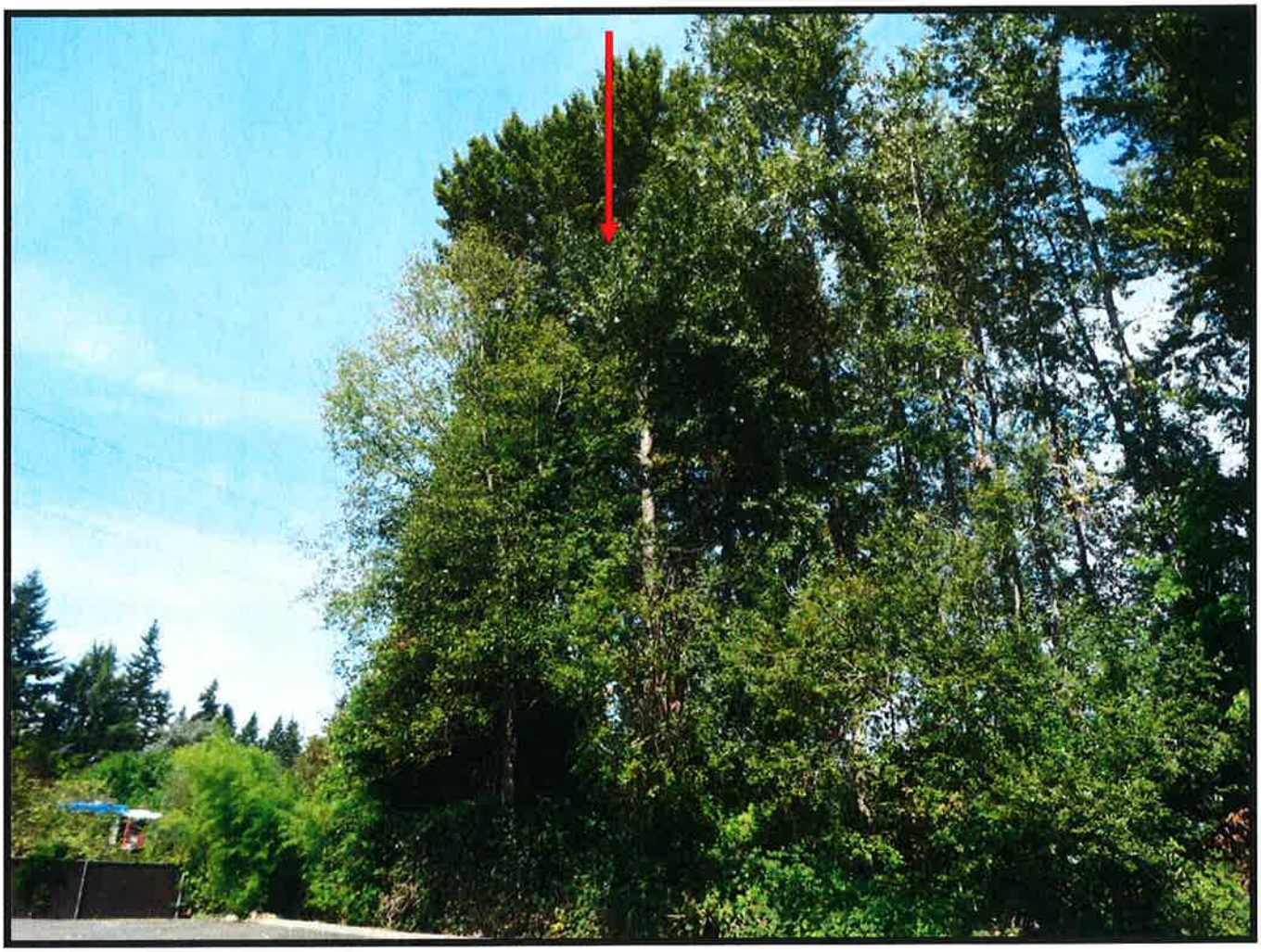
Site Access Considerations:
The site is located off of a paved parking lot. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

SITE PHOTOS



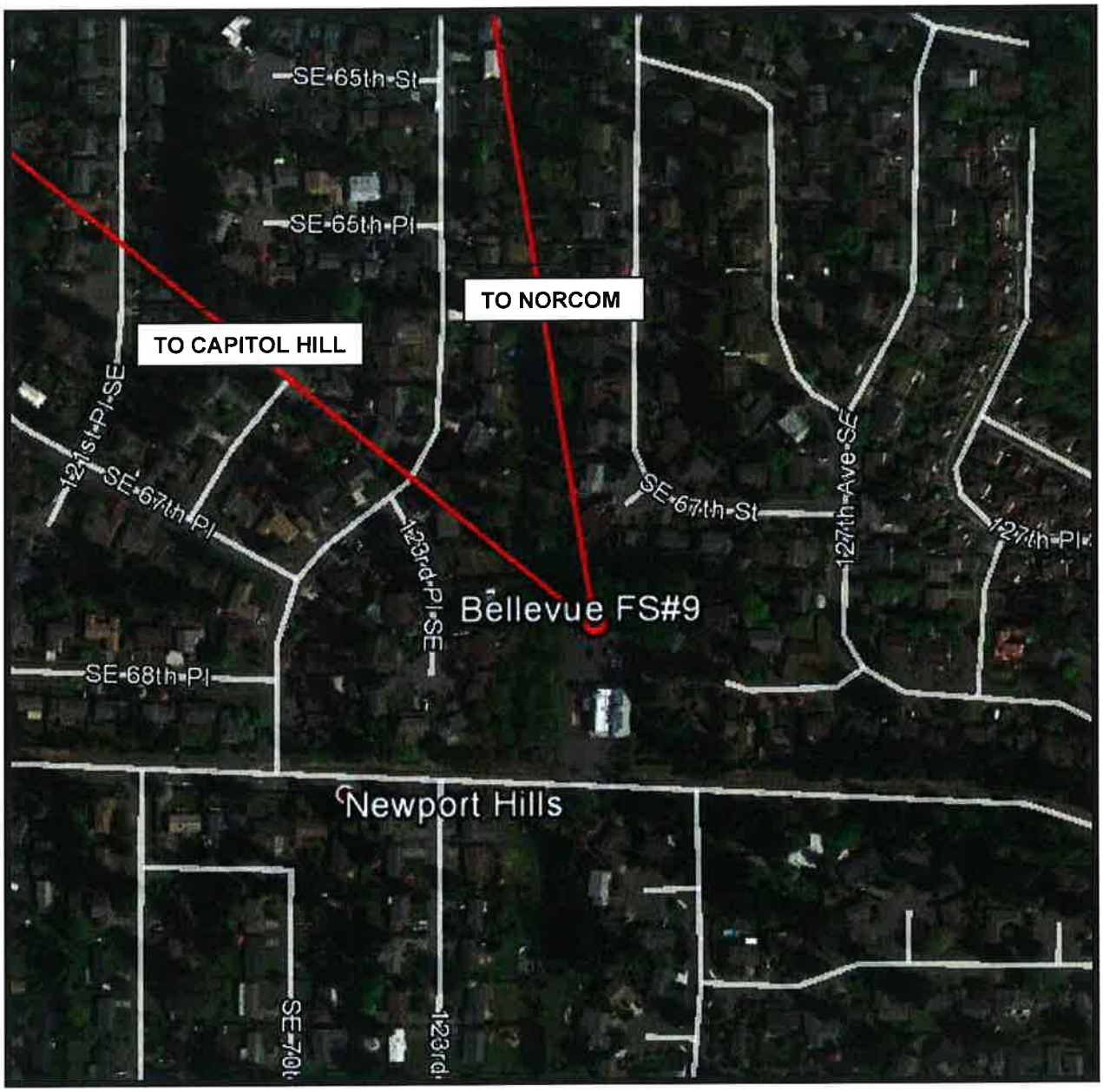
Bellevue FS#9

View of the Area to be Cleared to Make Room for Tower Compound – Behind Bellevue Fire Station #9 Building



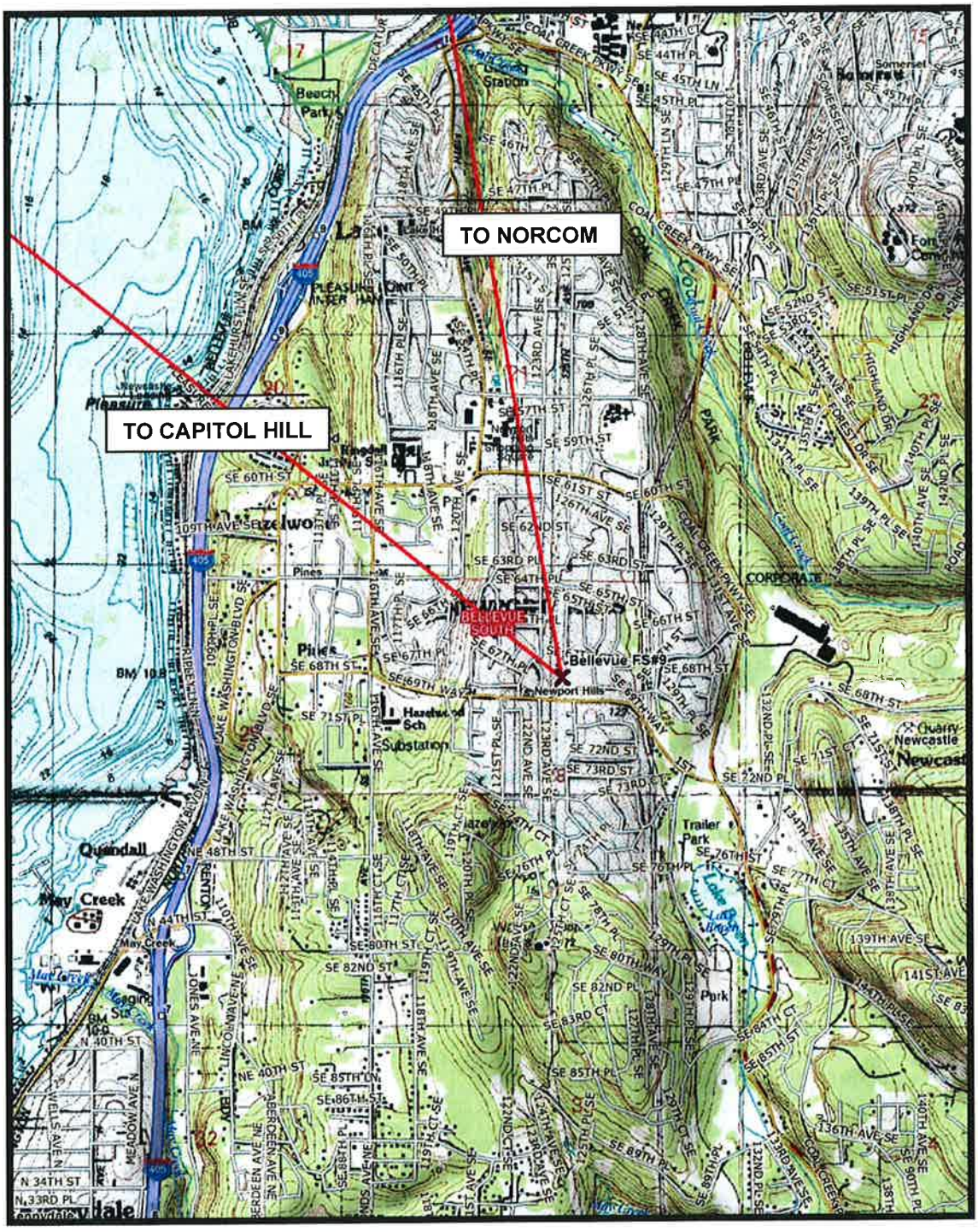
View of the Azimuth facing Capitol Hill

MAP EXTRACTS



Bellevue FS#9

NAD 83							
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South



Bellevue FS#9

NAD 83						
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South

SITE INFORMATION – Capitol Hill

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83					
47	°	36	'	56.35	"N
122	°	18	'	31.45	"W
Elev:		415	ft		

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83					
47	°	36	'	56.8	"N
122	°	18	'	32.1	"W
Elev:		410	ft		

ASR, NAD 83					
47	°	36	'	57.0	"N
122	°	18	'	32.0	"W
Elev:		410	ft	125.0	m

FCC Licensed Coordinates, NAD 83					
47	°	36	'	56.3	"N
122	°	18	'	31.4	"W
Elev:		410	ft	125.0	m

Street Address: 1729 East Madison St.
City: Seattle
County: King
State: Washington

Tower Registration Number: 1032916
Call Sign: WNTS653

Tower Considerations:

- Tower Structure: ☒Existing ☐New
- Tower Type: ☐Guyed ☒Self Supporting ☐Monopole ☐Rooftop ☐Water tank
  ☐Other: _____

The tower is an existing 500 foot self-support structure with three round legs and is painted. On top is a 95 foot radio antenna bringing the total height to 595 feet.

Antenna Mounting Considerations for each path:

- Path to Bellevue FS#9: The proposed main antenna will be installed at 119 ft on the southeast leg of the tower.
  - Centerline: 119 feet
  - Azimuth: 129.10°
  - Tilt Angle: +0.05°

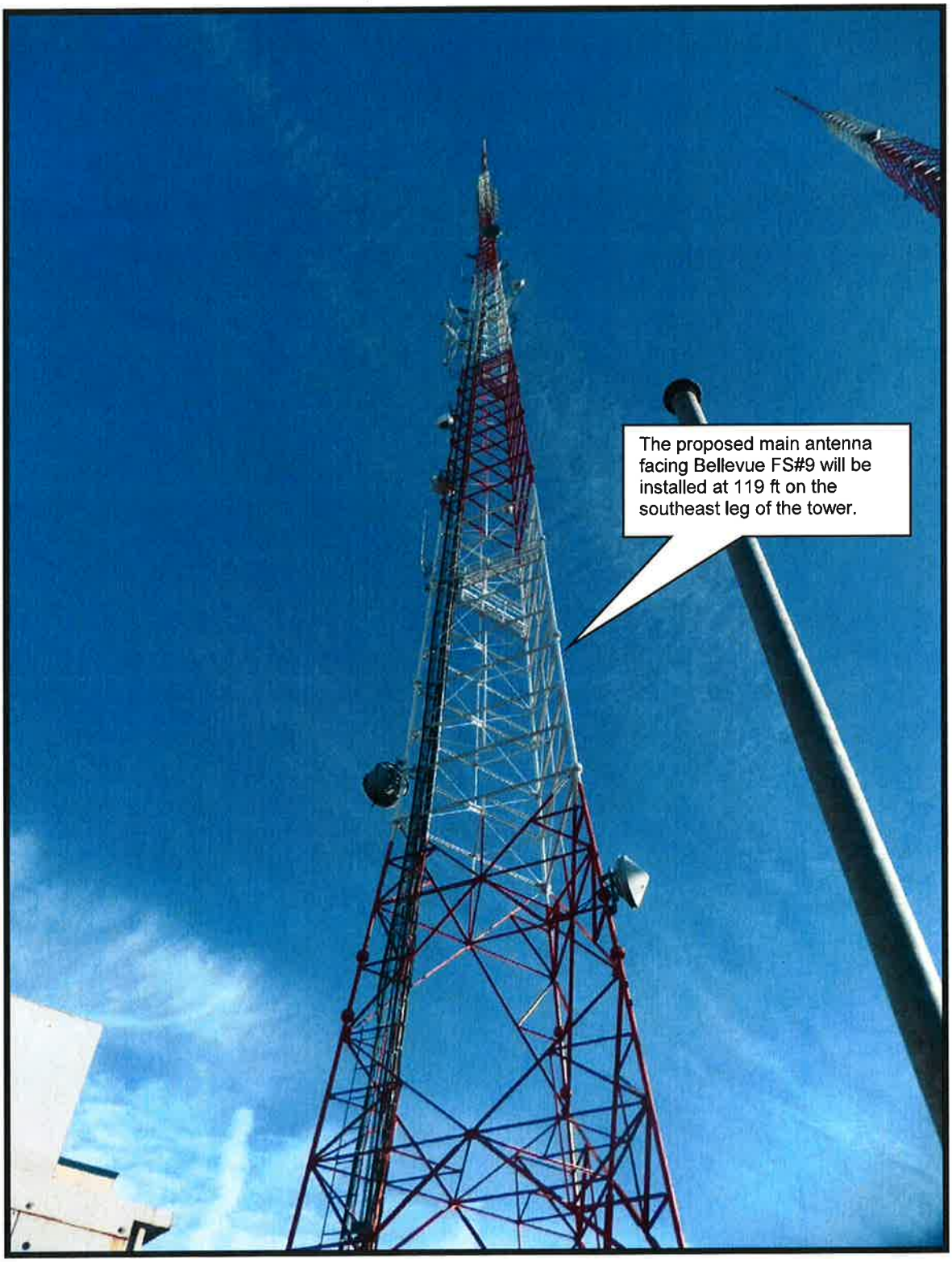
Transmission Line Considerations for each path:

- Path to West Seattle: An estimated 210 feet of waveguide is required from the main antenna to the radio in the shelter.
- Cable Ladder: ☒Use Existing ☐Recommended ☐Not Required
- Cable Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Ice Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Entry Ports: ☒Use Existing ☐New Entry Port Required
- Ground Bus Bar: ☒Use Existing ☐New Bus Bar Required

Site Access Considerations:

The site is located off of a paved road. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

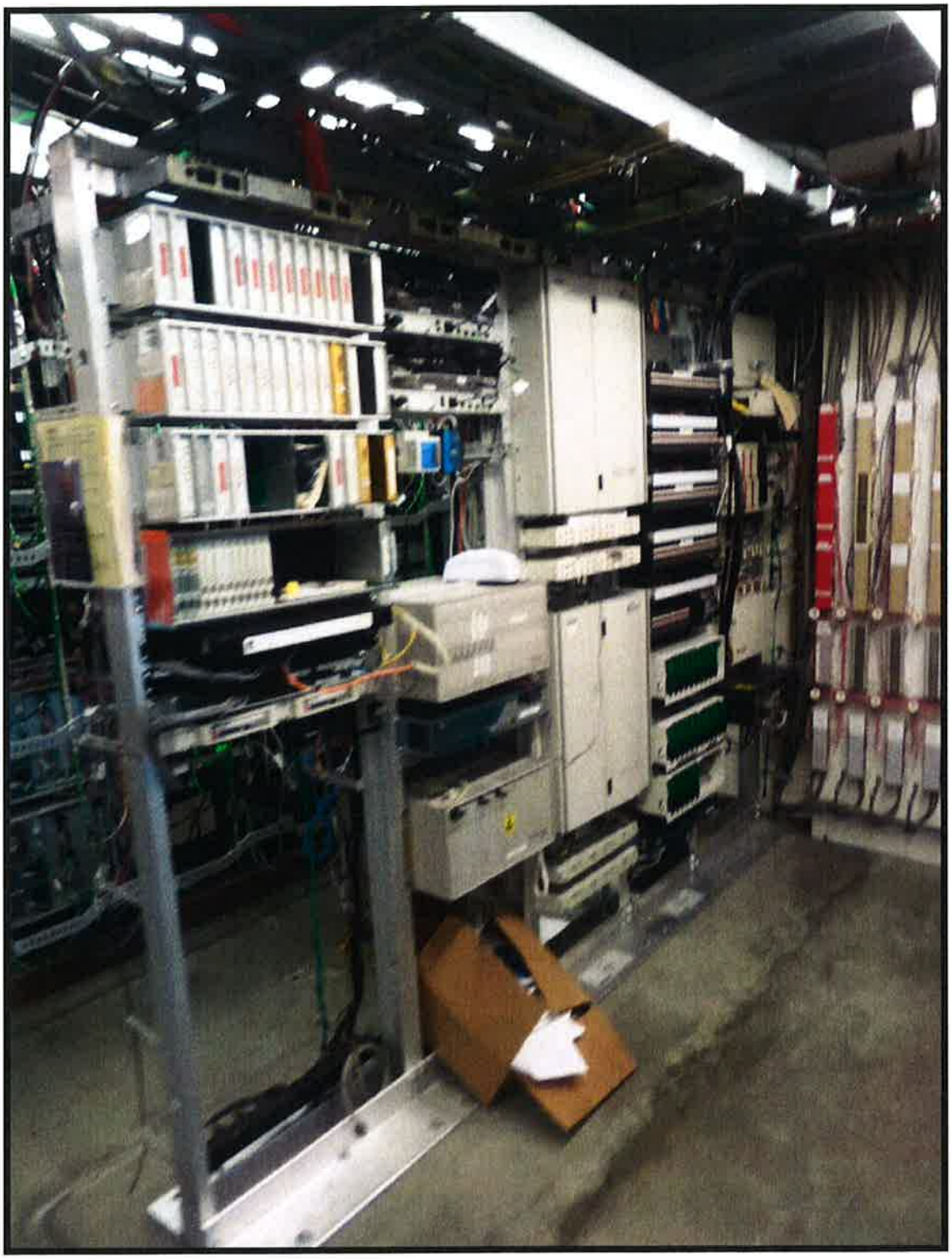
SITE PHOTOS



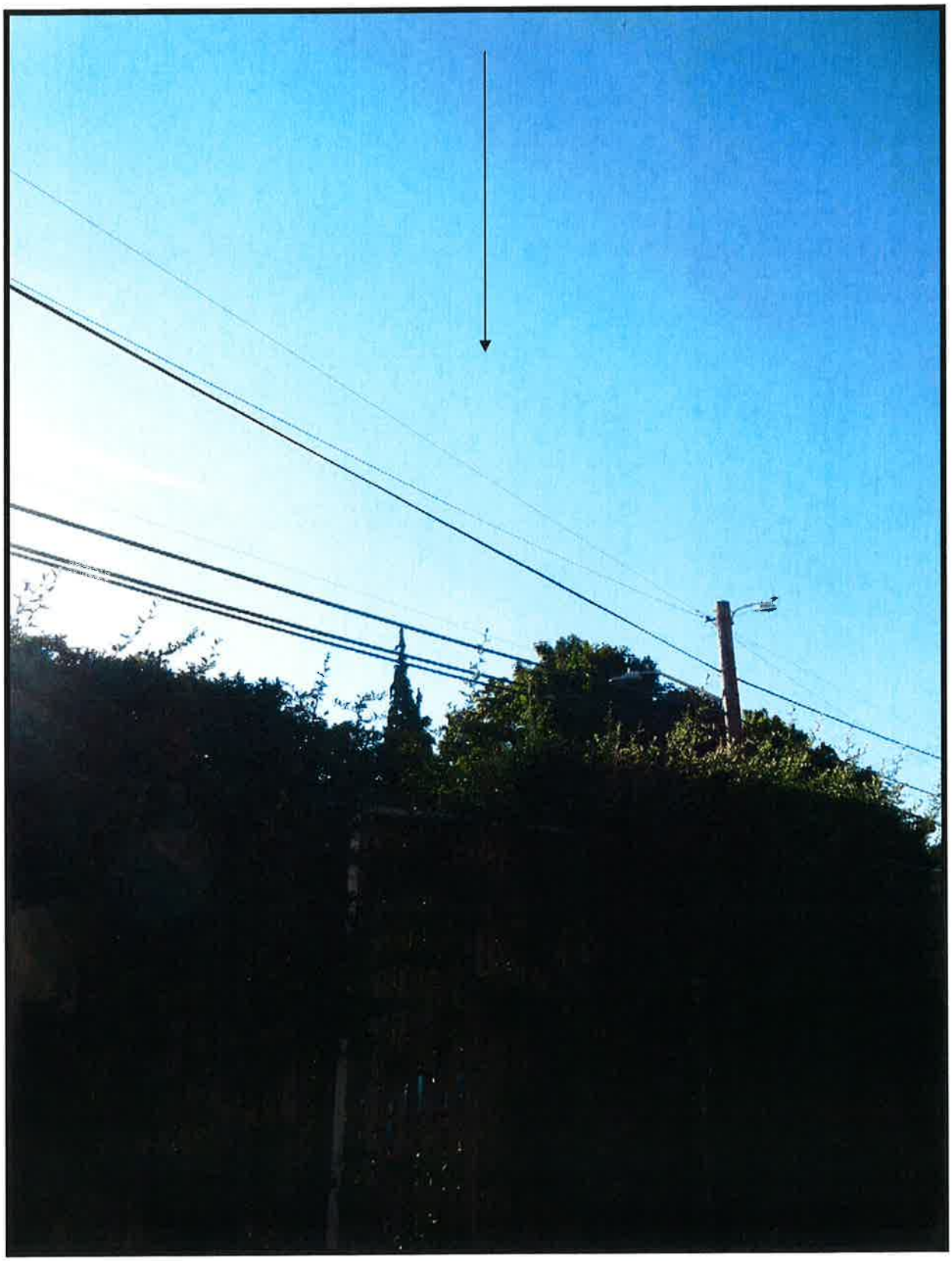
View of the Capitol Hill Tower

View of the Horizontal Waveguide Run

View of the Exterior Waveguide Entry Port



Proposed Radios To Replace the Existing Equipment in this Equipment Row

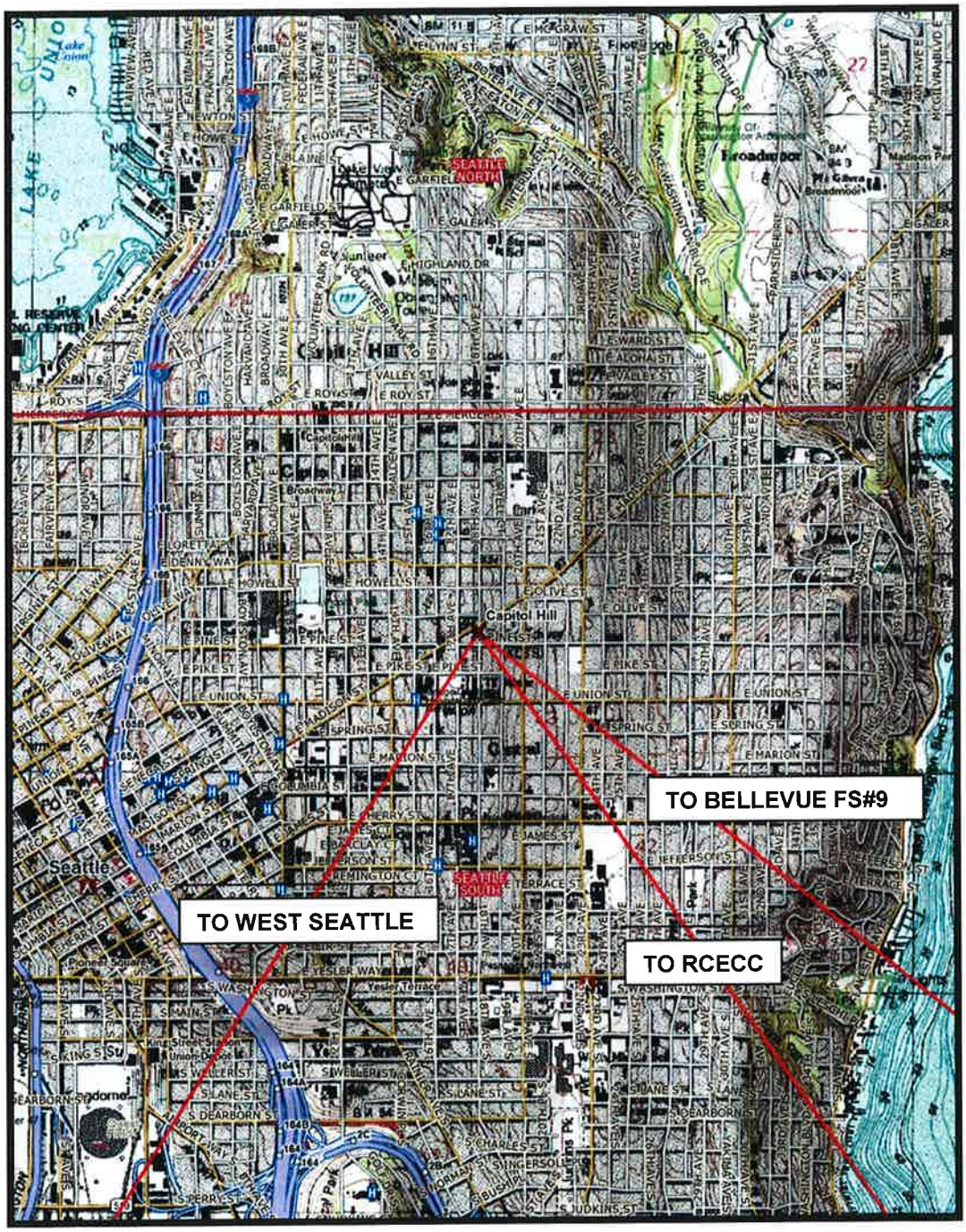


View of the Azimuth to Bellevue FS#9

MAP EXTRACTS

Capitol Hill

NAD 83							
47	°	36	'	56.8	"N	State: Washington
122	°	18	'	32.1	"W	County: King
Elev:		410	ft			Ref Map: Seattle South



Capitol Hill

NAD 83						
47	°	36	'	56.8	"N	State: Washington
122	°	18	'	32.1	"W	County: King
Elev:		410	ft			Ref Map: Seattle South

PATH INFORMATION

PATH DESCRIPTIONS

Bellevue FS#9 to Capitol Hill

Path Length: 8.09 Miles
Frequency Band: 11 GHz

General Path Description:
The Bellevue FS#9 site is a proposed monopole tower and Capitol Hill is an existing site and tower. Due to taller nearfield trees at the Bellevue FS#9 site and tall trees along Mercer Island, the centerline at Bellevue FS#9 needed to be raised to a minimum of 165 feet in order to meet the design clearance criteria. The path crosses rolling hills across the bay with tall trees.

Path Climate considerations:
The path is located in an area that is considered "average" for radio wave propagation. The area is considered to have an oceanic climate. Typically winters are cool and wet with summers being warm and mostly dry. Precipitation averages around 37 inches per year with the largest amount of rainfall from November to February. Snowfall is typical but heavy snows are rare except at higher elevations of the mountains and their surrounding areas.

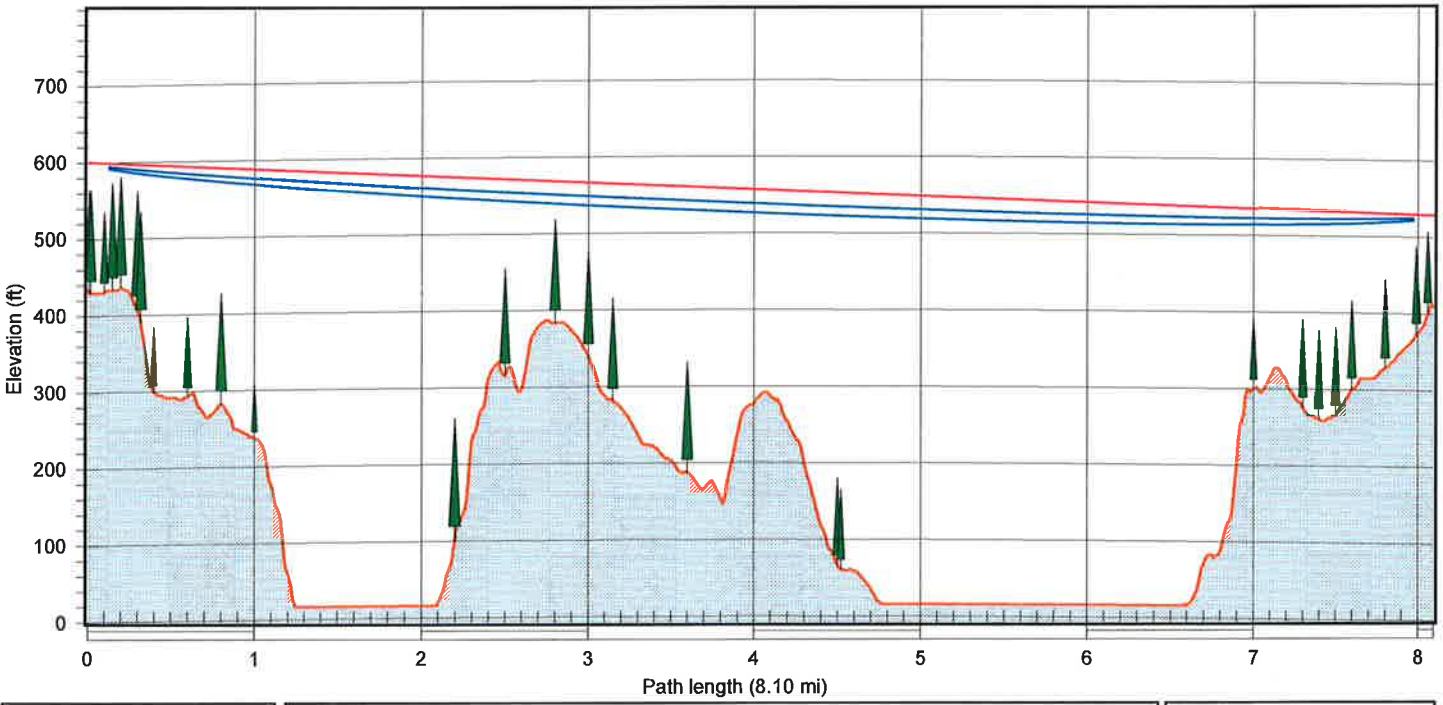
	Bellevue FS#9	Capitol Hill
Latitude	47 32 30.50 N	47 36 56.80 N
Longitude	122 10 28.60 W	122 18 32.10 W
True azimuth (°)	309.19	129.10
Vertical angle (°)	-0.14	0.05
Elevation (ft)	436.00	410.00
Antenna model	HP4-107 (TR)	HP4-107 (TR)
Antenna file name	3224	3224
Antenna gain (dBi)	40.40	40.40
Antenna height (ft)	165.00	119.00
TX line model	EW90	EW90
TX line unit loss (dB/100 ft)	3.06	3.06
TX line length (ft)	220.00	210.00
TX line loss (dB)	6.74	6.43
Connector loss (dB)	0.39	0.39
Circulator branching loss (dB)	0.40	0.40
Frequency (MHz)	11200.00	
Polarization	Vertical	
Path length (mi)	8.10	
Free space loss (dB)	135.75	
Atmospheric absorption loss (dB)	0.21	
Net path loss (dB)	69.91	69.91
Configuration	NP	NP
Radio model	I600V3H11_40M 64Q 156Mb	I600V3H11_40M 64Q 156Mb
Radio file name	i3h11_40m_100t	i3h11_40m_100t
TX power (watts)	0.63	0.63
TX power (dBm)	28.00	28.00
Emission designator	40M0D7W	40M0D7W
EIRP (dBm)	60.87	61.18
RX threshold criteria	1E-6 BER	1E-6 BER
RX threshold level (dBm)	-73.25	-73.25
Receive signal (dBm)	-41.91	-41.91
Thermal fade margin (dB)	31.34	31.34
Dispersive fade margin (dB)	51.70	51.70
Dispersive fade occurrence factor	1.00	

RECOMMENDED - FIELD VERIFIED

	Bellevue FS#9	Capitol Hill
Effective fade margin (dB)	31.30	31.30
Climatic factor	1.00	
Terrain roughness (ft)	133.04	
C factor	0.28	
Average annual temperature (°F)	43.72	
Fade occurrence factor (Po)	4.163E-003	
Worst month multipath availability (%)	99.99969	99.99969
Worst month multipath unavailability (%)	0.00031	0.00031
Worst month multipath unavailability (sec)	8.10	8.10
Annual multipath availability (%)	99.99993	99.99993
Annual multipath unavailability (sec)	21.26	21.26
Annual 2 way multipath availability (%)	99.99987	
Annual 2 way multipath unavailability (sec)	42.51	
Polarization	Vertical	
Rain region	C-96 Temp. Maritime	
Rain rate (mm/hr)	131.90	
Flat fade margin - rain (dB)	31.34	
Rain attenuation (dB)	31.36	
Annual rain availability (%)	99.99996	
Annual rain unavailability (min)	0.20	
Annual rain + multipath availability (%)	99.99983	
Annual rain + multipath unavailability (min)	0.90	

Multipath fading method - Vigants - Barnett
Rain fading method - Crane

RECOMMENDED - FIELD VERIFIED



Bellevue FS#9	
Latitude	47 32 30.50 N
Longitude	122 10 28.60 W
Azimuth	309.19°
Elevation	436 ft ASL
Antenna CL	165.0 ft AGL

Frequency (MHz) = 11200.0
K = 1.33
%F1 = 60.00, 100.00

Capitol Hill	
Latitude	47 36 56.80 N
Longitude	122 18 32.10 W
Azimuth	129.10°
Elevation	410 ft ASL
Antenna CL	119.0 ft AGL

Microwave Path Survey Report

Motorola PSERN
Norcom to Bellevue FS#9
NA130703-48393

Release 2.0
September 2015/ Feb. 2016

Issue Releases

Issue Number	Issue Release Date	Changes	Preparer
1.0	September 2015	Initial Release	Justin Lowendick
2.0	February 2016	Re-design to add 20 feet of future growth onto all trees along the path.	Justin Lowendick

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GENERAL

STATEMENT OF WORK

The following report summarizes the results of a microwave path survey conducted by Aviat Networks, Santa Clara, California, for Motorola - PSERN. Field survey work was performed on August 24th – September 4th, 2015, by Justin Lowendick.

The survey was undertaken to verify site locations and determine antenna sizes and centerlines required to establish a microwave communications system in conformance with customer requirements and current engineering practices.

SURVEY PROCEDURES

Preliminary path profiles will be drawn based on the supplied site coordinates and contour information extracted from the best available topographic mapping. A field site survey will be conducted to verify site coordinates and elevations based on North American Datum 1983 (NAD83) and gather information related to the proposed radio equipment and antenna locations, site access, and site development constraints. A field path survey will be conducted to verify path profile elevations, measure all natural and manmade potential obstructions and assess the reflective potential of all natural and manmade surfaces. Antenna centerline heights will be calculated for the proposed frequency band by applying suitable clearance criteria based on the propagation characteristics of the geographic area.

Path calculation sheets will then be generated for each hop, based upon the recommended centerline heights. Antenna sizes and the choice of propagation protection diversity will be chosen to meet the required fade margin and the desired path propagation reliability. Propagation outage and reliability calculations will be based on the Vigants model (ref. "Space Diversity Engineering", BSTJ, 1/75).

DESIGN CRITERIA

Path clearance criteria must be established for each path on the basis of total system performance objectives, economic considerations, and careful analysis of local atmospheric conditions derived from published climatological data, where available, and reported microwave transmission experience pertinent to the area. Antenna heights much greater than actually needed cause an unwarranted increase in system cost, and on paths with significant ground reflections, it can increase the exposure to multipath and ground reflection signal fading. It is desirable to locate the antennas high enough so that even under severe super-standard atmospheric refractive conditions (surface ducting) there is adequate clearance such that signal entrapment does not significantly degrade the fade margin of the path or generate excessive multipath fade activity. The choice of clearance criteria for a microwave path is a balance between cost and performance.

The path clearance criterion as applied to a given geographic area is a function of the degree and direction of atmospheric beam bending and can conveniently be defined by the equivalent earth radius K factor:

$$K = \frac{Effective\ \ Earth's\ \ Radius}{Actual\ \ Earth's\ \ Radius}$$

The Median Propagation value of K = 4/3 allows the normal microwave horizon to be slightly extended when compared to the optical horizon; however, under certain meteorological conditions (for example, during nighttime super-refractivity usually associated with temperature inversions) the value of K increases to 2 or greater for periods of several minutes to several hours. This increases the path clearance and results in the heavy multipath fade activity seen on some reflective paths and antenna decoupling power fading on others.

CLEARANCE CRITERIA

The criteria used to design a radio path in regions where the X-factor is equal to or less than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 60% first Fresnel zone radius over K=1, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

The criteria used to design a radio path in regions where the X-factor is greater than 1:

- Main to Main:
  - 100% first Fresnel zone radius over K=4/3, or
  - 30% first Fresnel zone radius over K=2/3, whichever is greater

- Main to Diversity:
  - 60% first Fresnel zone radius over K=4/3 (Not Applicable)

MICROWAVE PATH PERFORMANCE CALCULATIONS AND WARRANTIES

The microwave path design models most frequently employed within the industry (e.g., Vigants, and ITU PN-530) provide a reasonably accurate (and therefore usually guaranteed) estimate of the cumulative time a path will be out of service due to random atmospheric multipath fading under normal atmospheric conditions. **These models do not (and cannot) accommodate abnormal, unusual, anomalous, or otherwise unpredictable conditions of weather or atmospheric refractivity**.

MICROWAVE FREQUENCY ENGINEERING / INTER-SYSTEM INTERFERENCE ANALYSIS

Aviat Networks will partner with Comsearch, a CommScope company, to provide cost-effective frequency planning and FCC licensing services for radio communications systems (if required). The planning software used, considers specific operating parameters of both the proposed microwave system and the environment microwave systems (license and proposed) to properly consider the interference potential of the new path or system. Parameters and data elements incorporated into the modeling include, but are not limited to, antenna type, antenna height, elevation, antenna radiation pattern, receiver filter performance, terrain, radio modulation, path orientation, receiver threshold, etc. These elements are required to accurately predict specific interfering levels into and from the existing microwave systems. The accuracy of the calculations is ensured by "real time" maintenance of the Comsearch point-to-point microwave, earth station, radio equipment, antenna, interference objective, and contact database.

MICROWAVE FREQUENCY SELECTION

The interference analysis performed on the microwave system identifies available frequencies considering existing and proposed systems found in the Comsearch database. When applicable, an analysis of the systems in the adjacent bands can be done to ensure the microwave system does not receive unwanted threshold degradation. In bands shared with satellite systems, an analysis of potential interference with earth stations and with the geo-stationary satellite orbit can also be done. Additionally, co-located or nearby transmitters already licensed in the required frequency band can be identified in order to reduce the possibility of "bucking" an existing high/low frequency plan that could increase the possibility of receiver overload or reflective interference from a nearby system.

MICROWAVE FREQUENCY COORDINATION AND FCC LICENSING

The majority of microwave bands subject to FCC Rule Part 101 require prior coordination with existing licensees. Aviat Networks will partner with Comsearch to perform the frequency coordination and FCC licensing on behalf of the customer (if required). The procedure will include notification of the technical parameters of the proposed system to all existing and proposed licensees in the area and frequency band of operation. Frequency coordination will also be performed with Canadian and Mexican authorities in border areas when necessary. By FCC rule, recipients are given 30 days to respond, or in some cases an expedited response can be requested.

Upon completion of the prior coordination process, documentation required to satisfy FCC Rule Part 101.103 (d) can be prepared on behalf of the customer. This will include any necessary exhibits, including Supplemental Showings required upon submittal of the requested license application. The FCC filing process includes:

- Filing of the FCC Form 601 microwave application upon written approval from the customer and providing an electronic copy of the application to the customer via email.
- Tracking the status of the application until the license is granted by the FCC. Amendments will be handled expeditiously on behalf of the customer for any questions or concerns from the Commission.
- Email notifications to the licensee when the license is granted by the FCC.

- Filing of the required "Completion of Construction" notification with the FCC upon written approval from the licensee and notification of the filing via email.

SPECIAL CONSIDERATIONS

On all microwave radio paths traversing urban areas there exists the possibility of multiple on- and off-path structural reflections which generate long-delayed echoes, as well as "terrain scatter" RF intra- and inter-system interference. Long delayed, low-level echoes have no effect on digital radio performance; however, the terrain scatter mechanism cannot be accurately predicted nor precisely measured without an extensive and expensive field trial. Consequently, this mechanism is specifically excluded from all current industry-wide path survey and frequency coordination performance guarantees.

The structure supporting the microwave antenna can take many forms. The antenna is most often mounted on a tower, but can be mounted on a variety of structures such as roof tripods, penthouse wall, wooden telephone pole or metal monopole. It is recommended that the customer or end user conduct a structural analysis of the support structure to determine if the structure will support the additional loading imposed by the antenna and its mount. The structure must also meet the twist and sway requirements per EIA/ANSI 222G.

Certain geographic areas / frequency bands are restricted due to Radio Astronomy use or DOD and other Government top-secret installations. Even outside the absolute exclusion zone, there are areas where 18 GHz can be cleared by DOD. Coordinators must file applications and wait for the FCC to contact NTIA and NTIA to contact IRAC to analyze these before FCC licenses are granted. If the application is rejected, the proposed microwave link could be subject to redesign with another frequency band.

SITE INFORMATION - Norcom

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	36	'	51.66 "N
122	°	11	'	30.74 "W
Elev:		120	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	36	'	51.5 "N
122	°	11	'	33.0 "W
Elev:		137	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 450 110th Avenue NE
City: Bellevue
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☒Existing ☐New
- Tower Type: ☐Guyed ☐Self Supporting ☐Monopole ☒Rooftop ☐Water tank ☐Other: _____

The site is an existing building rooftop that will have antennas mounted at 108 feet on the roof. The radio equipment will be installed in the existing equipment room in the building.

Antenna Mounting Considerations for each path:

- Path to Bellevue FS#9: The proposed main antenna will be installed at 108 ft on the roof of the building. It is important that the antenna be installed on the roof so that the path traverses between the nearfield residential building and the newly built Marriott hotel so the path can maintain line of site to Bellevue FS#9.
  - Centerline: 108 feet
  - Azimuth: 170.51°
  - Tilt Angle: +0.72°

Transmission Line Considerations for each path:

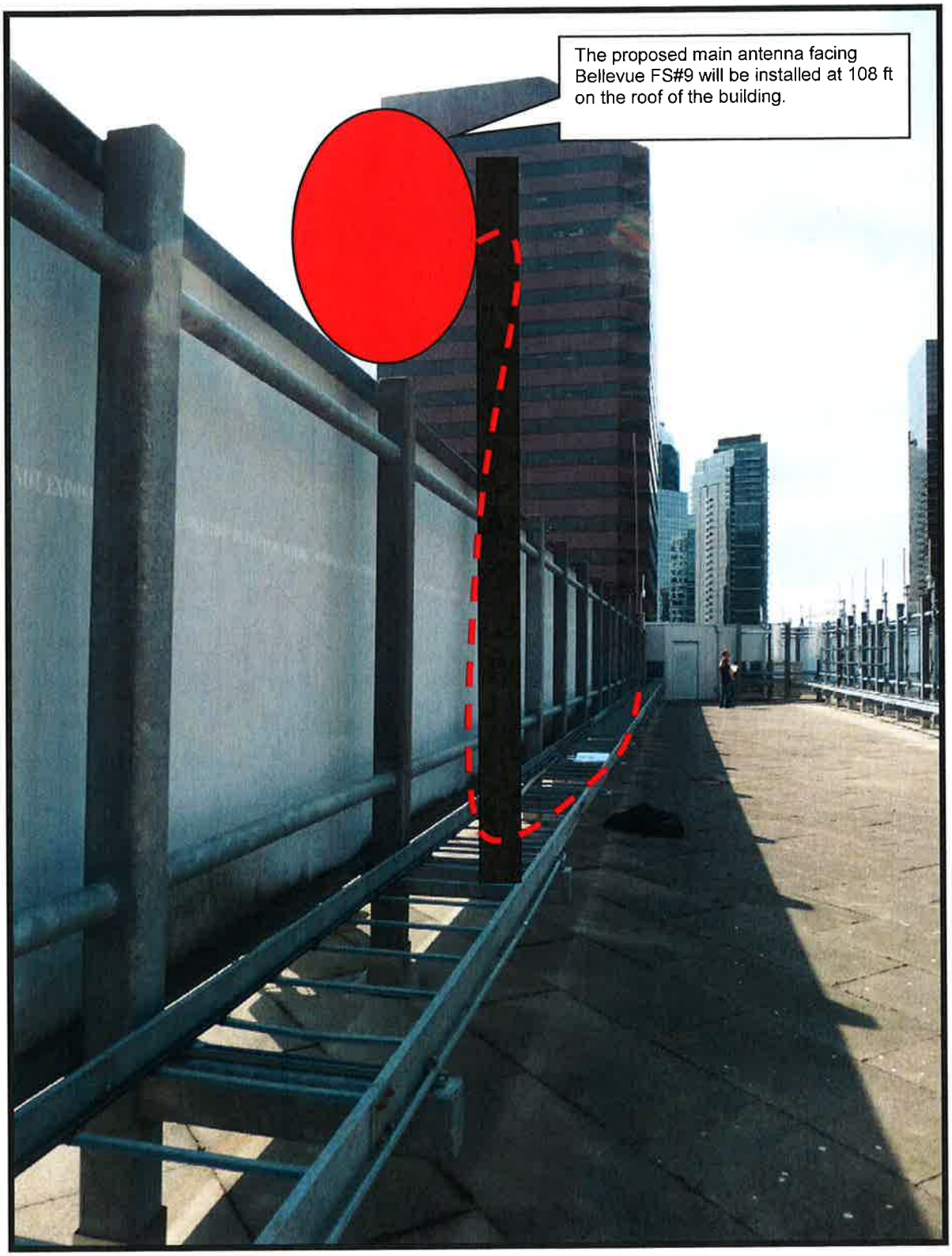
- Path to Bellevue FS#9: An estimated 235 feet of waveguide is required from the proposed antenna location on the roof to the radio in the equipment room.
- Cable Ladder: ☒Use Existing ☐Recommended ☐Not Required
- Cable Bridge: ☒Use Existing ☐Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☐Recommended ☒Not Required
- Entry Ports: ☒Use Existing ☐New Entry Port Required
- Ground Bus Bar: ☒Use Existing ☐New Bus Bar Required

Site Access Considerations:

The site is located on a building rooftop in a metropolitan area. A four wheel drive vehicle is not required. Contact PSERN with advance notice for site access.

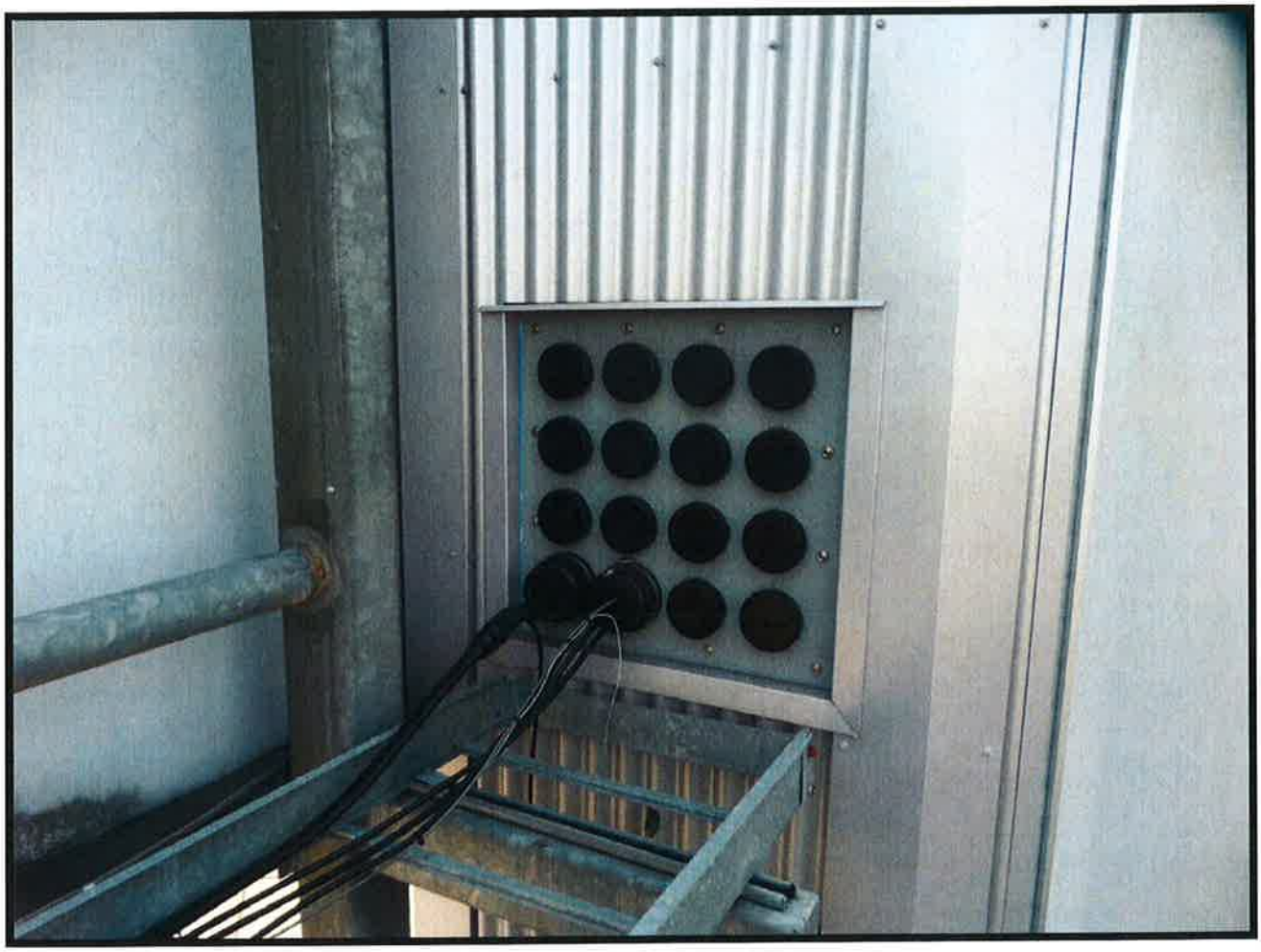
SITE PHOTOS

View of the Norcom Building



Norcom - View of the Proposed Antenna Location facing Bellevue FS#9

View of the Exterior Waveguide Run

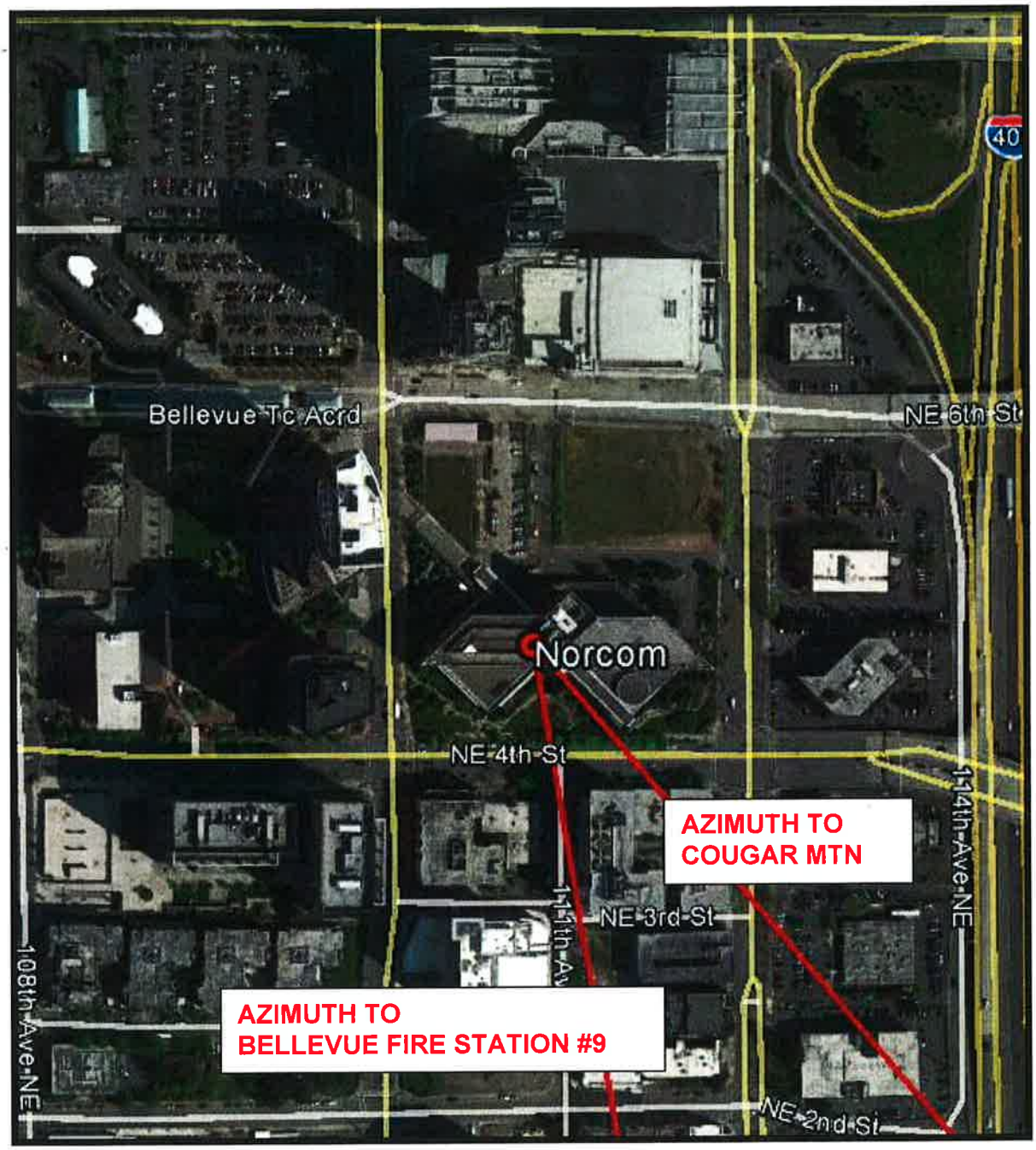


View of the Exterior Waveguide Entry Port

Existing Racks are to be Removed and Replaced with New Radio Racks

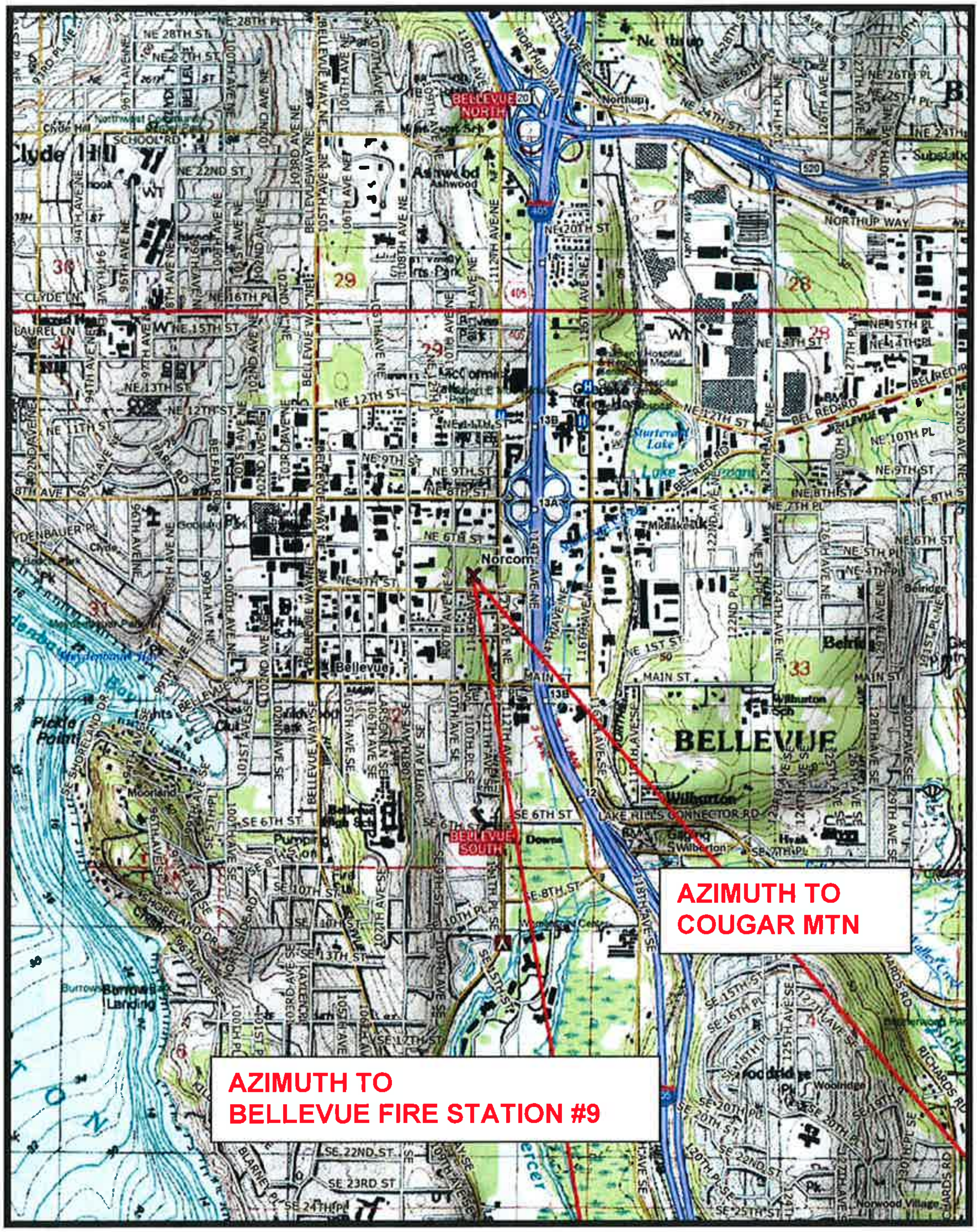
View of the Azimuth facing Bellevue FS#9

MAP EXTRACTS



Norcom

NAD 83						
47	°	36	'	51.5	"N	State: Washington
122	°	11	'	33.0	"W	County: King
Elev:		137	ft			Ref Map: Bellevue South



Norcom

NAD 83						
47	°	36	'	51.5	"N	State: Washington
122	°	11	'	33.0	"W	County: King
Elev:		137	ft			Ref Map: Bellevue South

SITE INFORMATION – Bellevue FS#9

SITE DESCRIPTION

Customer Supplied Site Coordinates, NAD 83				
47	°	32	'	28.83 "N
122	°	10	'	28.26 "W
Elev:		433	ft	

Note: Site coordinates are verified by referencing the tower location to landmarks and reference points that are depicted on the USGS 7 ½ minute topo maps for the area. GPS readings may also be used to supplement the USGS topo data. Field verified ground elevations and/or site coordinates may differ from frequency coordinated/FCC licenses values. This is due to matching of existing ASR/FCC licenses where applicable.

Field Verified Site Coordinates, NAD 83				
47	°	32	'	30.5 "N
122	°	10	'	28.6 "W
Elev:		436	ft	

ASR, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

FCC Licensed Coordinates, NAD 83		
°	'	"N
°	'	"W
Elev:	ft	m

Street Address: 12412 Newcastle Way
City: Newcastle
County: King
State: Washington

Tower Registration Number: N/A
Call Sign: N/A

Tower Considerations:

- Tower Structure: ☐Existing ☒New
- Tower Type: ☐Guyed ☐Self Supporting ☒Monopole ☐Rooftop ☐Water tank ☐Other: _____

The tower is a proposed monopole, however a minimum centerline of 160 feet is required to meet the design clearance criteria of this path due to trees along the paths.

Antenna Mounting Considerations for each path:

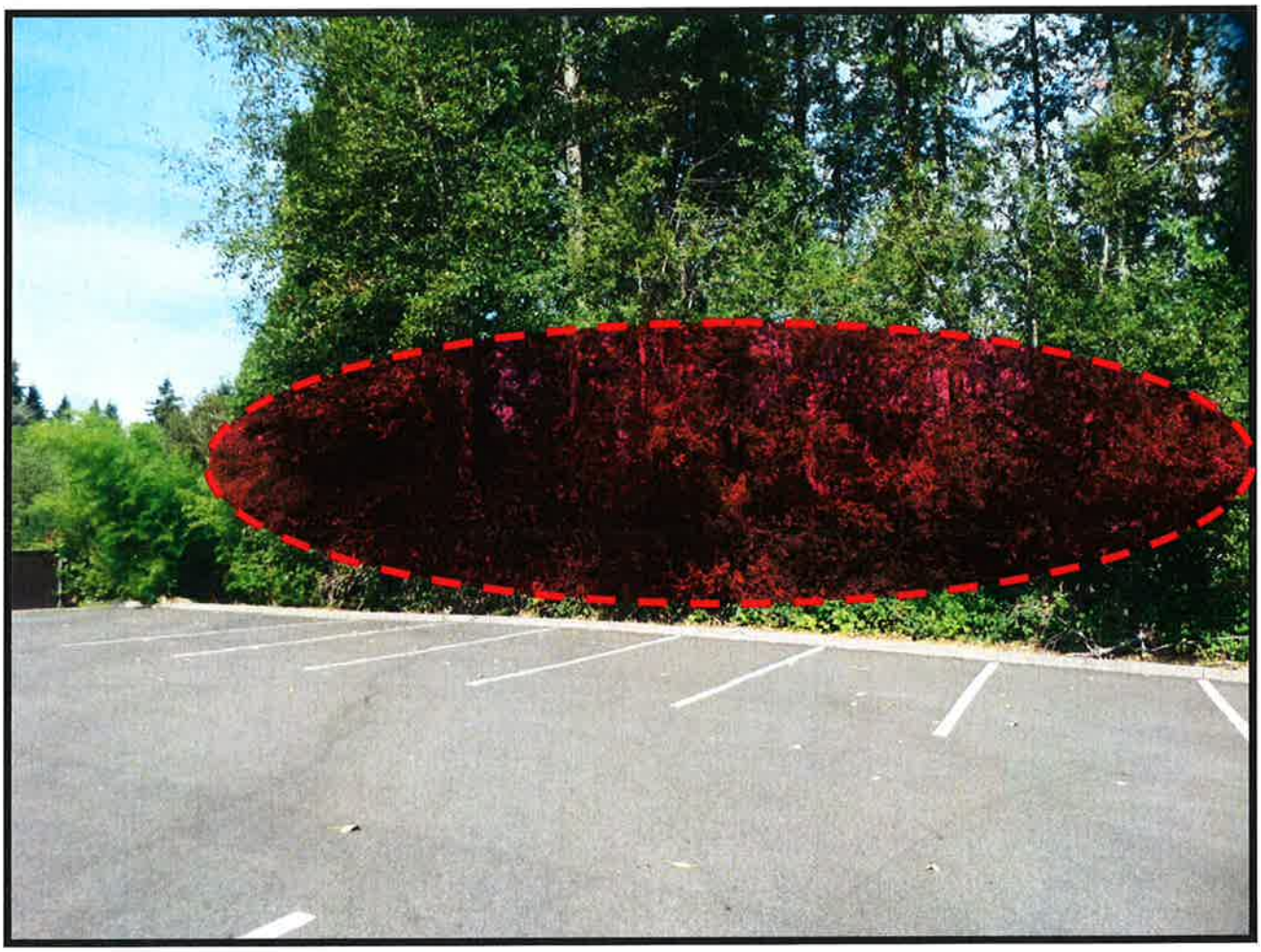
- Path to Norcom: The proposed main antenna will be installed at 160 ft on the north face of the monopole tower.
  - Centerline: 160 feet
  - Azimuth: 350.53°
  - Tilt Angle: -0.78°

Transmission Line Considerations for each path:

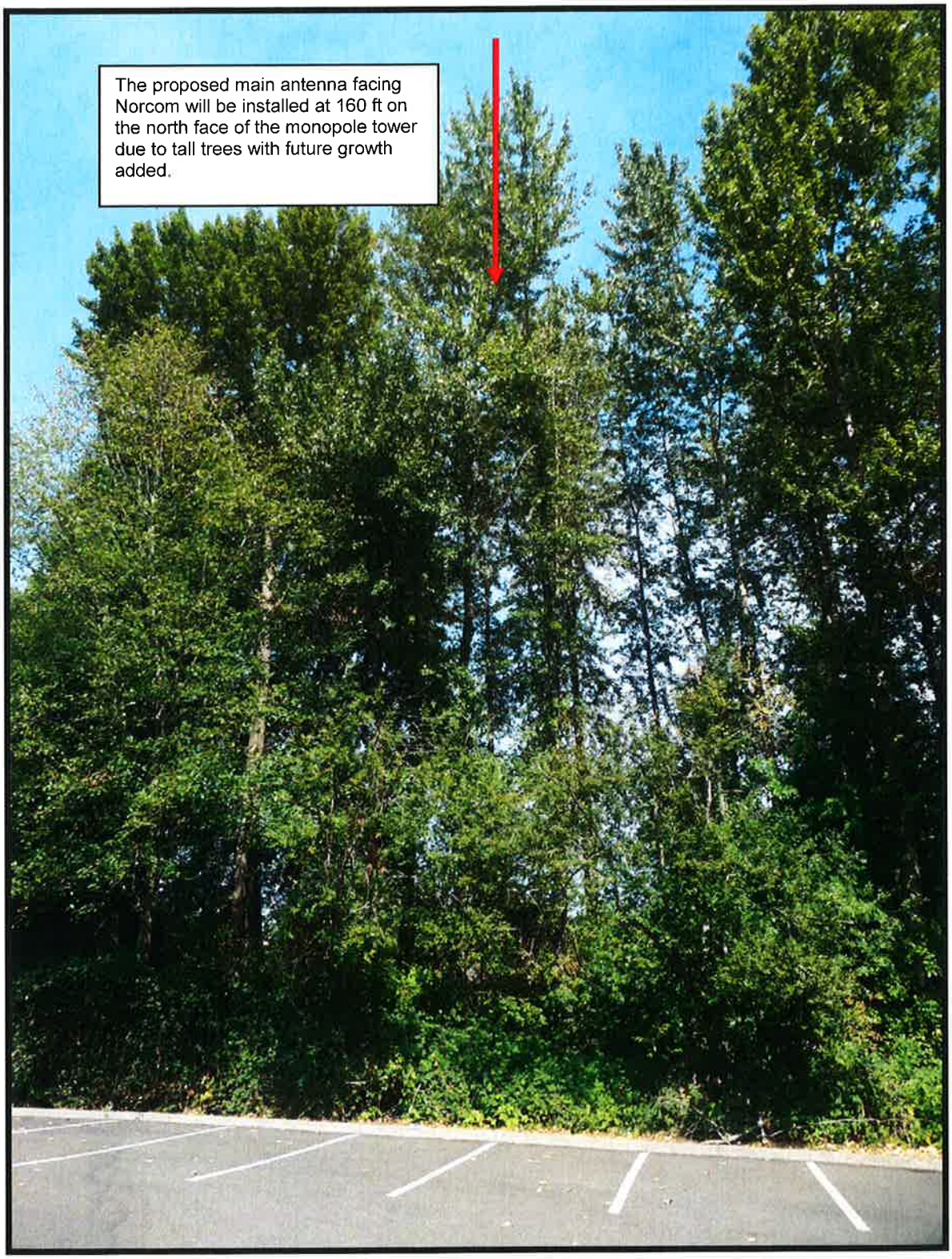
- Path to Norcom: An estimated 220 feet of cable is required from the proposed antenna height to the radio in the equipment room.
- Cable Ladder: ☐Use Existing ☒Recommended ☐Not Required
- Cable Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Ice Bridge: ☐Use Existing ☒Recommended ☐Not Required
- Entry Ports: ☐Use Existing ☒New Entry Port Required
- Ground Bus Bar: ☐Use Existing ☒New Bus Bar Required

Site Access Considerations:
The site is located off of a paved parking lot. A four wheel drive vehicle is not required. Contact PSERN with advanced notice for site access.

SITE PHOTOS



View of the Area to be Cleared to Make Room for Tower Compound – Behind Bellevue Fire Station #9 Building

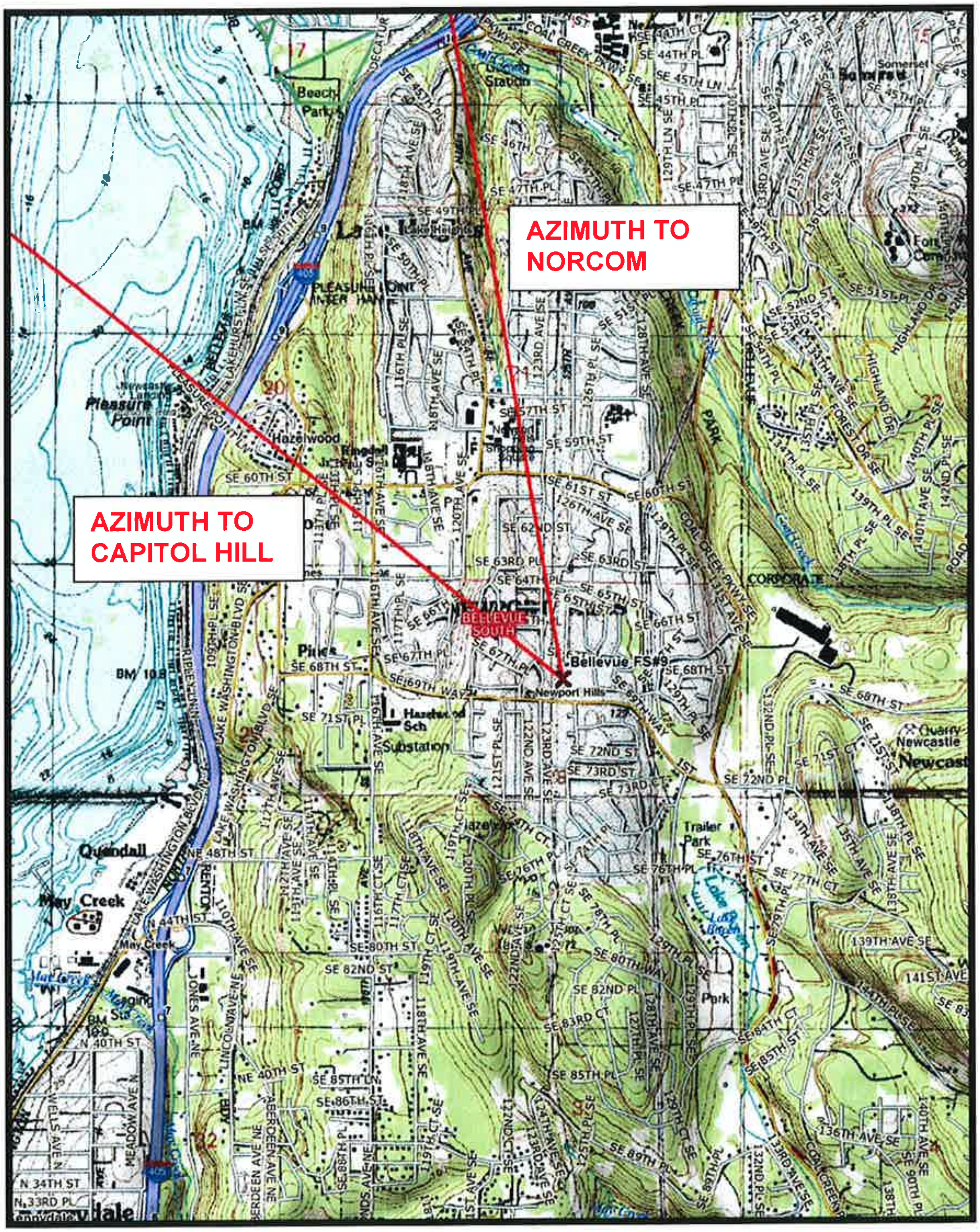


Bellevue FS#9
View of the Azimuth to Norcom

MAP EXTRACTS

Bellevue FS#9

NAD 83							
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South



Bellevue FS#9

NAD 83							
47	°	32	'	30.5	"N	State: Washington
122	°	10	'	28.6	"W	County: King
Elev:		436	ft			Ref Map: Bellevue South

PATH INFORMATION

PATH DESCRIPTIONS

Norcom to Bellevue FS#9

Path Length: 5.08 Miles
Frequency Band: 11 GHz

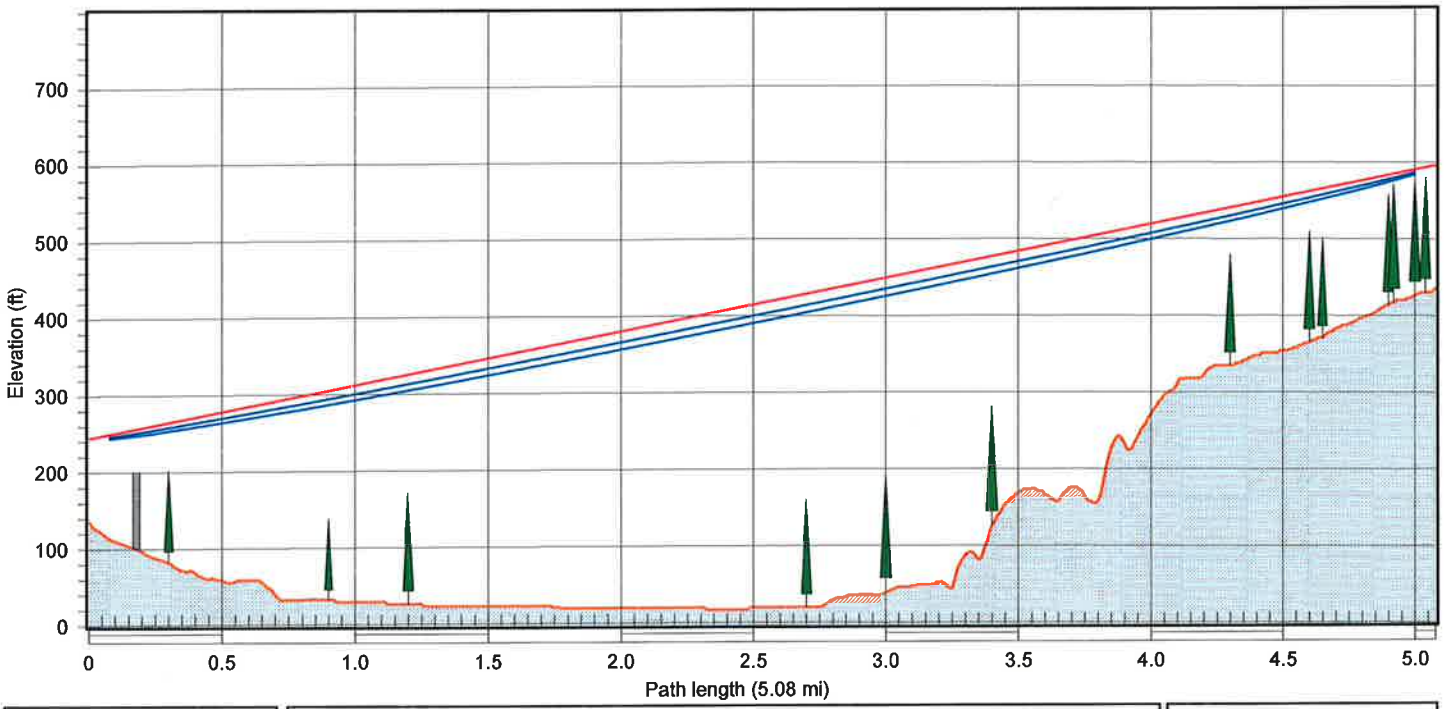
General Path Description:
The Norcom site is an existing building rooftop and the Bellevue FS#9 site is a proposed site. The critical points along the path are the tall nearfield trees close to Bellevue FS#9. It is important that the antenna at Norcom be installed on the roof so that the path traverses between the nearfield residential building and the newly built Marriott hotel so the path can maintain line of site to Bellevue FS#9. The path meets the design clearance criteria.

Path Climate considerations:
The path is located in an area that is considered "average" for radio wave propagation. The area is considered to have an oceanic climate. Typically winters are cool and wet with summers being warm and mostly dry. Precipitation averages around 37 inches per year with the largest amount of rainfall from November to February. Snowfall is typical but heavy snows are rare except at higher elevations of the mountains and their surrounding areas.

	Norcom	Bellevue FS#9
Latitude	47 36 51.50 N	47 32 30.50 N
Longitude	122 11 33.00 W	122 10 28.60 W
True azimuth (°)	170.51	350.53
Vertical angle (°)	0.72	-0.78
Elevation (ft)	137.00	436.00
Antenna model	HP4-107 (TR)	HP4-107 (TR)
Antenna file name	3172	3172
Antenna gain (dBi)	40.40	40.40
Antenna height (ft)	108.00	160.00
TX line model	EW90	EW90
TX line unit loss (dB/100 ft)	3.06	3.06
TX line length (ft)	235.00	220.00
TX line loss (dB)	7.20	6.74
Connector loss (dB)	0.39	0.39
Circulator branching loss (dB)	0.40	0.40
Frequency (MHz)	11200.00	
Polarization	Horizontal	
Path length (mi)	5.08	
Free space loss (dB)	131.70	
Atmospheric absorption loss (dB)	0.13	
Net path loss (dB)	66.55	66.55
Configuration	NP	NP
Radio model	I600V3H11_40M 64Q 156Mb	I600V3H11_40M 64Q 156Mb
Radio file name	i3h11_40m_100t	i3h11_40m_100t
TX power (watts)	0.63	0.63
TX power (dBm)	28.00	28.00
Emission designator	40M0D7W	40M0D7W
EIRP (dBm)	60.41	60.87
RX threshold criteria	1E-6 BER	1E-6 BER
RX threshold level (dBm)	-73.25	-73.25
Receive signal (dBm)	-38.55	-38.55
Thermal fade margin (dB)	34.70	34.70
Dispersive fade margin (dB)	51.70	51.70
Dispersive fade occurrence factor	1.00	

	Norcom	Bellevue FS#9
Effective fade margin (dB)	34.62	34.62
Climatic factor	1.00	
Terrain roughness (ft)	133.04	
C factor	0.28	
Average annual temperature (°F)	43.72	
Fade occurrence factor (Po)	1.028E-003	
Worst month multipath availability (%)	99.99996	99.99996
Worst month multipath unavailability (%)	0.00004	0.00004
Worst month multipath unavailability (sec)	0.93	0.93
Annual multipath availability (%)	99.99999	99.99999
Annual multipath unavailability (sec)	2.45	2.45
Annual 2 way multipath availability (%)	99.99998	
Annual 2 way multipath unavailability (sec)	4.89	
Polarization	Horizontal	
Rain region	C-96 Temp. Maritime	
Rain rate (mm/hr)	140.22	
Flat fade margin - rain (dB)	34.70	
Rain attenuation (dB)	34.71	
Annual rain availability (%)	99.99998	
Annual rain unavailability (min)	0.12	
Annual rain + multipath availability (%)	99.99996	
Annual rain + multipath unavailability (min)	0.21	

Multipath fading method - Vigants - Barnett
Rain fading method - Crane



Norcom	
Latitude	47 36 51.50 N
Longitude	122 11 33.00 W
Azimuth	170.51°
Elevation	137 ft ASL
Antenna CL	108.0 ft AGL

Frequency (MHz) = 11200.0
K = 1.33
%F1 = 60.00, 100.00

Bellevue FS#9	
Latitude	47 32 30.50 N
Longitude	122 10 28.60 W
Azimuth	350.53°
Elevation	436 ft ASL
Antenna CL	160.0 ft AGL

City of Bellevue

Bill To Form

Permit/Approval #

Your application is a type that requires deposit(s) and may have billable hours.
This means you may receive bills in the mail for review or inspection time spent on your project, in addition to the fees you pay at submittal or will be required to pay at or prior to issuance.

Please send the bills to:

Name/Company:	Odelia Pacific Corporation
Attention:	Sarah Telschow
Billing Address:	5506 6th Avenue South, Suite 202
City, State and Zip:	Seattle, WA 98108
10-digit Phone #:	206.979.6268

- For address changes: Notify Billing Customer Service (425-452-6860)
- For ownership changes: The new owner must provide Billing Customer Service with the ownership transfer date before any billing information can be changed.
- For billing liability changes: Contact Billing Customer Service (425-452-6860)
- City/School/Agency Projects: Please use "City Applicant / Other Agency Form"

Signature: Sarah Telschow, AICP Digitally signed by Sarah Telschow, AICP DN: cn=Sarah Telschow, AICP, o=Odelia Pacific Corporation, ou, email=stelschow@odelia.com, c=US Date: 2016.08.03 16:07:08 -07'00' Date: 8/3/16

Jurisdiction: Bellevue
Project Name: King County PSERN - Bellevue Station 9
Application ID: 350825

Supplemental Name: Acknowledgement

I understand as the applicant, that the City of Bellevue will not deem my application received or submitted until all required fees have been paid in full. Permit review and associated completion timelines will not commence during the period of non-payment.

Yes, I acknowledge

Puget Sound Emergency Radio Network (PSERN)

Bellevue Station 9 - Meeting
Thursday, November 10, 2016

Welcome to the Bellevue Station 9 - Meeting

PSERN
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Coverage • Capacity • Capability • Connectivity

What is King County Puget Sound Emergency Radio Network (PSERN)?

- PSERN is a regional public safety emergency radio communications system that will replace the current aging system with a new, modern network.

- In 2015, over 65% of King County voters supported the PSERN Levy to improve emergency communications infrastructure throughout King County.

Why Are Upgrades to the Emergency Radio System Necessary?

- The current system is more that 20 years old and needs to be upgraded to ensure reliability for first responders to coordinate with each other during emergencies.

- An improved function of the upgraded **PSERN** system is it's reliability during emergency and/or disaster events. It has been designed to be fully operational during events such as major earthquakes or widespread power outages.

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Who Uses/Benefits from the Upgraded System?

- The City of Bellevue and surrounding communities will directly benefit from the proposed facility and the upgraded emergency radio system. This area of Bellevue and Newcastle is currently underserved by the existing outdated emergency radio network and is a known hazard to area emergency responders.

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Project Information

- King County PSERN is proposing to install a 170' emergency communications tower and associated equipment on the Bellevue Fire Station 9 property located at 12412 Newcastle Way.

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Balloon Test Results

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View #1

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Coverage • Capacity • Capability • Connectivity

View #1 - Photo Simulation of Tower

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PUGET SOUND EMERGENCY RADIO NETWORK
Coverage • Capacity • Capability • Connectivity

View #1 - Photo Simulation of Tower (2 colors for tower)

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Coverage • Capacity • Capability • Connectivity

View #2

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Coverage • Capacity • Capability • Connectivity

View #2 - Photo Simulation of Tower

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View #3

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Coverage • Capacity • Capability • Connectivity

View #3 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #4

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View #4 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #5

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Coverage • Capacity • Capability • Connectivity

View #5 - Photo Simulation of Tower

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View #6

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Coverage • Capacity • Capability • Connectivity

View #6 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #7

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Coverage • Capacity • Capability • Connectivity

View #7 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #8

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

View #8 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #9

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Coverage • Capacity • Capability • Connectivity

View #9 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #10

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Coverage • Capacity • Capability • Connectivity

View #10 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #11

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Coverage • Capacity • Capability • Connectivity

View #11 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #12

PSERN
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Coverage • Capacity • Capability • Connectivity

View #12 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #13

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Coverage • Capacity • Capability • Connectivity

View #13 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #14

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

View #14 - Photo Simulation of Tower

PSERN
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View #15

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

View #15 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #16

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Coverage • Capacity • Capability • Connectivity

View #16 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #17

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Coverage • Capacity • Capability • Connectivity

View #17 - Photo Simulation of Tower

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View #18

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Coverage • Capacity • Capability • Connectivity

View #18 - Photo Simulation of Tower

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View #19

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Coverage • Capacity • Capability • Connectivity

View #19 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #20

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Coverage • Capacity • Capability • Connectivity

View #20 - Photo Simulation of Tower

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View #21

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Coverage • Capacity • Capability • Connectivity

View #21 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #22

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Coverage • Capacity • Capability • Connectivity

View #22 - Photo Simulation of Tower

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View #23

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Coverage • Capacity • Capability • Connectivity

View #23 - Photo Simulation of Tower

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Coverage • Capacity • Capability • Connectivity

View #24

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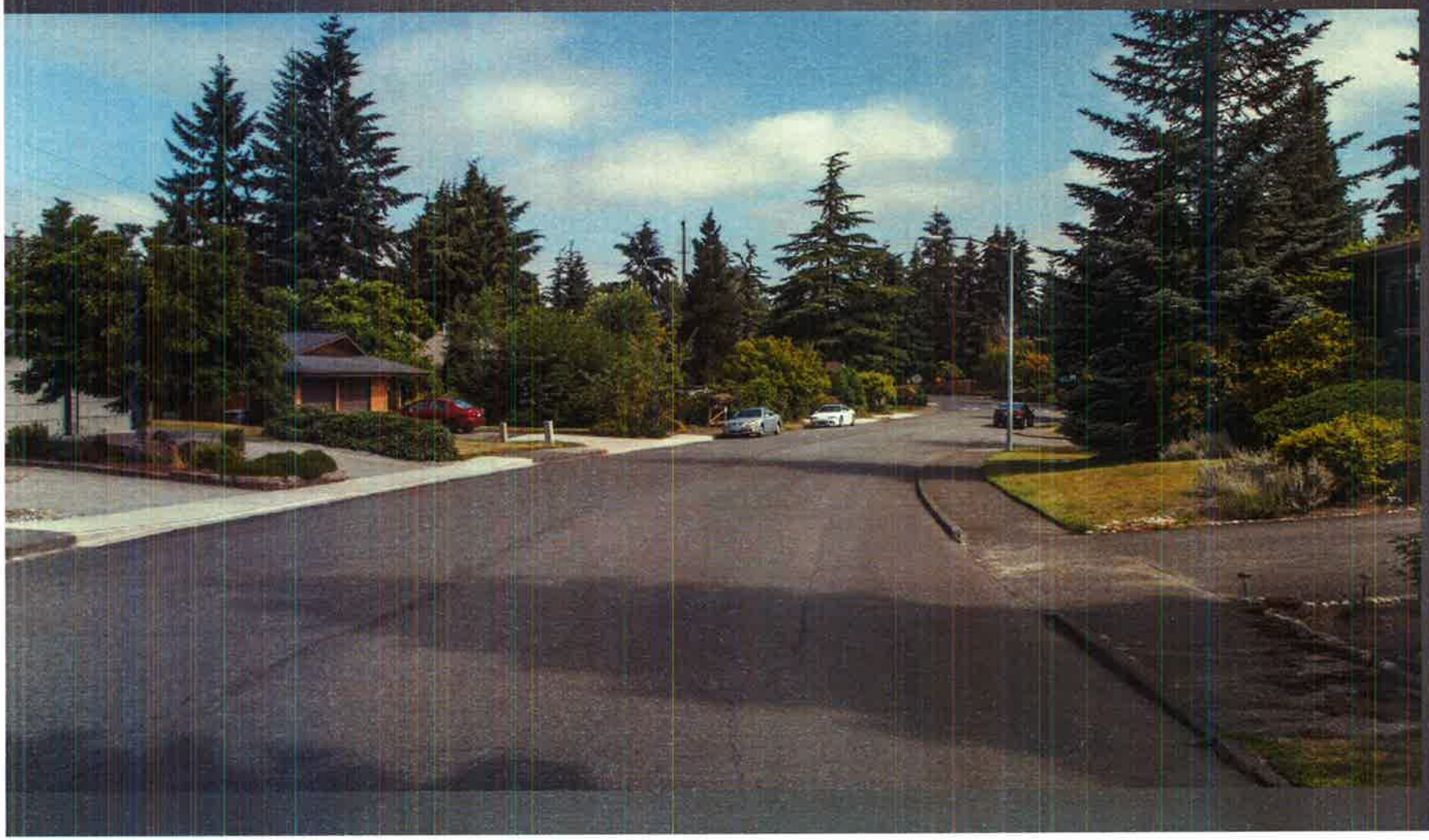
Coverage • Capacity • Capability • Connectivity

View #24 - Photo Simulation of Tower



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Coverage • Capacity • Capability • Connectivity

View #25 - Tower Not Seen

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

View #26 - Tower Not Seen

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PUGET SOUND EMERGENCY RADIO NETWORK
Coverage • Capacity • Capability • Connectivity

View #27 - Tower Not Seen

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

View #28 - Tower Not Seen

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

View #29 - Tower Not Seen

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

View #30 - Tower Not Seen

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

View #31 - Tower Not Seen

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

View #32 - Tower Not Seen

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

View #33 - Tower Not Seen

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Coverage • Capacity • Capability • Connectivity

View #34 - Tower Not Seen

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Coverage • Capacity • Capability • Connectivity

View #35 - Tower Not Seen

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Coverage • Capacity • Capability • Connectivity

View #36 - Tower Not Seen

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View #37 - Tower Not Seen

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View #38 - Tower Not Seen

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

View #39 - Tower Not Seen

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Common Questions and Concerns

- Why is this site needed?
- Why does the tower need to be 170'?
- Noise
- Interference
- Health

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Why is this site needed?

- The proposed tower has been designed and located to provide the best possible emergency radio coverage to Bellevue and Newcastle and surrounding communities.

- This area is currently underserved by the current emergency radio network and is a known hazard to area first responders.

- Locating this facility at the Bellevue Fire Station provides the best possible emergency radio coverage to the surrounding community and will provide a clear line of site to adjacent emergency radio network sites.

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Why does the tower need to be 170'?

- The Emergency Radio Network uses redundant microwave paths as the primary means of communication.
- Microwave links are the most reliable means of communication after a major disaster: roads can buckle or break, causing fiber or other terrestrial communication to fail, but will not affect microwave.
- The height and location of the proposed tower are necessary to provide microwave links to Bellevue City Hall and the Capitol Hill (Seattle).

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Noise Concerns

- Proposing to install an equipment shelter and generator.
- The site is required to meet Bellevue Noise Requirements. An acoustical study has been completed which documents that the site will meet noise standards with the proposed sound wall.
- The generator runs weekly for maintenance (about 20 minutes) and is typically scheduled for mid-day during the week.

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Interference

- Emergency radio will not impact and/or affect telephone, television signals, pace makers, radio, wi-fi, etc.
- The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

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Emissions & Health

Radio Frequency (RF) Energy is Non-Ionizing

- RF energy such as that used in cellular communication is at least 1 million times too low to directly break chemical bonds or disrupt macromolecules such as DNA.

- With few specialized exceptions, the only confirmed hazards of RF EMF are associated with excessive heating of tissue.

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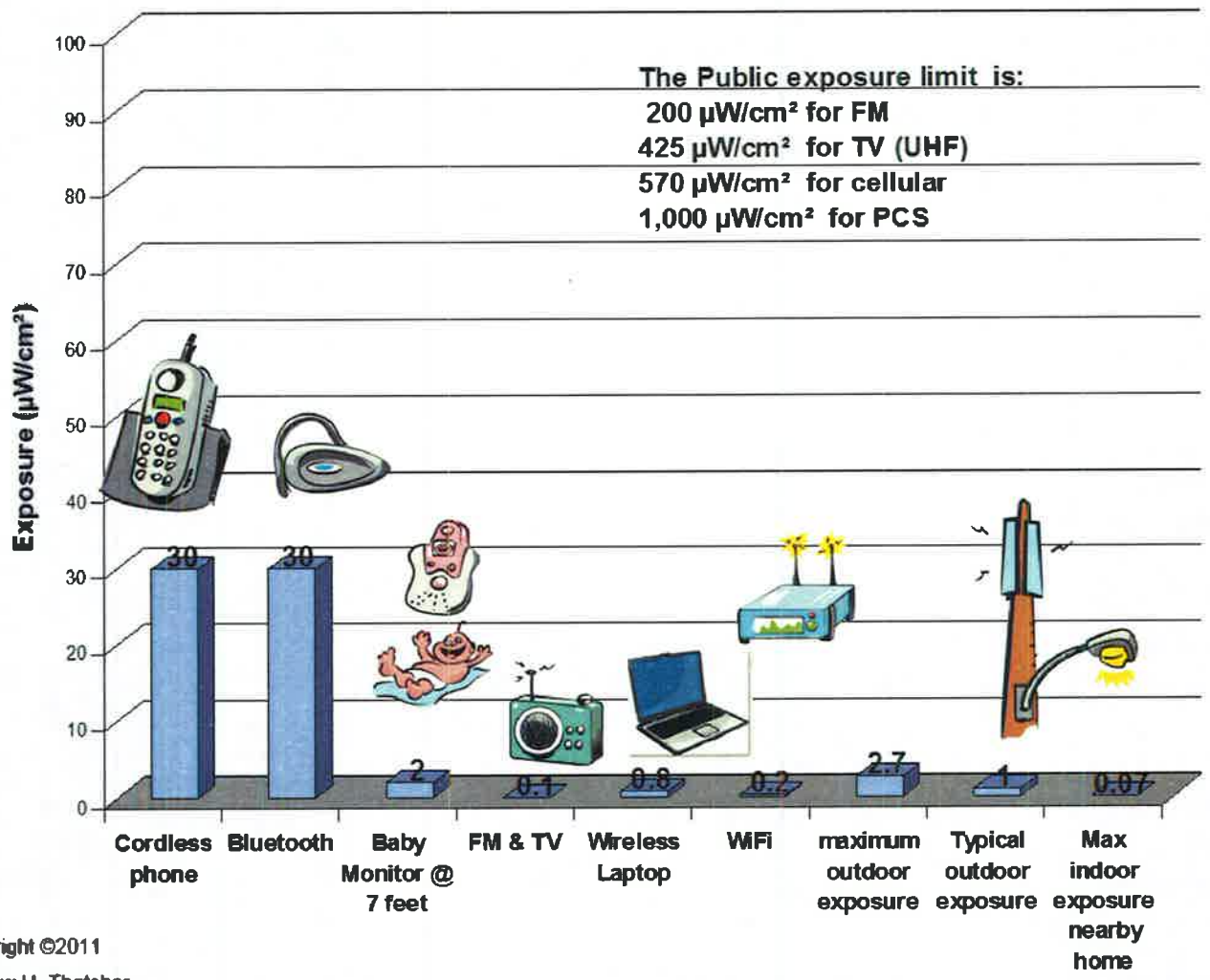
Typical Radiofrequency Exposures in our Lives



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Andrew H. Thatcher,

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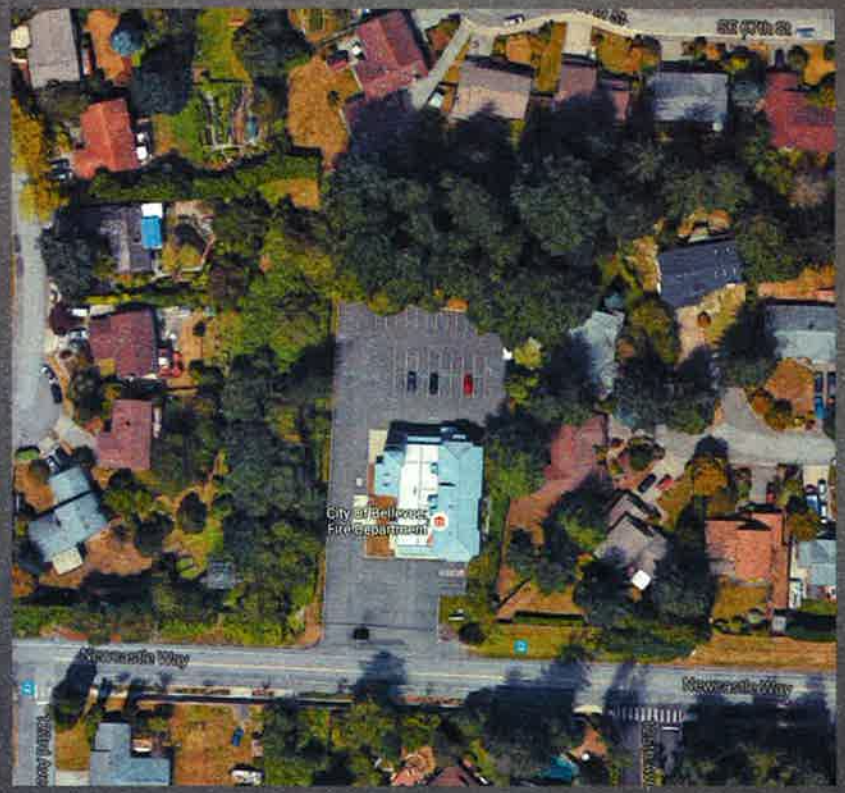
Proposed Bellevue Fire Station Site

- Calculated Maximum Outdoor Exposure Rates are 0.003 mW/cm² or ~0.5% of the FCC general public limit.



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Basis of Standards

- Current standards are designed to provide protection to all age groups, including infants and children, on a continuous basis (24 hours/day, 7 days/week)*
- Basis of standard is to prevent a thermoregulatory response which is at an absorption rate of 4 W/kg. A factor of 50 reduction from this rate serves as the basis for the general public.
- Numerous expert reviews have affirmed the basis of this standard and no other adverse health effects have been identified.

*Direct quote from Health Canada press release March 13, 3015 - http://news.gc.ca/web/article-en.do?nid=949109

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Standards Used in the World

- International Commission of Non Ionizing Radiation Protection (ICNIRP) Guidelines (more than 60 countries)
  - Re-affirmed in 2009
  - Argentina, Australia, Austria, Brazil, Colombia, Croatia, Czech Republic, Denmark, Ecuador, France, Finland, Germany, Hong Kong, Japan, Hungary, Ireland, Malaysia, Morocco, Netherlands, New Zealand, Norway, Oman, Pakistan, Paraguay, Peru, Philippines, Portugal, Romania, Rwanda, Saudi Arabia, Singapore, Slovak, Slovenia, South Africa, South Korea, Spain, Sweden, Thailand, Taiwan, Tanzania, Turkey, Uganda, UK, Venezuela, etc.
- FCC Standard: Bolivia, Canada, Estonia, Panama, USA
- Below ICNIRP and IEEE
  - Belarus, Bulgaria, China, Lithuania, Poland, Russia
  - Belgium, Chile, Greece, India, Israel, Italy, Liechtenstein, Switzerland

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Radio Frequency Emissions - Summary

- Radiofrequency exposures have been studied since the early 1950's.
- Current analysis shows that exposures the relatively new technology is no different than exposures from older FM and TV exposures.
- This area of study is well established – over 25,000 published studies.
- The exposure from towers to public is too small to result in any effect. No replicated studies have identified any non-thermal effects at these levels nor is there any reason to believe that effects of any type would be observed at these levels

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Community Questions

Please complete a Comment Sheet for any additional comments/questions.

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WELCOME

PUBLIC MEETING
KING COUNTY
PUGET SOUND EMERGENCY RADIO NETWORK (PSERN)
NOVEMBER 10, 2016

City Point

AGENDA

- Introductions: City of Bellevue staff, Applicant
- City Presentation
- Applicant Presentation
- Public Comment – 3 minutes per speaker
- Response to Public Comment

Note: If you would like to become a party of record and receive notice of the decision, please provide name/mailing address or email address on the sign up sheets. You may also provide written comments.

Thank you.

CITY PRESENTATION
PURPOSE OF THE PUBLIC MEETING

- The purpose of the meeting tonight is to listen to neighbor concerns regarding the application. We'll use a timer (3 minutes) for each comment.

- To keep the meeting moving, we'll listen to everyone's concerns without a question and answer (Q&A) period.

- When all neighbors have spoken, there will be time for response by the City and the applicant.

- You may also talk to City staff or the applicant after the meeting for more detailed discussion.

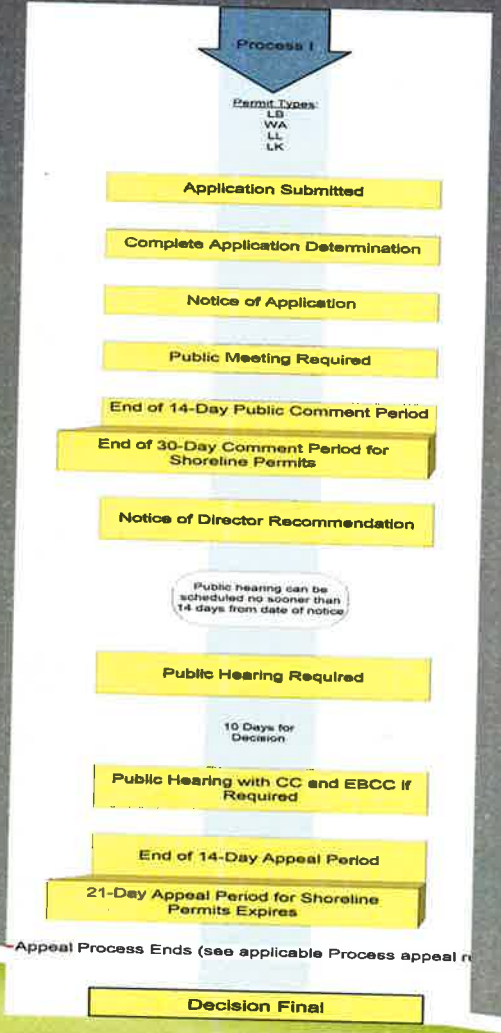
PUBLIC MEETING VS. PUBLIC HEARING

Tonight is a Public Meeting – not a Public Hearing.

- Public Meeting – This is a Public Meeting held to listen to neighbor concerns. There is no decision tonight. The City is still reviewing the project. The Hearing Examiner makes the decision.

- Public Hearing – The Public Hearing is a formal hearing by the Hearing Examiner who reviews all of the information at the end of the process in order to make a decision.

PROCESS FLOWCHART



APPLICANT PRESENTATION

PUBLIC COMMENT

RESPONSE

THANK YOU
FOR ATTENDING TONIGHT

SERN Public Me

E-mail

Do you wish to speak?	Name	~~Street Address~~
☒ Yes ☐ No	Pat & David Hayes	davidpathayes@ho mail.com 12506
☐ Yes ☐ No	YEFIM GOLDENBERG	Y. GOLDENBERG @ COMCAST.
☑ Yes ☐ No	John Custy	JHCusty @ Yahoo. c
☑ Yes ☐ No	Thomas Mehrkens	tmehrkens@gma
☐ Yes ☐ No	Drew Thatcher	On behalf of RF Engineer
☐ Yes ☐ No	Paul Davison	PDavison@ Bellevuewa
☑ Yes ☐ No	Richard McGehee Elizabeth McGehee	lizmcgehee@q.com
☐ Yes ☐ No	Sally Nichols	spnichols@ bellevu STAFF
☐ Y ☑ N	Marined iliuc	mailiuc@
☐ Y ☐ N		
☐ Y ☐ N		

Parties of Record
PSERN

10-26-16 by cjh

John Custy
2626 SE 68th Place
Bellevue, WA 98006

Patricia & David Hayes
12506 SE 67th Street
Bellevue, WA 98006

Marinell ILIUC
6583 125th Avenue SE
Bellevue, WA 98006

Tom Mehrkens
12507 SE 67th Street
Bellevue, WA 98006

Yefim D. Goldenberg
1215 SE 67th Street
Bellevue, WA 98006

James Peterson
6575 125th Avenue SE
Bellevue, WA 98006

Richard and Elizabeth McGehee
12501 SE 67th Street
Bellevue, WA 98006

Maria J. & Michael K. Mattson
6567 125th Avenue SE
Bellevue, WA 98006

Sent reply - letter in mail
10/27/16

list from paper letters sent in - cjh

City of Bellevue

Post Office Box 90012 ▪ Bellevue, Washington ▪ 98009 9012

October 27, 2016

Re: King County Puget Sound Emergency Radio Network (PSERN)
Bellevue Fire Station #9
16-139244-LB

Dear Neighbor:

Thank you for your comments which I have received. You are now a party of record in the official file and will receive future notices regarding this project.

Responses to your submitted comments will be noted in the staff report, by subject area or noted individually, as appropriate.

We appreciate your feedback and thank you for your interest in the project.

Sincerely,

Carol Hamlin

Carol Hamlin
Senior Planner

Date: Oct 27, 2016

RECEIVED
OCT 26 REC'D
Development Services

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

✓ the potential harmful emissions from the proposed antennas that will be mounted on the pole.

✓ the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

✓✓ the effects the harmful emissions would cause to children and adults who live in an around the area.

✓✓ the potential loss of home values to my neighbors and me within 300 feet of the site.

✓ the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

✓ the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

✓✓ the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

✓ the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

✓ other: Noise of generator, location way to close to my property!

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is John Custy

My address is 12626 SE 68th Pl
Bellevue, WA
98006

I can be reached at 425-643-5325 (phone)
JHCusty@Yahoo.com (email)

Thank you for taking my concerns into consideration.

Sincerely,

John H Custy

RECEIVED
OCT 20 REC'D
Development Services

Date: OCT. 17, 2016

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

✓ the potential harmful emissions from the proposed antennas that will be mounted on the pole.

✓ the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

✓ the effects the harmful emissions would cause to children and adults who live in an around the area.

✓ the potential loss of home values to my neighbors and me within 300 feet of the site.

✓ the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

✓ the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

✓ the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

✓ the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

other: PRESENTLY CITY LIGHT HAS ITS HIGH VOLTAGE SYSTEM RUNNING THROUGH THIS SAME NEIGHBORHOOD WHICH IS ALREADY DETRIMENTAL TO OUR HOME VALUE. ENOUGH IS ENOUGH!

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is JAMES PETERSON

My address is 6575-125TH AVE SE
BELLEVUE, WA 98006

I can be reached at 425 641 5946 (phone)
JIMPETERSON427@COMCAST.NET (email)

Thank you for taking my concerns into consideration.

Sincerely,

RE: King County Puget Sound Emergency Radio Network (PSERN) - Bellevue Fire Station #9
Location: 12412 Newcastle Way Subarea: Newport Hills File Number: 16-139244-LB

Dear Ms. Carol Hamlin,

My name is Tom Mehrkens and I live at 12507 SE 67th Street, directly northeast of Bellevue Fire Station #9. I am writing you because of a concern I have for all of us who would be directly affected by a King County Plan to construct a 170 foot communications pole in our backyard.

I have concerns about this plan for the following reasons:

1. The potential harmful RF the emissions from the proposed antennas that will be mounted on the pole.
2. The uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful RF emissions.
3. The effects the harmful emissions would cause to children and adults who live in an around the area.
4. The potential loss of home values to my neighbors and me within 300 feet of the site. I live approximately 150 feet away from the pole. The pole would literally tower over my house.
5. The potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates. The pole would be approximately 50-feet above even the tallest of trees in the area.
6. The adjacent installation of an oversized concrete structure housing electronic equipment to operate these and potentially future antennas would affect the aesthetics appeal of surrounding residential homes.
7. The removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.
8. The tall trees buffer harmful winds and other weather elements that affect our neighborhood. There are three huge trees of questionable health on the fire station property just downwind of where the antenna and structure is being proposed. These are just 60-feet from my home. As it is, I fear for my safety during windstorms with these trees. With the windbreak of upwind trees being remove, these trees become a real danger.

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

Thank you for taking my concerns into consideration.

Sincerely,

Tom Mehrkens Oct 16, 2016

Tom Mehrkens
12507 SE 67th Street
Bellevue, WA 98006

425-785-9268
tmehrkens@gmail.com

RECEIVED
OCT 20 REC'D
Development Services

The eight homes most impacted by the proposed 170-foot antenna

Sketch showing the location and approximate height of the antenna as viewed from our neighborhood.

Date: Oct. 18, 2016

RECEIVED
OCT 24 REC'D
Development Services

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

X the potential harmful emissions from the proposed antennas that will be mounted on the pole.

X the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

X the effects the harmful emissions would cause to children and adults who live in an around the area.

X the potential loss of home values to my neighbors and me within 300 feet of the site.

X the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

X the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

X the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

X the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

X other: Please see attached informations

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is Patricia Hayes
David Hayes

My address is 12506 SE. 6 St.
Bellevue, WA 98006

I can be reached at 425-747-3562 (phone)
davidpathayes@hotmail.com (email)

Thank you for taking my concerns into consideration.

Sincerely,

Pat Hayes

Added comments regarding PSERN Application

Pat Hayes

Tue 10/18/2016 12:17 PM

To chamlin@bellevuewa.gov <chamlin@bellevuewa.gov>; tmehrkens@gmail.com <tmehrkens@gmail.com>; Pat Hayes <davidpathayes@hotmail.com>;

Dear Ms. Hamlin:

The following are additional concerns our neighbors and I have regarding the proposed PSERN tower:

1) Market studies of residential home sales indicate that close proximity to a tower reduced home prices between 15% and 21%. Surveys of home buyers indicate a preference to purchase a home without nearby towers. Those with young children were especially unsure about future health problems.

2) The potential for the collapse of cell towers poses a risk of not only property damage but also personal injury or death to citizens. The construction of towers with many components increases the risk of failure of the structure. You-Tube videos show towers burning as they collapsed.

3) It is unfortunate the FCC has allowed runaway construction of towers without independent oversight. The exact location and total numbers of towers is often unavailable to the public.

4) Sadly, the Telecommunications Act of 1996 signed by President Clinton denied all States and local governments of the right to protect citizens from any adverse health effects due to radio frequency/microwave radiation emissions. The levels of RF radiation
accepted by the FCC are 10 to 15,000 times higher than the levels rated safe in other countries.

5) The cumulative effects of multiple nearby towers on citizens must be considered not only in terms of decreased property values but also the risk of tower collapse with subsequent fires and explosion of large fuel storage tanks.

6) The International Association of Fire Fighters opposes the use of fire stations as base stations for any towers or antenna installations. Please refer to their organization website for details.

Patricia Hayes, MA,PT

RECEIVED
OCT 13 REC'D
Development Services

To: City of Bellevue
Development Services Department
PO Box 90012
Bellevue, WA 98009-9012

We are two of a dozen homeowners wishing to express our concern and strong opposition to the location of the 170-foot communications tower proposed by PSERN near Bellevue Fire Station 9. While we support an emergency communications upgrade, we do *not* support the proposed design's location, which would be extremely close to our home. We have the following concerns:

- Since we have a shallow backyard (only about 40 feet), the proposed facility would be closer to our home than to the fire station, thus the tower would be an eyesore for us since it is much taller than most of the trees in the greenbelt and would "tower" over our home.
- Since this tower will be clearly visible from the street in front of our house, we are quite sure it will have a negative impact on the property value and future sale of our house. Not only will we pay for this facility with taxpayer dollars, but we will "pay" when the value of our home is reduced.
- We are concerned about disturbing the greenbelt environment. We have lived nearly thirty years in this home and one of the main reasons we chose it was this greenbelt, which is home to many species of birds and other wildlife, including most recently a family of bobcats—the three kittens and mother visited our yard a few weeks ago! Putting a communications tower in the middle of it would be disruptive.
- Trees in a grove tend to protect and shield each other in a windstorm. Removing the trees indicated in the proposal could render some of the remaining tall trees more likely to fall on our home during windstorms.
- Since the generator is located on the side closest to our property, it would add to the diesel fumes during power outages and regular testing and to the noise level, which is already quite noticeable from the fire station generator.

We want to be good neighbors, but in this case the proposed facility is almost literally in our backyard and would be most disturbing for us. Please consider locating the facility to a different site that is not so close to houses. *It seems like the tower supporting the power lines near the fire station would be a better place to locate the communications facility and, since the supporting structure is already in place, would be more economical.* Please keep us informed of any decisions made in this process.

Richard and Elizabeth McGehee
12501 SE 67th Street
Bellevue, WA 98006
email: lizmcgehee@q.com

Richard McGehee
Elizabeth McGehee

Date: 10-16-2016

RECEIVED
OCT 18 REC'D
Development Services

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

✓ the potential harmful emissions from the proposed antennas that will be mounted on the pole.

✓ the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

✓ the effects the harmful emissions would cause to children and adults who live in an around the area.

✓ the potential loss of home values to my neighbors and me within 300 feet of the site.

✓ the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

✓ the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

✓ the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

✓ the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

____ other: MY WIFE – ROSE GOLDENBERG HAS A CARDIAC PACEMAKER !!

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is YEFIM P. GOLDENBERG

My address is 12515 SE 67TH STREET BELLEVUE, WA 98006

I can be reached at (425)443-9342 (phone)

Y.GOLDENBERG@COMCAST.NET (email)

Thank you for taking my concerns into consideration.

Sincerely,

Y. YEFIM P. GOLDENBERG

Date: 10-15-2016

RECEIVED
OCT 26 REC'D
Development Services

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

✓ the potential harmful emissions from the proposed antennas that will be mounted on the pole.

✓ the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

✓ the effects the harmful emissions would cause to children and adults who live in an around the area.

✓ the potential loss of home values to my neighbors and me within 300 feet of the site.

✓ the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

✓ the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

✓ the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

✓ the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

✓ other: That will be something down the road we don't see it yet.

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is Marinell Iliuc

My address is 6583 125th Ave SE Bellevue WA 98006

I can be reached at 206 954-9395 cell (phone)

MLiliuc@comcast.net (email)

Thank you for taking my concerns into consideration.

Sincerely,

Marinell Iliuc

NOTICE OF APPLICATION

King County Puget Sound Emergency Radio Network (PSERN) - Bellevue Fire Station #9

Location:
12412 Newcastle Way Subarea: Newport Hills File Number: 16-139244-LB

Description:
Application for Conditional Use Permit approval to construct a 170-foot tall communication pole with antennas/other attachments and install associated ground mounted equipment. Ground-mounted equipment will be screened with a fence and plantings. Site area for the parcel is 70,282 square feet.

Approvals Required:
Conditional Use Permit approval and ancillary permits and approvals SEPA: Determination of Non-Significance is expected.

Refer to page one General Information Regarding Use of Optional DNS Process.

Refer to page one for information on how to comment on a project.

Public Meeting:
November 10, 2016; 6 PM;
Bellevue City Hall, 450 110th Avenue NE Meeting Room: Please see reader board.

Date of Application: August 8, 2016

Completeness Date: September 8, 2016

Owner: Bellevue Fire Department

Applicant Contact: Sarah Telschow, stelschow@odelia.com, 206-979-6268

Planner: Carol Hamlin, 425-452-2731

Planner Email: chamlin@bellevuewa.gov

10-16-2016

Date: Ms Carol Hamilton,

RECEIVED
OCT 20 REC'D
Development Services

Dear Ms. Carol Hamlin,

It has come to our attention that King County is considering an application to construct a 170-foot tall communications pole with antennas and other attachments at the site of Bellevue Fire Station #9. I live within close proximity of the site. I have concerns about this plan for the following reasons:

X the potential harmful emissions from the proposed antennas that will be mounted on the pole.

X the uncontrolled addition of more antennas mounted on the pole in the future and their potential harmful emissions.

_____ the effects the harmful emissions would cause to children and adults who live in an around the area.

X the potential loss of home values to my neighbors and me within 300 feet of the site.

_____ the potential loss in aesthetics to the neighborhood; the eyesore such a pole and antennas creates.

_____ the adjacent installation of a huge concrete structure housing electronic equipment to operate these antennas would affect the aesthetics appeal of surrounding residential homes.

_____ the removal of numerous trees to construct the pole and accompanying storage structure would also impact the aesthetics appeal of our neighborhood and heighten the risk of potential winds wreaking through the neighborhood.

_____ the tall trees buffer harmful winds and other weather elements that affect our neighborhood.

_____ other: _____

_____

It is for these reasons that I am concerned and inherently opposed to the construction of a 170 foot tall communications pole and storage structure in my backyard.

My name is Maria J. Mattson
Michael K. Mattson

My address is 6567 125th Ave SE
Bellevue, WA
98006

I can be reached at (425) 736-6492 (phone)
rj0325@comcast.net (email)

Thank you for taking my concerns into consideration.

Sincerely,

Maria J Mattson

Members:

bburghardt@odelia.com
davidpathayes@hotmail.com
jhcusty@yahoo.com
jimpeterson427@comcast.net
lizmcgehee@q.com
mliliuc@comcast.net
pdavison@bellevuewa.gov
ri0325@comcast.net
tmehrkens@gmail.com
y.goldenberg@comcast.net

bburghardt@odelia.com
davidpathayes@hotmail.com
jhcusty@yahoo.com
jimpeterson427@comcast.net
lizmcgehee@q.com
mliliuc@comcast.net
pdavison@bellevuewa.gov
ri0325@comcast.net
tmehrkens@gmail.com
y.goldenberg@comcast.net

Hamlin, Carol

Contact Group Name: PERSN POR list

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Dear Interested Property Owner,

The intent of this letter is to inform you that King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help to your residence during an emergency as well as help first responders such as police officers, fire fighters, and emergency medical staff coordinate response efforts to an emergency. The current emergency radio system is more than 20 years old and unless we do something now our current network is at risk of becoming unreliable.

To that end, King County PSERN, hereafter referred to as PSERN, would like to place an emergency communications facility behind the City of Bellevue Fire Station 9 building located at 12412 Newcastle Way, Bellevue, WA. PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a monopole to a height one hundred seventy feet (170') to effectively transmit and receive emergency radio communications. It also accounts for future tree growth obstruction from the surrounding trees used for screening part of the facility. PSERN is proposing to locate ground equipment nearby screened by a wood fence and landscaping.

The following items have been attached to provide additional information regarding the proposed project location and to provide feedback from the neighborhood:

- Photo Simulations
- Survey
- Preliminary Site Plan and Elevations

Please complete the enclosed survey. The survey will assist in determining if the neighbors surrounding Bellevue Fire Station #9 would be supportive of a PSERN facility installation on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible—**within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

For more information about the PSERN project, please visit ***www.psern.org***. In the meantime, should you have any questions and/or concerns, please contact Sarah Telschow, the agent/contact for PSERN, using the below contact information:

Sarah Telschow
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- ☐ Yes
- ☐ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- ☐ Yes, Supportive
- ☐ No, Not Supportive
- ☐ Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- ☐ Yes, Supportive
- ☐ No, Not Supportive
- ☐ Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Address - E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

CAMP+ ASSOCIATES

BELLEVUE STATION 9

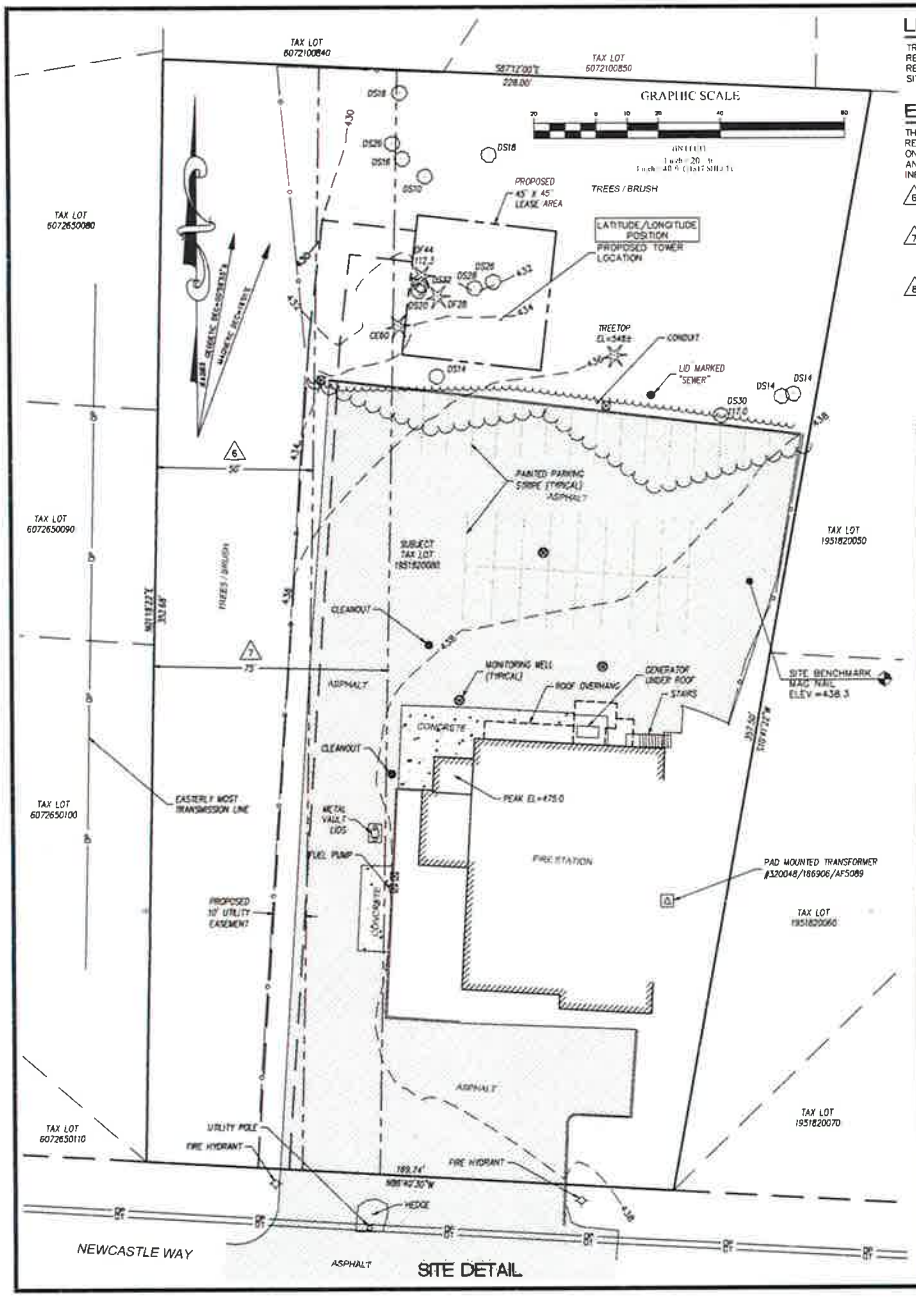
12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #1 LOOKING NORTH
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING



LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO. 4, AS RECORDED IN VOLUME 96 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON.
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

EASEMENTS

CORRESPONDS WITH ITEM NO SCHEDULE B' OF TITLE REPORT

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN.

6 ELECTRIC TRANSMISSION LINE EASEMENT, RECORDING NO 2342829, RECORDS OF KING COUNTY, SHOWN.

7 EASEMENT AND THE TERMS AND CONDITIONS FOR A ELECTRIC TRANSMISSION LINE AS PROVIDED IN CITY OF SEATTLE ORDINANCE NO. 59599, ORDINANCE DESCRIBES THE WEST 75 FEET OF THE SUBJECT PROPERTY, SHOWN

8 MATTERS CONTAINED IN PLAT OF DEL-MAR WOODS DIV 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY – DOCUMENT CONTAINS INSUFFICIENT INFORMATION TO LOCATE HEREON, NOT SHOWN.

LATITUDE/LONGITUDE POSITION

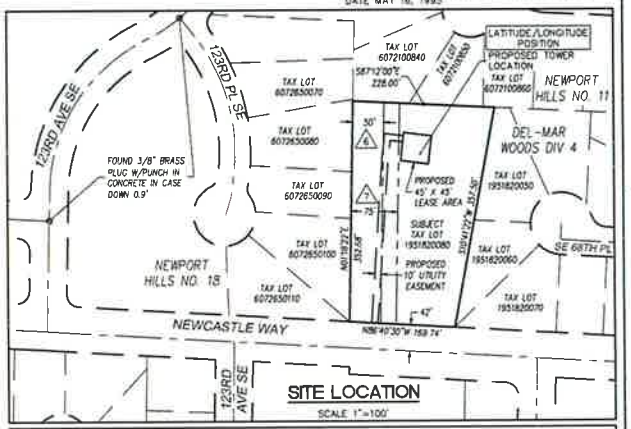
COORDINATE DATA AT PROPOSED TOWER LOCATION:
NAD 83
LAT – 47°32'30.58" N
LONG – 122°10'28.61" W
NAVD 88
ELEV = 434.0 FEET

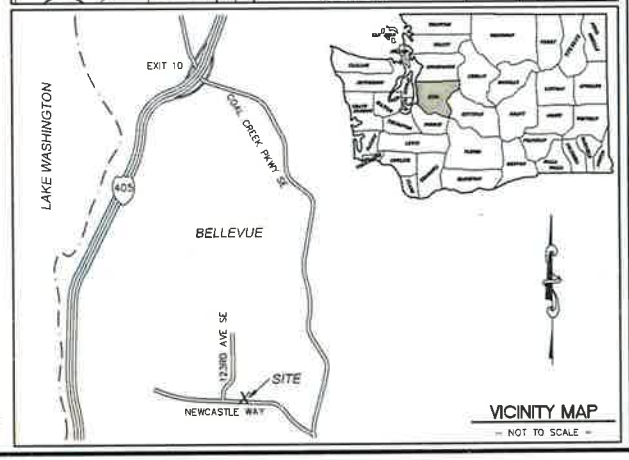
BENCHMARK IS "BLVU"
WSRN GPS CORS STATION.
ELEV = 51.2'

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

NOTES

1) TITLE INFORMATION PER GUARANTEE NO. 20371668-410-T20, PROVIDED BY FIDELITY NATIONAL TITLE OF WASHINGTON, INC., DATED SEPTEMBER 29, 2015.
2) FIELD WORK CONDUCTED IN JULY, 2015.
3) BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE (NAD83)
4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
5) FEMA DESIGNATION: ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN), PANEL 666 OF 1725, FIRM MAP NUMBER 53033C0666F, EFFECTIVE DATE MAY 16, 1995.





LEGEND

- SUBJECT BOUNDARY LINE
- RIGHT-OF-WAY CENTERLINE
- RIGHT-OF-WAY LINE
- ADJACENT BOUNDARY LINE
- SECTIONAL BREAKDOWN LINE
- OP — OVERHEAD POWER LINE
- UP — BURIED POWER LINE
- G — BURIED GAS LINE
- OT — OVERHEAD TELEPHONE LINE
- UT — BURIED TELEPHONE LINE
- W — BURIED WATER LINE
- SS — BURIED SANITARY SEWER
- SD — BURIED STORM DRAIN
- DITCH LINE/FLOW LINE
- ROCK RETAINING WALL
- VEGETATION LINE
- o — CHAIN LINK FENCE
- o — WOOD FENCE
- x — BARBED WIRE/WIRE FENCE
- TRANSFORMER
- LIGHT STANDARD
- POWER VAULT
- UTILITY BOX
- UTILITY POLE
- POLE GUY WIRE
- GAS VALVE
- GAS METER
- TELEPHONE VAULT
- TELEPHONE RISER
- FIRE HYDRANT
- GATE VALVE
- WATER METER
- FIRE STAND PIPE
- CATCH BASIN, TYPE I
- CATCH BASIN, TYPE II
- SIGN
- BOLLARD
- MAIL BOX
- 234.21 SPOT ELEVATION

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

TREE LEGEND

DECIDUOUS TREE
AL12 — TRUNK DIAMETER (IN)
TYPE

EVERGREEN TREE
DF18
195.2
HEIGHT AGL IF MEASURED

AL=ALDER
MP=MAPLE
DS=DECIDUOUS
MA=MADRONA
OK=OAK
CH=CHERRY

CE=CEDAR
DF=DOUGLAS FIR
HE=HEMLOCK
PI=PINE
EVG=EVERGREEN

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

SITE INFORMATION

TAX LOT NUMBER	1951820080
SITE ADDRESS	12412 NEWCASTLE WAY BELLEVUE, WA 98006
SITE CONTACT	
PHONE NUMBER	
ZONING	R5 (CITY OF BELLEVUE)
TOTAL LOT AREA	70,262± S.F.(1.61 AC.)
PROJECT AREA	2,025 S.F.

SURVEY REFERENCE

1. PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY.
2. PLAT OF NEWPORT HILLS NO. 18, RECORDED IN VOLUME 78, PAGE 36, RECORDS OF KING COUNTY.

BOUNDARY DISCLAIMER

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

CAUTION!

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

1-800-424-5555

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PACIFIC CORPORATION

DUNCANSON
Company, Inc.
115 SW 154th Street Suite 102
Seattle, Washington 98166
Phone: 206.244.4343
Fax: 206.244.4455

SITE
BELLEVUE STA. #9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
KING COUNTY

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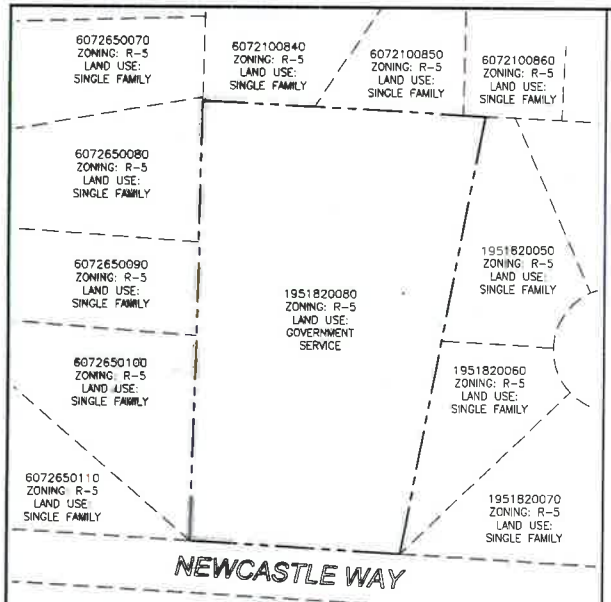
FLD. CREW:	CR/CT
FLD. BOOK:	370/63
DRAWN BY:	RLP
JOB #:	15385.05
DATE:	7/15/15

REVISIONS

DATE	DESCRIPTION	BY
3/30/16	REVISED LEASE AREA AND TOWER LOCATION	LMC
10/14/15	ADD NEW TITLE REPORT	JA
7/31/15	REVISED LEASE AREA AND TOWER LOCATION, ADDED EASEMENTS	LMC

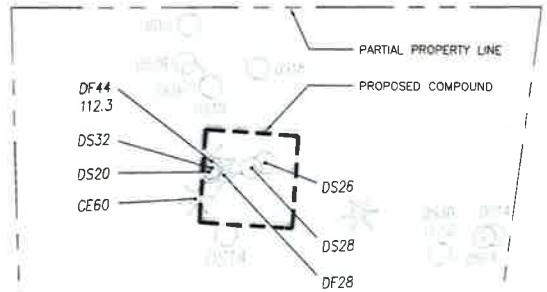
SHEET TITLE
EXISTING SITE SURVEY
SEC 28, TWP 24 N, RNG 5 E, WM

SHEET NUMBER
SV1



ADJACENT PARCEL ZONING AND LAND USE

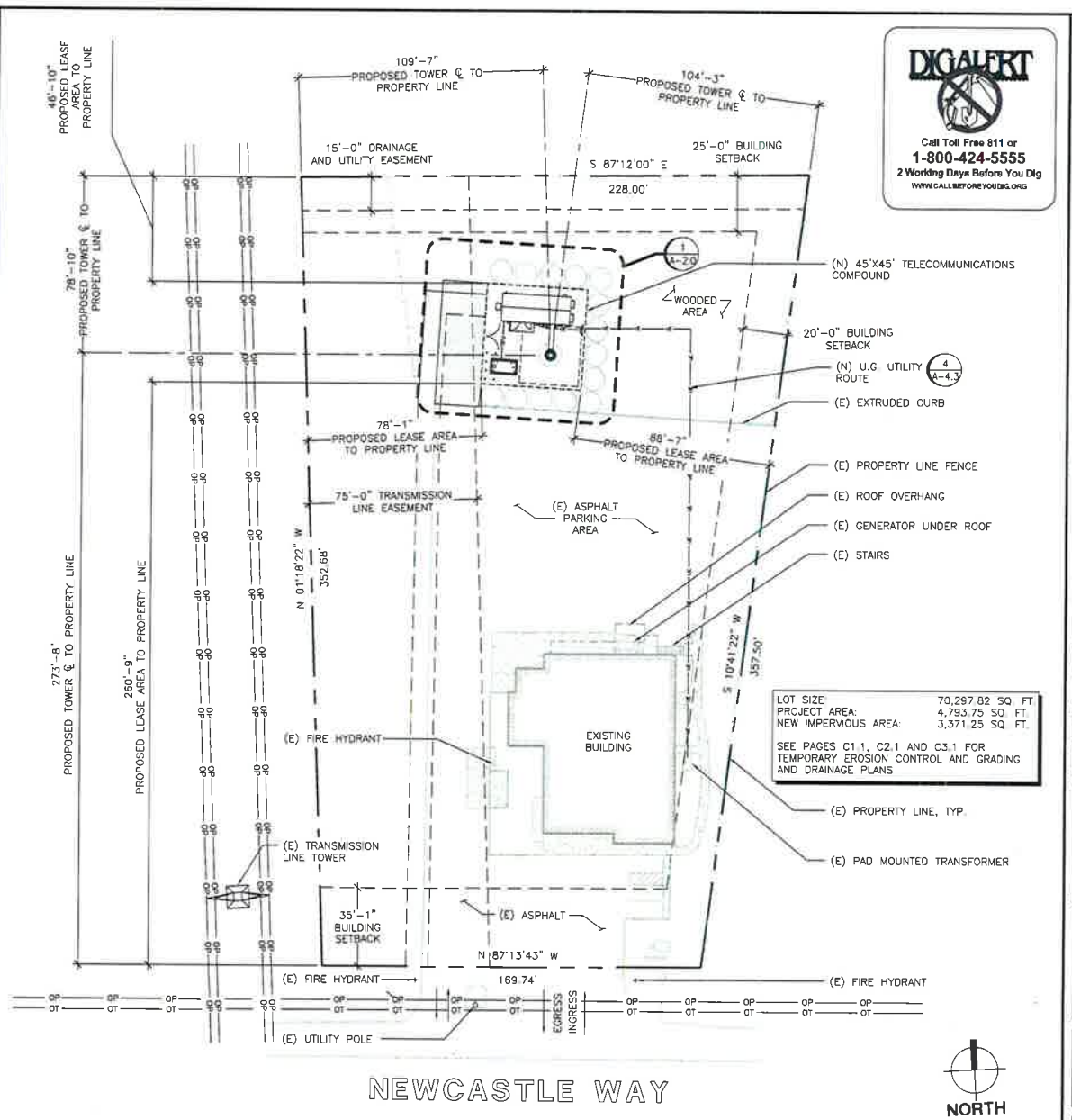
SCALE: NONE



TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
DOUGLAS FIR (DF44)	44"	112.3'	1
DECIDUOUS (DS32)	32"	-	1
DECIDUOUS (DS20)	20"	-	1
CEDAR (CE60)	60"	-	1
DECIDUOUS (DS26)	26"	-	1
DECIDUOUS (DS28)	28"	-	1
DOUGLAS FIR (DF28)	28"	-	1
		TOTAL	7

TREES TO BE REMOVED

SCALE: NONE



OVERALL PROPOSED SITE PLAN

SCALE: 1" = 25'-0" (22x34), 1" = 50'-0" (11x17)

0 25 50 75

DIGALERT
Call Toll Free 811 or
1-800-424-5555
2 Working Days Before You Dig
WWW.CALL811BEFOREYOUDIG.ORG

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CODELLA PACIFIC CORPORATION
8606 47TH AVE. S., SUITE 202
SEATTLE, WA 98118
PHONE: (206) 480-1626
FAX: (206) 480-0630
WWW.CODELLA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 740-5392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

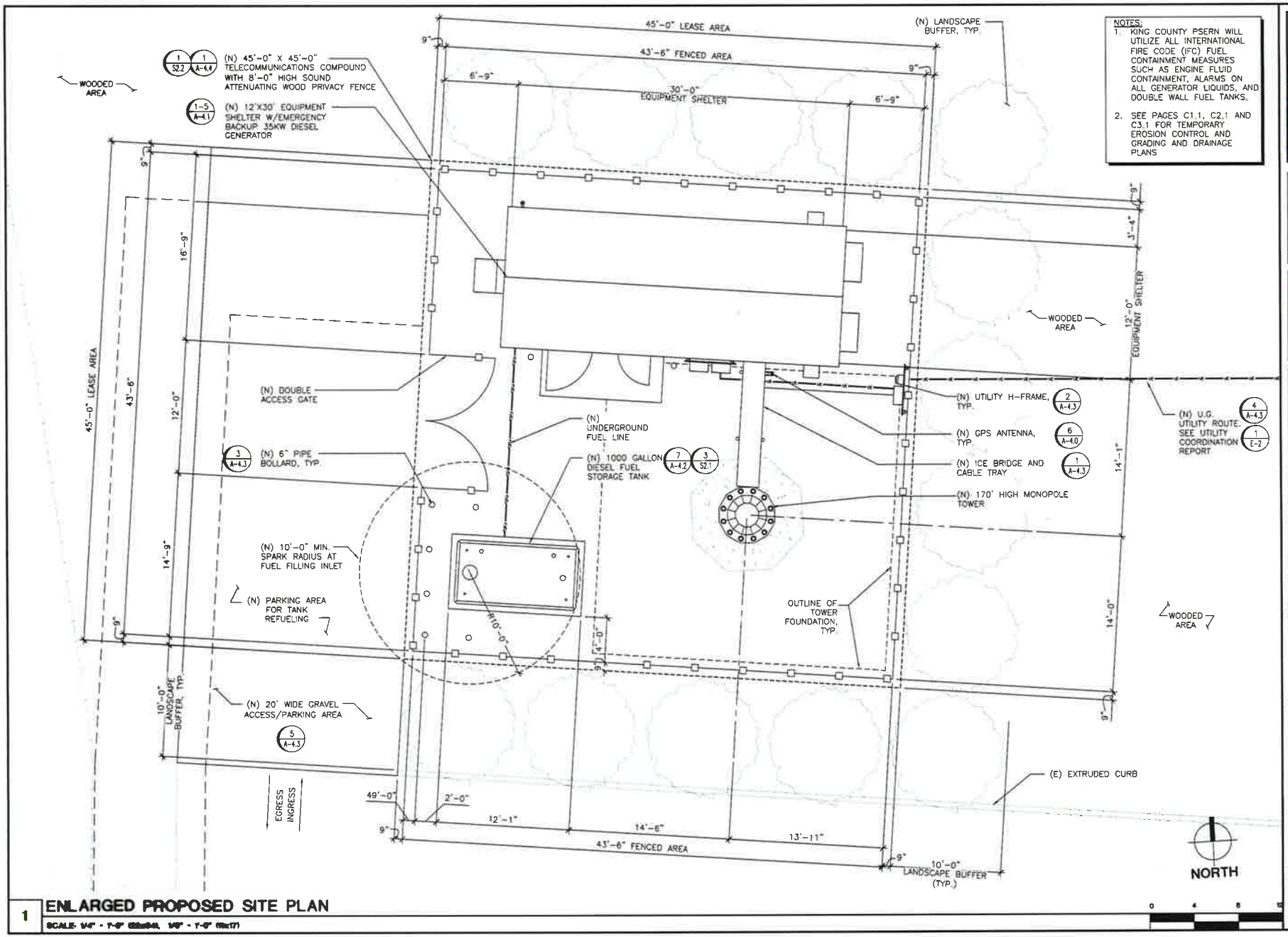
04/15/16	ISSUED FOR PRELIM. PERMIT
03/29/16	ISSUED FOR PRELIM. PERMIT
10/22/15	ISSUED FOR PRELIM. PERMIT
09/24/15	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
OVERALL PROPOSED SITE PLAN

SHEET NUMBER
A-1



NOTES:
1. KING COUNTY PSERN WILL UTILIZE ALL INTERNATIONAL FIRE CODE (IFC) FUEL CONTAINMENT MEASURES SUCH AS ENGINE FLUID CONTAINMENT, ALARMS ON ALL GENERATOR LIQUIDS, AND DOUBLE WALL FUEL TANKS.
2. SEE PAGES C1.1, C2.1 AND C3.1 FOR TEMPORARY EROSION CONTROL AND GRADING AND DRAINAGE PLANS

1 ENLARGED PROPOSED SITE PLAN

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

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

DEISLER PACIFIC CORPORATION
5006 67TH AVE. S. SUITE 202
SEATTLE, WA 98118
PHONE: (206) 490-3826
FAX: (206) 490-0839
WWW.DEISLER.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 742-0202
FAX: (425) 252-0860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

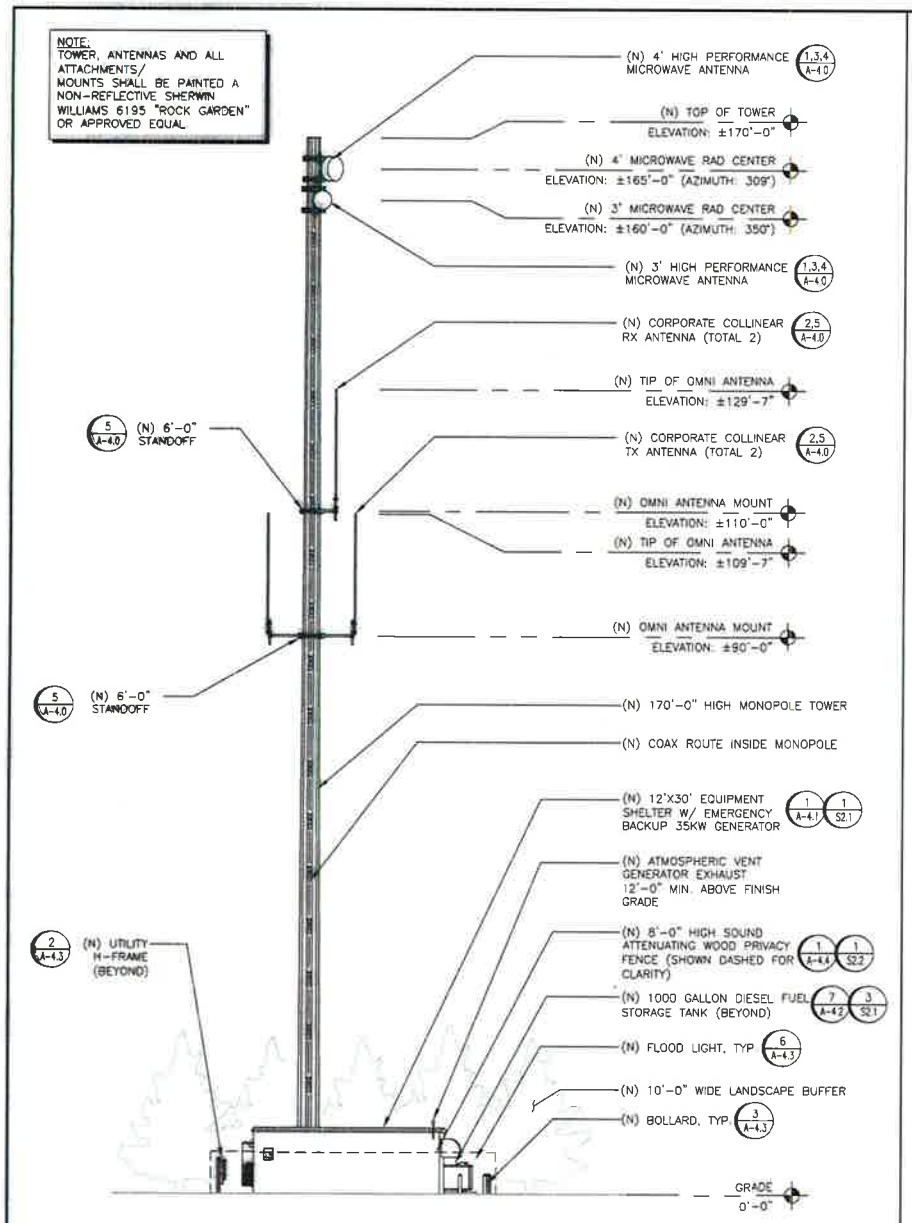
04/15/16	ISSUED FOR PRELIM. PERMIT
03/29/16	ISSUED FOR PRELIM. PERMIT
10/22/15	ISSUED FOR PRELIM. PERMIT
09/24/15	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

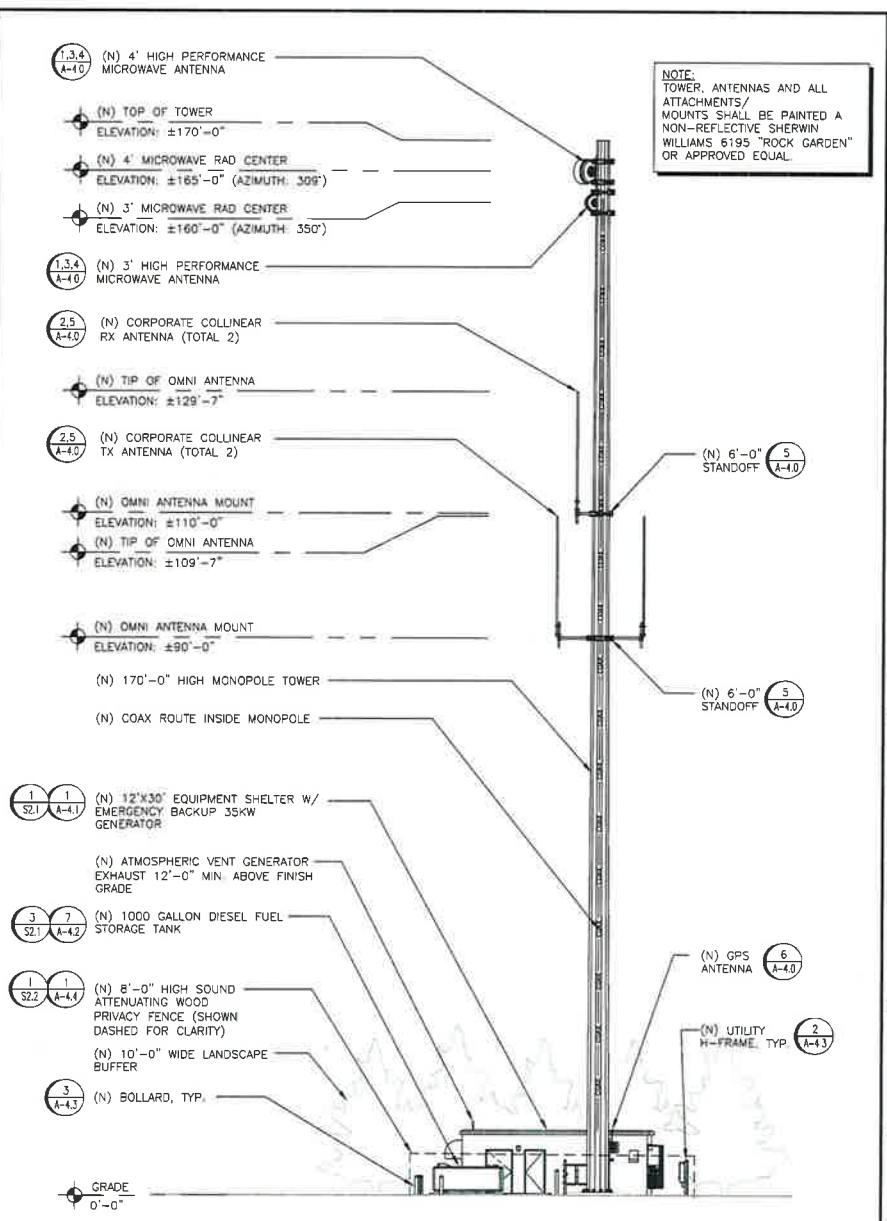
SHEET NAME
ENLARGED PROPOSED SITE PLAN

SHEET NUMBER
A-2.0



1 **PROPOSED NORTH ELEVATION**

SCALE: 1" - 10'-0" (22x34), 1" - 20'-0" (11x17)



2 **PROPOSED SOUTH ELEVATION**

SCALE: 1" - 10'-0" (22x34), 1" - 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

COBELIA PACIFIC CORPORATION
5508 6TH AVE. S., SUITE 212
SEATTLE, WA 98108
PHONE: (206) 490-3826
FAX: (206) 490-3830
WWW.COBELIA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W, SUITE 104
LYNNWOOD, WA 98036
PHONE: (425) 740-6392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER:	EJC
PREPARED BY:	LM/AIO
APPROVED BY:	PN

04/13/16	ISSUED FOR PRELIM. PERMIT
03/29/16	ISSUED FOR PRELIM. PERMIT
10/22/15	ISSUED FOR PRELIM. PERMIT
09/24/15	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

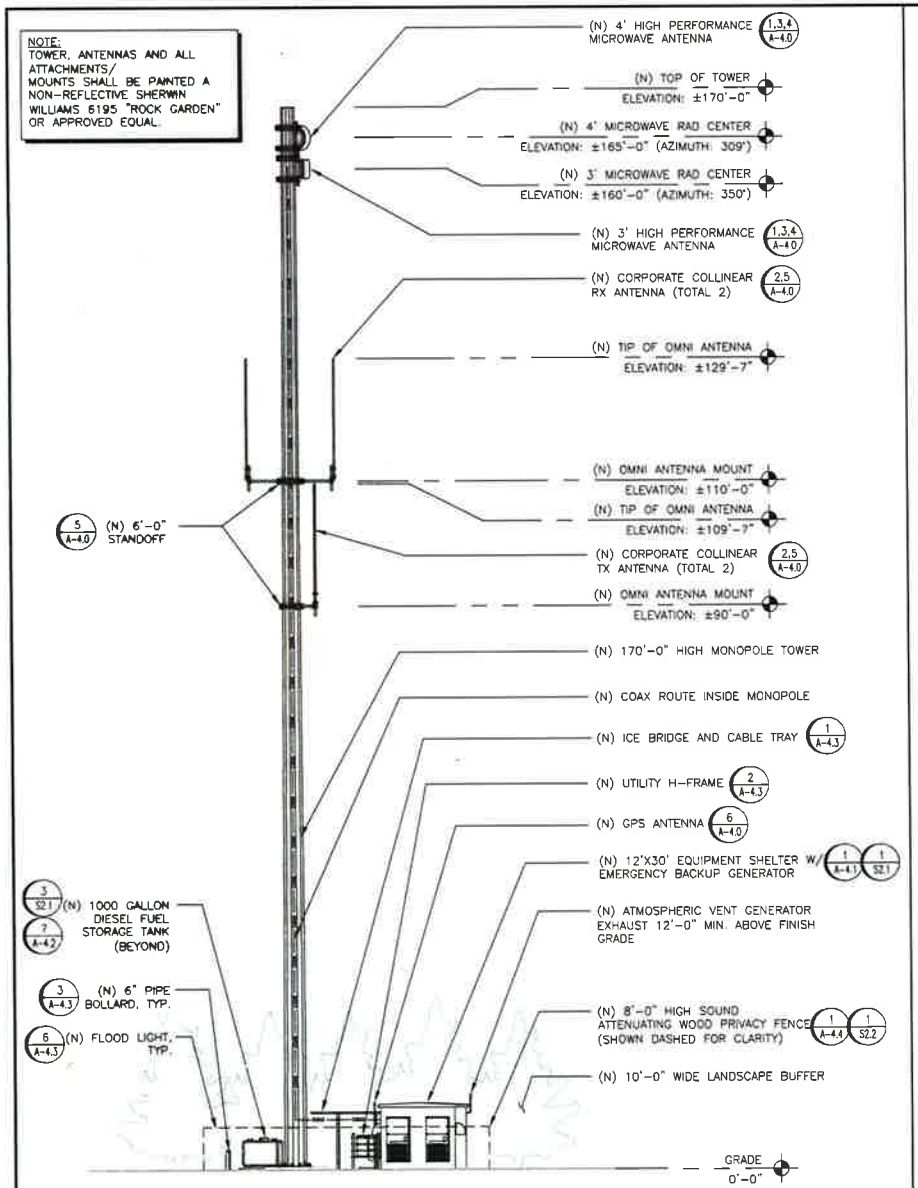
ARCHITECTS STAMP

SHEET NAME

PROPOSED ELEVATIONS

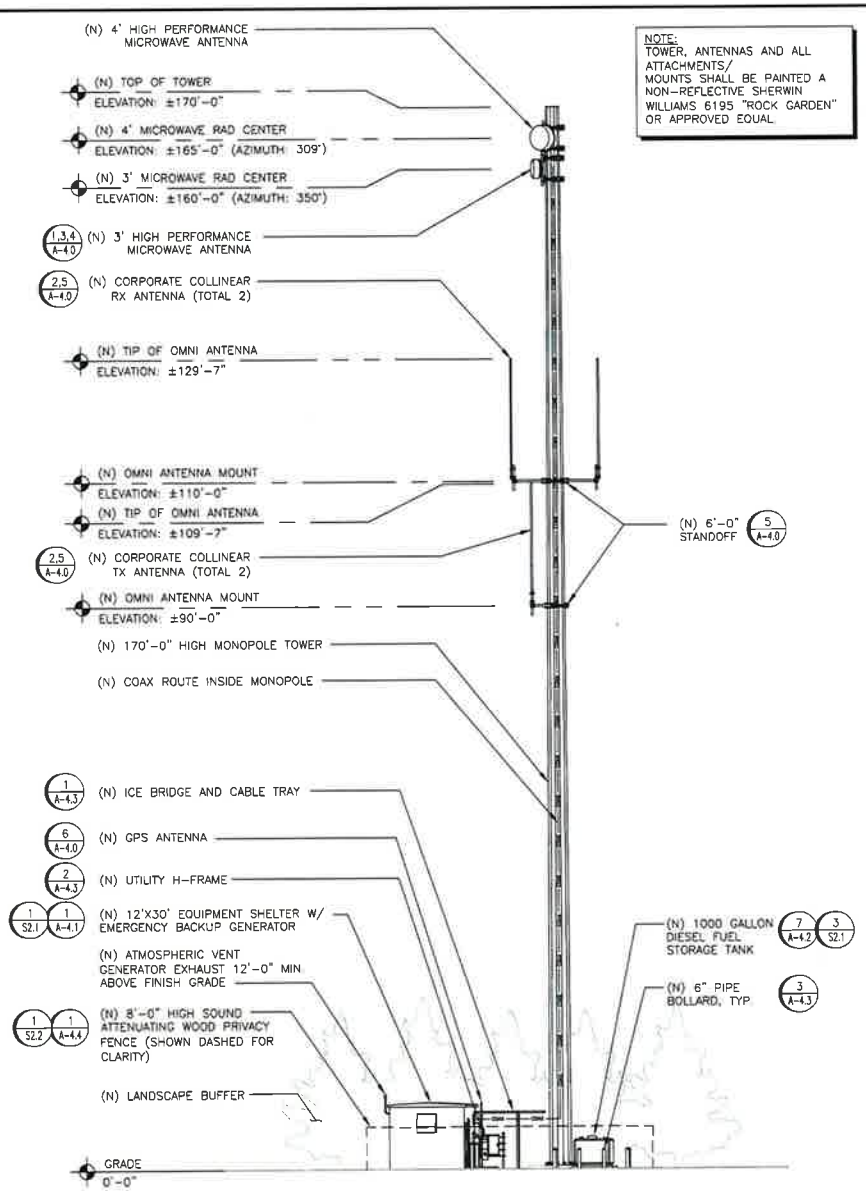
SHEET NUMBER

A-3.0



1 **PROPOSED EAST ELEVATION**

SCALE: 1" - 10'-0" (22x34), 1" - 20'-0" (11x17)



2 **PROPOSED WEST ELEVATION**

SCALE: 1" - 10'-0" (22x34), 1" - 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE, WA 98006

ODELLA PACIFIC CORPORATION
5506 6TH AVE. S. SUITE 202
SEATTLE, WA 98108
PHONE: (206) 490-0826
FAX: (206) 490-0835
WWW.ODELLA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W. SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-6392
FAX: (425) 252-2860
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC

PREPARED BY: LM/AIO

APPROVED BY: PN

04/15/16	ISSUED FOR PRELIM. PERMIT
03/29/16	ISSUED FOR PRELIM. PERMIT
10/22/15	ISSUED FOR PRELIM. PERMIT
09/24/15	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

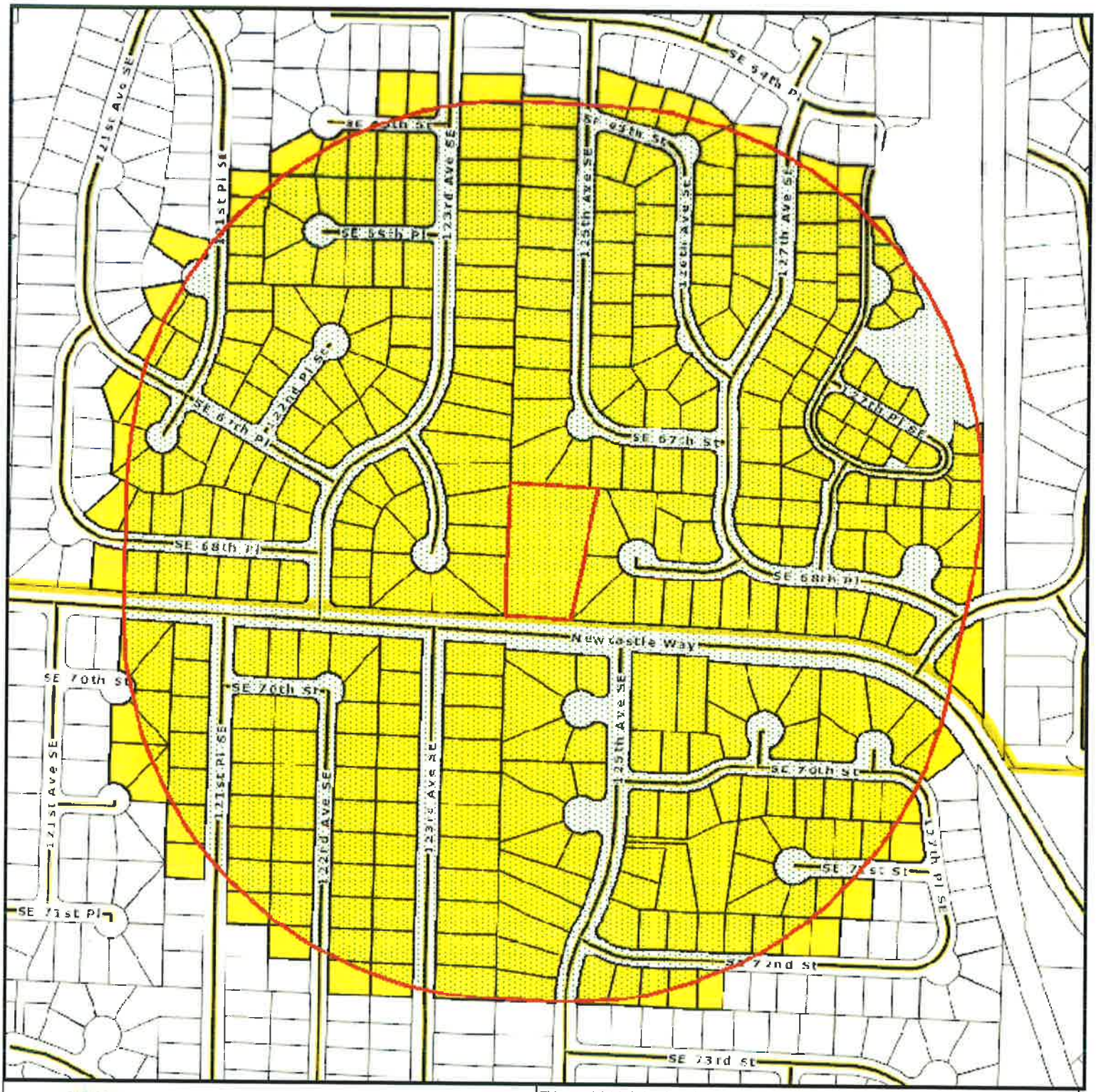
ARCHITECTS STAMP

SHEET NAME

PROPOSED ELEVATIONS

SHEET NUMBER

A-3.1



First American

King County Customer Service
Seattle Team
Email: cs.seattle@firstam.com
Phone: 206-728-7236

This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

geoAdvantage

First American
King County Customer Service
Seattle Team
Email: cs.seattle@firstam.com
Phone: 206-728-7236

ParcelID	Site Addr	Site City	Site Zip	Acres	Beds	Baths	SqFt	Owner
1951810010	6808 128th Ave SE	Bellevue	98006	0.4040	3	2.50	1780	Manojlovic Nebojsa & Radojka
1951810130	12750 SE 68th Pl	Bellevue	98006	0.2371	3	1.75	1720	Choi On-Fat
1951810140	12746 SE 68th Pl	Bellevue	98006	0.2542	5	2.50	2640	Lillywhite Eric S & Carol L H
1951810150	12742 SE 68th Pl	Bellevue	98006	0.2538	4	2.50	2160	Smith Francis Edward
1951810160	12738 SE 68th Pl	Bellevue	98006	0.2156	4	2.75	2960	Kim Youn Soo & Chong Kuk
1951810170	12734 SE 68th Pl	Bellevue	98006	0.2314	5	2.50	2530	Livingston Loy
1951810180	12724 SE 68th Pl	Bellevue	98006	0.1920	3	1.75	2120	Hu Kathy Shan Mai
1951810190	6716 127th Pl SE	Bellevue	98006	0.2143	3	2.25	2270	Yamamoto Bill & Marilyn
1951810200	6717 127th Pl SE	Bellevue	98006	0.1796	3	1.75	1830	Cho, Jaeyoung
1951810210	12712 SE 68th Pl	Bellevue	98006	0.2015	3	1.75	1400	Brown Beverly N
1951810220	12704 SE 68th Pl	Bellevue	98006	0.2129	3	1.75	1790	Leung Kwong Sum & Chan Tak-Li
1951810230	6714 127th Ave SE	Bellevue	98006	0.2028	3	1.75	1910	Moore Brian Tucker
1951810350	12635 SE 68th Pl	Bellevue	98006	0.2152	3	2.75	1940	Wright Larry & Marci
1951810360	12641 SE 68th Pl	Bellevue	98006	0.2152	4	1.75	2960	Ulrich Dan & Susan
1951810370	12647 SE 68th Pl	Bellevue	98006	0.2197	4	2.25	2150	Sanglimsuwan Charles
1951810380	12701 SE 68th Pl	Bellevue	98006	0.2533	4	1.75	2400	Chu Tien-Wei Et Al
1951810390	12705 SE 68th Pl	Bellevue	98006	0.2247	5	3.00	2900	Henry David H
1951810400	12711 SE 68th Pl	Bellevue	98006	0.2152	3	2.25	1860	Rittner James L
1951810410	12719 SE 68th Pl	Bellevue	98006	0.2157	3	1.75	2190	Logan David E
1951810420	12727 SE 68th Pl	Bellevue	98006	0.2201	3	2.25	1780	Kiani Kamiar
1951810430	12735 SE 68th Pl	Bellevue	98006	0.2201	4	2.50	2950	Lottermoser Heinz O W Jr & Ma
1951810440	12747 SE 60th Pl	Bellevue	98006	0.2493	3	1.75	2920	Grayson Ronald D & Diane M
1951820010	6713 127th Ave SE	Bellevue	98006	0.2261	6	2.75	2620	Masaoka Margo
1951820020	12644 SE 68th Pl	Bellevue	98006	0.2296	3	1.75	1830	Suen Dah H
1951820030	12638 SE 68th Pl	Bellevue	98006	0.1963	3	1.75	1760	Chen Eddy
1951820040	12632 SE 68th Pl	Bellevue	98006	0.2881	6	3.50	2520	Rahman Sayeedur
1951820050	12626 SE 68th Pl	Bellevue	98006	0.2938	3	1.75	1780	Custy John
1951820060	12627 SE 68th Pl	Bellevue	98006	0.2617	4	1.75	1800	Mayon Susan H
1951820070	12631 SE 68th Pl	Bellevue	98006	0.3007	3	2.25	2230	Li, Wei
2824059049	12505 Newcastle Way	Newcastle	98056	0.5500	3	1.50	1190	Hevly John A
2824059116	12517 Newcastle Way	Newcastle	98056	0.3700	3	1.75	2020	Cheung Hon Kong & Ng Yim C
2824059128	6707 127th Pl SE	Bellevue	98006	0.1700	3	2.00	1990	Walton, Kimberly I
3205000010	6951 121st Pl SE	Newcastle	98056	0.2219	3	1.75	1270	Welch Carry M
3205000020	6959 121st Pl SE	Newcastle	98056	0.2262	3	2.25	1600	Balash Richard L

3205000030	7005 121st Pl SE	Newcastle	98056	0.2264	4	1.50	1460	Skeels Teresa S
3205000040	7015 121st Pl SE	Newcastle	98056	0.2266	3	1.75	1270	Moe David P & Janicki Catheri
3205000050	7023 121st Pl SE	Newcastle	98056	0.2266	3	1.00	890	Wuorenma, Jason J
3205000060	7031 121st Pl SE	Newcastle	98056	0.2270	3	1.00	940	Collier Joe T Jr
3205000070	7039 121st Pl SE	Newcastle	98056	0.2271	3	1.75	1390	Senger Joseph P
3205000110	7006 121st Pl SE	Newcastle	98056	0.2253	3	1.75	1290	Ober, Kyle & Andrea M
3205000120	7014 121st Pl SE	Newcastle	98056	0.2146	5	1.00	1830	Auzaradel Solomon & Mary
3205000130	7022 121st Pl SE	Newcastle	98056	0.2146	3	1.50	1100	Wertheimer Jiri
3205000140	7030 121st Pl SE	Newcastle	98056	0.2146	3	1.75	1270	Fisk Phillip A
3205000150	7038 121st Pl SE	Newcastle	98056	0.2146	3	1.50	1100	Sadler Alice M
3205000160	7046 121st Pl SE	Newcastle	98056	0.2146	3	1.00	1290	Sadler Kimberly J
3205000170	7054 121st Pl SE	Newcastle	98056	0.2146	3	1.75	1270	Matczak Jacek & Iwona
3205000210	7063 122nd Ave SE	Newcastle	98056	0.2146	3	1.50	1100	Loyd Michael L
3205000220	7055 122nd Ave SE	Newcastle	98056	0.2146	4	2.00	2110	O'Neal Eric P & Alicia L
3205000230	7047 122nd Ave SE	Newcastle	98056	0.2146	3	1.75	1270	May Lila Woodruff
3205000240	7039 122nd Ave SE	Newcastle	98056	0.2146	3	1.50	1070	Losek Joseph D
3205000250	7031 122nd Ave SE	Newcastle	98056	0.2146	3	1.00	1100	Hafar Daniel J
3205000260	7023 122nd Ave SE	Newcastle	98056	0.2146	3	1.75	1270	Bui Tri & Nguyen Giang H
3205000270	7015 122nd Ave SE	Newcastle	98056	0.2146	3	1.75	1200	Scattergood Mark
3205000280	7007 122nd Ave SE	Newcastle	98056	0.2242	3	1.50	1290	Vlasenko Pavel
3205000290	12150 SE 70th St	Newcastle	98056	0.2398	3	1.50	1070	Cheng Hsien-Chieh
3205000300	12158 SE 70th St	Newcastle	98056	0.2314	6	3.00	2340	Elliott Thomas W
3205000310	12166 SE 70th St	Newcastle	98056	0.2144	3	1.00	1340	Nguyen, Thinh T
3205000320	12174 SE 70th St	Newcastle	98056	0.2465	3	1.50	1070	Chapple Kimberly R & Ralph B
3205000330	7000 122nd Ave SE	Newcastle	98056	0.2094	3	1.75	1310	Whiteaker Timothy & Eunyoung
3205000340	7008 122nd Ave SE	Newcastle	98056	0.2146	3	2.00	1420	Courtright Brooks D
3205000350	7016 122nd Ave SE	Newcastle	98056	0.2146	3	1.50	1070	Campbell James O & Margaret M
3205000360	7024 122nd Ave SE	Newcastle	98056	0.2146	3	1.75	1250	Murray James And Jie Shen
3205000370	7032 122nd Ave SE	Newcastle	98056	0.2146	5	2.50	1810	Gutter McCoy & Ora P
3205000380	7040 122nd Ave SE	Newcastle	98056	0.2146	3	1.00	1730	Staats Michael L
3205000390	7048 122nd Ave SE	Newcastle	98056	0.2146	3	1.50	1070	Rentfro Jana M
3205000400	7056 122nd Ave SE	Newcastle	98056	0.2146	3	1.50	1070	Merlino John & Colleen
3205000410	7064 122nd Ave SE	Newcastle	98056	0.2146	4	2.00	1490	Vollandt Carol
3205000420	7072 122nd Ave SE	Newcastle	98056	0.2146	4	2.00	1590	Siverts-Wong Ananda & Elena
3205000430	7071 123rd Ave SE	Newcastle	98056	0.2146	3	1.75	1370	Siu Jenny

3205000440	7063 123rd Ave SE	Newcastle	98056	0.1951	3	1.50	1390	Shin Hogan
3205000450	7055 123rd Ave SE	Newcastle	98056	0.2146	3	1.75	1270	Peless William A
3205000460	7047 123rd Ave SE	Newcastle	98056	0.2146	4	1.50	1390	Ishikawa Kazuo
3205000470	7039 123rd Ave SE	Newcastle	98056	0.2146	4	2.50	1970	Brett Ronald G
3205000480	7031 123rd Ave SE	Newcastle	98056	0.2146	3	1.00	890	Cole Douglas H & Linda A
3205000490	7023 123rd Ave SE	Newcastle	98056	0.2146	2	1.25	1070	Rozek Roger P & Bitseff Tonie
3205000500	7015 123rd Ave SE	Newcastle	98056	0.2146	3	1.75	1720	Kuntz David J & Amanda L
3205000510	7007 123rd Ave SE	Newcastle	98056	0.2146	4	2.25	2180	Yu Jordan S & Huang Gengping
3205000520	6959 123rd Ave SE	Newcastle	98056	0.2146	3	1.00	890	Wartella Clifford A
3205000530	6951 123rd Ave SE	Newcastle	98056	0.2173	4	2.50	1970	Lum Yee Moy Seu
3205000540	6950 123rd Ave SE	Newcastle	98056	0.2908	3	1.75	1910	Richert Bryce
3205000550	6958 123rd Ave SE	Newcastle	98056	0.3025	4	1.50	1390	Shaw Arthur L
3205000560	7006 123rd Ave SE	Newcastle	98056	0.3025	3	1.00	890	Ihara Candice
3205000570	7014 123rd Ave SE	Newcastle	98056	0.3025	3	1.00	1140	Lassman Curtis H & Susan M
3205000580	7022 123rd Ave SE	Newcastle	98056	0.3025	3	1.75	1270	Lee Yeong Hong
3205000590	7030 123rd Ave SE	Newcastle	98056	0.3025	3	1.50	1070	Suprenant Jack D
3205000600	7038 123rd Ave SE	Newcastle	98056	0.3025	5	1.75	2350	Whitham Arthur W & Melvena
3205000610	7046 123rd Ave SE	Newcastle	98056	0.3025	3	1.50	1070	Church Jeffery L & Lauren E
3205000620	7054 123rd Ave SE	Newcastle	98056	0.3025	3	1.00	1390	Corsetto Angela S
3205000630	7062 123rd Ave SE	Newcastle	98056	0.3025	3	1.75	1270	Martin Marc E -trustee
3205000640	7072 123rd Ave SE	Newcastle	98056	0.3025	3	1.50	1680	Bodin Timothy C
3205100200	12120 SE 71st St	Newcastle	98056	0.2102	3	1.75	1550	Kubhota Kenneth M
3205100210	12116 SE 71st St	Newcastle	98056	0.2406	3	1.75	1270	Van Brocklin Allan
3205100250	12117 SE 70th St	Newcastle	98056	0.2401	3	1.75	1270	Poon, Yiu K
3205100260	12121 SE 70th St	Newcastle	98056	0.2114	3	1.00	890	McGladrey Nancy
3205100270	12122 SE 70th St	Newcastle	98056	0.2625	4	1.75	1370	Van Avermaete Drucilla J
3205100280	12118 SE 70th St	Newcastle	98056	0.2562	4	1.00	1020	Youch Ed & Stacy Carpine
5056500010	6562 123rd Ave SE	Bellevue	98006	0.2384	4	2.25	2080	Collin Martha Ann
5056500020	6552 123rd Ave SE	Bellevue	98006	0.2384	4	2.25	2180	Gao Sherry
5056500030	6522 123rd Ave SE	Bellevue	98006	0.2526	4	1.50	1630	Ngo Bao G & Le, Xuan T
5056500040	6516 123rd Ave SE	Bellevue	98006	0.2526	4	1.75	1880	Whitney Jack L & Michelle L
5056500050	6510 123rd Ave SE	Bellevue	98006	0.2384	4	2.50	1950	Floyd Erica Lea & William Eva
5056500060	6504 123rd Ave SE	Bellevue	98006	0.2669	4	1.75	1850	Mayer Margaret C
5056500070	6476 123rd Ave SE	Bellevue	98006	0.2384	4	2.50	2420	Hayashi Hiroko
5056500080	6420 123rd Ave SE	Bellevue	98006	0.2669	4	2.25	2230	Glenn Bonnie J

5056500120	12233 SE 65th Pl	Bellevue	98006	0.2282	3	1.75	2170	Oliver Robert S & Paula R
5056500130	12227 SE 65th Pl	Bellevue	98006	0.2152	3	2.25	1850	Paul Michael W
5056500140	12219 SE 65th Pl	Bellevue	98006	0.2169	4	2.25	2210	Li Fuping
5056500150	12211 SE 65th Pl	Bellevue	98006	0.2593	4	1.75	1850	Murray Greg D & Deborah A
5056500160	12205 SE 65th Pl	Bellevue	98006	0.3091	4	2.25	2180	Lin Yi-Ju & Chang Eric
5056500170	12201 SE 65th Pl	Bellevue	98006	0.2210	4	2.25	2180	Chang Chih
5056500180	12204 SE 65th Pl	Bellevue	98006	0.2801	3	1.75	1850	Varon David M & Sheryl S
5056500190	12210 SE 65th Pl	Bellevue	98006	0.1860	4	2.25	2180	Lee Louis
5056500200	12218 SE 65th Pl	Bellevue	98006	0.2066	3	1.75	1930	Furtado Adolph & Aeli
5056500210	12226 SE 65th Pl	Bellevue	98006	0.2066	4	2.75	2910	Laplante, Nelson J
5056500220	12232 SE 65th Pl	Bellevue	98006	0.2184	3	2.25	2050	Gervais Gary G & Judy J
5056500230	12233 SE 65th St	Bellevue	98006	0.2184	3	1.75	1530	Bell Theresa R
5056500240	12227 SE 65th St	Bellevue	98006	0.2066	3	1.75	1550	Tsuji Leigh & Machiko
5056500250	12219 SE 65th St	Bellevue	98006	0.2066	4	1.75	1850	Bick Raymon Jr
5056500260	12211 SE 65th St	Bellevue	98006	0.1864	4	2.25	2160	Liu Tsz Fung & See Zoe
5056500270	12205 SE 65th St	Bellevue	98006	0.2943	5	2.25	2810	Bao Xia Hua
5056500320	12226 SE 65th St	Bellevue	98006	0.2066	4	2.50	1970	Haglund Allan C Mr & Mrs
5056500330	12232 SE 65th St	Bellevue	98006	0.2184	4	2.25	2060	Fung Ming P & Xue F
6072100170	6510 127th Ave SE	Bellevue	98006	0.1991	5	2.25	2390	Lane Edward L & Catherine A
6072100180	6514 127th Ave SE	Bellevue	98006	0.1863	3	1.75	1690	Hitchcock Douglas & Barbara
6072100190	6518 127th Ave SE	Bellevue	98006	0.1899	3	2.25	2010	Medley Karen A & Allen Stephe
6072100200	6522 127th Ave SE	Bellevue	98006	0.1833	5	2.25	2490	Osburn Raymond
6072100210	6530 127th Ave SE	Bellevue	98006	0.2078	3	2.25	1810	Jones Shane & Candice Caldwel
6072100220	6536 127th Ave SE	Bellevue	98006	0.2169	3	1.75	1530	Graves Peter & Christina A
6072100230	6544 127th Ave SE	Bellevue	98006	0.2184	3	1.75	2450	Wu Wei
6072100240	6550 127th Ave SE	Bellevue	98006	0.2124	3	1.75	2840	Duane Michael P
6072100250	6558 127th Ave SE	Bellevue	98006	0.1904	5	2.25	2730	Ainswoth, Claudetta J
6072100260	6700 127th Ave SE	Bellevue	98006	0.2108	4	2.50	3150	Voyce Kenneth George & Nancy
6072100270	6706 127th Ave SE	Bellevue	98006	0.2134	4	2.50	2340	Pettis Morgan N & Katayoun Ta
6072100340	6505 127th Ave SE	Bellevue	98006	0.2033	4	1.75	1660	Setness Diane J
6072100350	6509 127th Ave SE	Bellevue	98006	0.1928	3	1.75	2400	Cooper Lene A & Rhodes George
6072100360	6513 127th Ave SE	Bellevue	98006	0.1928	4	2.25	2060	Wachal Mark R & Sandra K
6072100370	6517 127th Ave SE	Bellevue	98006	0.1928	6	3.00	2130	Ilea Vasile & Tunde
6072100380	6521 127th Ave SE	Bellevue	98006	0.2091	4	1.75	2310	Goldsmith Steven J
6072100390	6533 127th Ave SE	Bellevue	98006	0.2009	3	2.25	2030	Riseborough Erin C & John C & M

6072100400	6548 126th Ave SE	Bellevue	98006	0.2202	4	2.25	2110	Hunter Linda D & Philip L
6072100410	6540 126th Ave SE	Bellevue	98006	0.1938	4	2.25	2060	Ingalls Roger W & Kathryn A
6072100420	6532 126th Ave SE	Bellevue	98006	0.1928	3	1.75	1530	Gebretatios, Nebiyou Z
6072100430	6524 126th Ave SE	Bellevue	98006	0.1928	5	3.25	2730	Nelson Aaron J & Victoria M
6072100440	6516 126th Ave SE	Bellevue	98006	0.1928	3	1.75	1840	Frese James L
6072100450	6508 126th Ave SE	Bellevue	98006	0.1875	3	2.25	1850	Lee Thomas K & Kathy Y.y.
6072100460	6500 126th Ave SE	Bellevue	98006	0.1848	4	2.25	2150	Shelhorse Cheryl
6072100470	12524 SE 65th St	Bellevue	98006	0.2008	4	1.75	1860	Shih, Frank J
6072100480	12520 SE 65th St	Bellevue	98006	0.1937	4	1.75	1910	Sparks Joseph A
6072100490	12512 SE 65th St	Bellevue	98006	0.1947	4	2.25	2270	Bayless, Samuel M & Sarah E
6072100500	6414 125th Ave SE	Bellevue	98006	0.2169	3	2.25	1420	Hitzel Gary D & Diann
6072100510	12505 SE 65th St	Bellevue	98006	0.2350	4	2.50	2510	Wolff Riley J Obrien
6072100520	12515 SE 65th St	Bellevue	98006	0.2078	4	1.75	1660	Kuhnke Robert C & Brita
6072100530	6507 126th Ave SE	Bellevue	98006	0.2061	3	2.50	1810	Kearney Robert W
6072100540	6519 126th Ave SE	Bellevue	98006	0.1928	4	1.75	1910	Lepar Douglas B & Sheleen D
6072100550	6527 126th Ave SE	Bellevue	98006	0.1928	4	2.50	2880	Partel Walter V
6072100560	6535 126th Ave SE	Bellevue	98006	0.1930	4	1.75	2580	Clements John A
6072100570	6541 SE 126th St	Bellevue	98006	0.2032	4	2.50	1920	Chevalier Jace Jeffre & Barbr
6072100580	6545 126th Ave SE	Bellevue	98006	0.1968	4	2.25	2060	Rademacher George J
6072100590	6549 126th Ave SE	Bellevue	98006	0.2169	3	1.75	1730	Creel William A & Kathleen D
6072100600	6553 126th Ave SE	Bellevue	98006	0.2270	4	2.50	2510	Vo Daniel Tuan Anh & Smith Ke
6072100610	6559 127th Ave SE	Bellevue	98006	0.1977	3	1.75	1570	Vaisar Tomas & Romana Vaisaro
6072100620	12518 SE 67th St	Bellevue	98006	0.1947	4	2.25	2090	Dooley Jonathan M
6072100630	12506 SE 67th St	Bellevue	98006	0.2125	4	2.25	2120	Hayes David E
6072100640	6568 125th Ave SE	Bellevue	98006	0.2247	3	2.25	1900	Kuhnke Robert C & Brita A
6072100650	6558 125th Ave SE	Bellevue	98006	0.2088	4	2.50	2360	Martin Beth
6072100660	6550 125th Ave SE	Bellevue	98006	0.2088	3	1.75	1570	Yantis Michael R
6072100670	6542 125th Ave SE	Bellevue	98006	0.1965	5	1.75	2040	McKay Thomas F & Jennifer A
6072100680	6534 125th Ave SE	Bellevue	98006	0.1965	3	2.25	1570	Kosaka Edward K
6072100690	6524 125th Ave SE	Bellevue	98006	0.1965	4	1.75	2020	Kim Gabriel
6072100700	6516 125th Ave SE	Bellevue	98006	0.1991	4	2.25	2390	Sowder Michael David & Tresa
6072100730	6419 125th Ave SE	Bellevue	98006	0.2755	4	2.25	2130	McCaulou Scott A & Kim E
6072100740	6503 125th Ave SE	Bellevue	98006	0.2755	4	2.25	1670	Odell Judith K
6072100750	6511 125th Ave SE	Bellevue	98006	0.2755	4	2.50	2130	Perry Mitchell Edward & Miche
6072100760	6519 125th Ave SE	Bellevue	98006	0.2755	3	1.75	1560	Ingle Kyle R

6072100770	6527 125th Ave SE	Bellevue	98006	0.2755	4	2.50	2210	Hadley Jack & Judith Diane
6072100780	6535 125th Ave SE	Bellevue	98006	0.2755	4	2.25	2510	Berg Ervin L
6072100790	6543 125th Ave SE	Bellevue	98006	0.2755	5	2.25	2410	Deshpande, Neelam
6072100800	6551 125th Ave SE	Bellevue	98006	0.2755	3	2.25	1530	Nevins Gary E & Deborah J
6072100810	6559 125th Ave SE	Bellevue	98006	0.2755	4	2.25	2040	Babaei Khossrow & Julie C
6072100820	6567 125th Ave SE	Bellevue	98006	0.2824	4	2.25	2510	Mattson Michael K & Maria J
6072100830	6575 125th Ave SE	Bellevue	98006	0.3410	4	2.25	2130	Peterson James C
6072100840	6583 125th Ave SE	Bellevue	98006	0.3788	5	3.25	3520	Iliuc Marinell & Livia
6072100850	12501 SE 67th St	Bellevue	98006	0.2253	5	2.25	2410	McGehee Richard K & Elizabeth
6072100860	12507 SE 67th St	Bellevue	98006	0.2445	4	2.25	2050	Mehrkens Thomas Kevin
6072100870	12515 SE 67th St	Bellevue	98006	0.1927	4	1.75	2010	Goldenberg Yefim D
6072100880	12523 SE 67th St	Bellevue	98006	0.1928	3	2.25	1660	Li Jankie & Alton
6072100890	12529 SE 67th St	Bellevue	98006	0.2102	4	2.50	2210	Hass Richard G
6072500010	12157 SE 68th Pl	Bellevue	98006	0.1911	3	1.75	1450	Kornas Hariklia A & Salah A
6072500140	6517 121st Pl SE	Bellevue	98006	0.2172	4	2.50	3020	Durbin Jason
6072500160	6529 121st Pl SE	Bellevue	98006	0.1848	3	2.00	2180	Wire Gerald G
6072500170	6535 121st Pl SE	Bellevue	98006	0.1758	2	1.75	1500	Mandt Sean L & Teresa Caldwel
6072500180	6545 121st Pl SE	Bellevue	98006	0.2054	5	2.25	1910	Armstrong Maureen E
6072500280	6504 121st Pl SE	Bellevue	98006	0.1695	3	2.00	1360	Melrose Steven A
6072500290	6510 121st Pl SE	Bellevue	98006	0.1666	3	1.50	1280	Hagman Kristina I
6072500300	6516 121st Pl SE	Bellevue	98006	0.1657	3	1.75	1560	Maher, Joel A & Caitlin M
6072500310	6522 121st Pl SE	Bellevue	98006	0.1657	4	1.50	1560	Carlson, Judith K Tr
6072500320	6528 121st Pl SE	Bellevue	98006	0.1951	4	1.75	1800	Gopal Sharon
6072500330	6534 121st Pl SE	Bellevue	98006	0.2278	3	1.50	1510	Thread, Nile D
6072500340	6540 121st Pl SE	Bellevue	98006	0.1722	4	1.75	1970	Hipp Michael L
6072500350	12154 SE 67th Pl	Bellevue	98006	0.1988	4	1.50	1600	Casady Douglas Edward & Mary
6072500360	12160 SE 67th Pl	Bellevue	98006	0.1702	4	2.50	1950	Alonso Millan & Almudena Rodr
6072500370	12204 SE 67th Pl	Bellevue	98006	0.1917	4	1.75	1560	Anderson Jennifer F
6072500380	12210 SE 67th Pl	Bellevue	98006	0.1958	4	1.75	1860	Garcia Daniel C & Daisy S
6072500390	6751 123rd Ave SE	Bellevue	98006	0.1934	3	1.50	1480	Gosson Frank J & M Belinda
6072500400	12205 SE 67th Pl	Bellevue	98006	0.1828	3	1.50	1390	Babulkob Ivan & Violeta
6072500410	12201 SE 67th Pl	Bellevue	98006	0.1789	3	1.50	1470	Tincknell Gerald L
6072500420	12161 SE 67th Pl	Bellevue	98006	0.2099	4	1.75	2800	Howe Kenneth D & Anne Tonella
6072500430	12155 SE 67th Pl	Bellevue	98006	0.2356	4	2.25	1730	Wang William Wei
6072500440	6710 121st Pl SE	Bellevue	98006	0.2313	4	2.25	2230	Chu Partner Lp

6072500450	6715 121st Pl SE	Bellevue	98006	0.2316	3	1.50	1360	Peterson Sharleen Eyman
6072500460	6709 121st Pl SE	Bellevue	98006	0.1937	5	1.75	2730	Marti Kari L
6072500470	12117 SE 67th Pl	Bellevue	98006	0.2209	3	1.75	1390	Bankson, Daniel & Anne
6072500480	6761 123rd Ave SE	Bellevue	98006	0.1961	4	1.75	2020	Brown W P
6072500490	6744 123rd Ave SE	Bellevue	98006	0.1702	3	2.50	1940	Agapov, Nataliya & Vitali
6072500500	6754 123rd Ave SE	Bellevue	98006	0.1703	4	2.00	2630	Clark Edward W
6072500510	6760 123rd Ave SE	Bellevue	98006	0.1650	3	2.00	2800	Man John
6072500520	6802 123rd Ave SE	Bellevue	98006	0.1695	3	1.50	1450	Chung Nam T & Joanna Wong & Woo
6072500530	6860 123rd Ave SE	Bellevue	98006	0.1881	4	2.75	2290	Wadley Scott E & Diana R
6072600110	12110 SE 67th Pl	Bellevue	98006	0.1860	3	2.50	2290	Ormiston Geoff & Margaret
6072600120	12153 SE 68th Pl	Bellevue	98006	0.2020	3	1.50	2290	Lee Kuang Hui
6072600130	12145 SE 68th Pl	Bellevue	98006	0.2020	4	2.25	2080	Shoemake Living Trust
6072600140	12143 SE 68th Pl	Bellevue	98006	0.2020	4	2.25	2370	Hernandez Amado & Rose
6072600150	12135 SE 68th Pl	Bellevue	98006	0.2020	4	1.75	2210	Waggoner Keith & Amy
6072600160	12127 SE 68th Pl	Bellevue	98006	0.2020	4	2.25	1820	Bordan Alexei & Natalia
6072600170	12119 SE 68th Pl	Bellevue	98006	0.2403	4	2.50	2100	Dotson Jacob & Nadezhda
6072600360	12111 SE 67th Pl	Bellevue	98006	0.1928	3	2.25	2130	Polkinghorn Maynard P
6072600420	12108 SE 68th Pl	Bellevue	98006	0.2285	3	1.75	1840	Greene Thomas & Rebecca
6072600430	12124 SE 68th Pl	Bellevue	98006	0.1520	4	1.75	1820	Schildgen Robert & Sandberg M
6072600440	12134 SE 68th Pl	Bellevue	98006	0.2009	3	2.25	1930	Nelson Kevin D & Andrea L
6072600450	12142 SE 68th Pl	Bellevue	98006	0.2450	3	1.75	1950	So Ying Hung & Dora Tsui Bing
6072600460	12150 SE 68th Pl	Bellevue	98006	0.2319	3	1.75	2170	MacRae William A & Carol L
6072600470	12154 SE 68th Pl	Bellevue	98006	0.2008	4	1.75	2260	Tim Kerry -trustee
6072650010	6572 123rd Ave SE	Bellevue	98006	0.2526	4	1.75	1910	Ngai, Matthew
6072650020	6578 123rd Ave SE	Bellevue	98006	0.2526	4	2.25	2950	Wong Shek Yiu & Cao Shu Ying
6072650030	6584 123rd Ave SE	Bellevue	98006	0.3013	3	2.25	1810	Brown Carl J
6072650040	6590 123rd Ave SE	Bellevue	98006	0.3246	4	2.50	2480	Roellich Melissa & Mark W
6072650050	6596 123rd Ave SE	Bellevue	98006	0.3362	3	2.25	2520	Richards Thomas Herbert
6072650060	6704 123rd Pl SE	Bellevue	98006	0.3713	4	2.50	2200	Nakashima Mari K & Sheri M
6072650070	6710 123rd Pl SE	Bellevue	98006	0.2893	3	2.75	3170	Simons Steven G & Carolyn D
6072650080	6716 123rd Pl SE	Bellevue	98006	0.3504	4	1.75	2100	Ockerlander Harry
6072650090	6722 123rd Pl SE	Bellevue	98006	0.2817	4	2.50	2000	Nixon Susan & Carolyn S
6072650100	6726 123rd Pl SE	Bellevue	98006	0.3762	4	2.50	2400	Culp Robert C
6072650110	6730 123rd Pl SE	Bellevue	98006	0.3074	4	1.75	2010	Pham Hong Van & Nam T Le
6072650120	6731 123rd Pl SE	Bellevue	98006	0.2394	8	4.00	3510	Xu Hongzhi & Peng Hua

6072650130	6727 123rd Pl SE	Bellevue	98006	0.2368	4	1.75	1650	Kim Jebum
6072650140	6723 123rd Pl SE	Bellevue	98006	0.1939	4	1.75	1860	Thomas Christopher L & Vicki
6072650150	6715 123rd Pl SE	Bellevue	98006	0.2307	5	1.75	2960	Newman Harry G & Virginia L
6072650160	6706 123rd Ave SE	Bellevue	98006	0.2069	3	1.75	1650	Luong Ann T & Kathy Luong
6072650170	6573 123rd Ave SE	Bellevue	98006	0.1884	4	2.50	1980	Chim Chantha & Dianne Ran
6072650180	6579 123rd Ave SE	Bellevue	98006	0.1860	4	2.75	1920	Bautista Alan R & Rosemary
6072650190	6585 123rd Ave SE	Bellevue	98006	0.1905	4	2.75	3020	Yim Amber
6072650200	6593 123rd Ave SE	Bellevue	98006	0.2149	3	1.75	1900	Park Sang B
6072650210	6701 123rd Ave SE	Bellevue	98006	0.1944	6	3.00	3580	Kocsis Mirabela
6072650220	6707 123rd Ave SE	Bellevue	98006	0.1865	4	1.75	1940	Gilberg Carsten E & Becky Jo
6072650230	6524 122nd Pl SE	Bellevue	98006	0.1721	5	2.50	2800	Drozynski David & Christensen
6072650240	6516 122nd Pl SE	Bellevue	98006	0.1997	4	1.75	1650	Liu Alan C W & Marjorie
6072650250	6510 122nd Pl SE	Bellevue	98006	0.1865	4	2.25	2220	Sevinc, Cagri
6072650260	6504 122nd Pl SE	Bellevue	98006	0.2164	3	2.50	1980	Matson Gregory T & Kathryn L
6072650270	6501 122nd Pl SE	Bellevue	98006	0.2922	4	2.25	1980	Wong Eric
6072650280	6507 122nd Pl SE	Bellevue	98006	0.2265	4	2.75	2760	Lanzer William L
6072650290	6511 122nd Pl SE	Bellevue	98006	0.2857	3	1.75	2340	Catanzariti, Raffaele & Margar
6072650300	6517 122nd Pl SE	Bellevue	98006	0.2204	4	1.75	1900	Arkell Raliegh J
6072650310	6523 122nd Pl SE	Bellevue	98006	0.1612	3	1.75	1750	Vishal, Vishal
6073300010	6905 125th Ave SE	Newcastle	98056	0.2058	5	2.50	2260	Yuen Thomas & He Helen Rong
6073300020	6909 125th Ave SE	Newcastle	98056	0.3444	4	1.75	1990	Middlemiss Carrie & Benjamin
6073300030	6913 125th Ave SE	Newcastle	98056	0.4808	5	2.50	2550	Satterlund Kirby & Carol
6073300040	6917 125th Ave SE	Newcastle	98056	0.2870	4	2.25	2020	Lattanzio, Frank M & Lindsey M
6073300050	6921 125th Ave SE	Newcastle	98056	0.2177	4	1.75	1800	Ishitani Joe
6073300060	7001 125th Ave SE	Newcastle	98056	0.1686	3	1.50	1110	Hall Janet A
6073300070	7005 125th Ave SE	Newcastle	98056	0.3320	3	1.75	1590	Robinson Melvyn A & Sherry
6073300080	7009 125th Ave SE	Newcastle	98056	0.4285	4	2.25	2530	Valentine William A
6073300090	7013 125th Ave SE	Newcastle	98056	0.3065	4	3.50	2270	Martirosyan Elina & Gazaryan
6073300100	7017 125th Ave SE	Newcastle	98056	0.2369	4	1.75	1720	Albrecht Barbara A
6073300110	7027 125th Ave SE	Newcastle	98056	0.3565	4	2.75	2270	Bonilla Diego & Strouss Margo
6073300120	7033 125th Ave SE	Newcastle	98056	0.3773	5	2.75	2520	Legacy Holdings LLC
6073300130	7201 125th Ave SE	Newcastle	98056	0.3226	4	1.75	1720	Bisset G A
6073300140	7207 125th Ave SE	Newcastle	98056	0.2894	4	1.75	1680	Minoru Revocable Living Tru
6073300150	7213 125th Ave SE	Newcastle	98056	0.2723	3	1.50	1670	Doak H K
6073300160	7206 125th Ave SE	Newcastle	98056	0.2379	3	1.75	2660	McQuaid Howard M & Suzanne L

6073300170	12509 SE 72nd St	Newcastle	98056	0.1781	5	2.50	2450	Pearce Crystal & Pearson Shan
6073300180	12513 SE 72nd St	Newcastle	98056	0.1655	3	2.50	1650	Jouper Jeffrey A
6073300190	12519 SE 72nd St	Newcastle	98056	0.1773	5	2.25	2270	Lee Hee Wook Et Al
6073300200	12527 SE 72nd St	Newcastle	98056	0.1655	4	2.25	2200	Hirschey Stephen & Claudia
6073300370	12570 SE 70th St	Newcastle	98056	0.2681	5	2.50	2340	Zeine Richard A Jr
6073300380	12566 SE 70th St	Newcastle	98056	0.2611	4	2.25	1720	Lutz Heidi B
6073300390	12562 SE 70th St	Newcastle	98056	0.2720	4	1.75	1780	Kane F E
6073300400	12558 SE 70th St	Newcastle	98056	0.4117	3	1.75	1830	Pence Othar Leslie
6073300410	12554 SE 70th St	Newcastle	98056	0.2270	4	1.75	1720	McHenry Trevor Gene & Davalee
6073300420	12544 SE 70th St	Newcastle	98056	0.2534	4	2.25	2180	Raney David A & Erin A
6073300430	12540 SE 70th St	Newcastle	98056	0.2709	3	1.75	1870	Rovinsky Jacob V & Larissa
6073300440	12536 SE 70th St	Newcastle	98056	0.2667	3	1.75	1840	Bovey Timothy L & Cynthia R
6073300450	12532 SE 70th St	Newcastle	98056	0.3329	4	1.75	2020	Henke Richard
6073300460	12528 SE 70th St	Newcastle	98056	0.2532	4	1.75	1930	Lermond Faye D
6073300470	12520 SE 70th St	Newcastle	98056	0.1677	4	2.25	2020	Chi Bessie Nai-Jung
6073300480	12512 SE 70th St	Newcastle	98056	0.1739	5	2.50	2550	Duncan David A & Liu Peirong
6073300490	12504 SE 70th St	Newcastle	98056	0.2033	4	2.25	2020	Leischow Richard T
6073300500	7006 125th Ave SE	Newcastle	98056	0.2318	6	2.25	2350	Huffman S J 3rd
6073300510	12513 SE 70th St	Newcastle	98056	0.2070	3	2.25	1900	Barney Morgan R
6073300520	12519 SE 70th St	Newcastle	98056	0.1868	4	1.75	1710	Haslam Linda S
6073300530	12525 SE 70th St	Newcastle	98056	0.1722	4	2.75	1860	Rublica, Nilda
6073300540	12533 SE 70th St	Newcastle	98056	0.1764	4	1.75	1810	Sampson Michal & Karen
6073300550	12541 SE 70th St	Newcastle	98056	0.1773	4	2.50	2550	Green Melissa V
6073300560	12547 SE 70th St	Newcastle	98056	0.1773	4	2.75	2330	Nesic Martha E
6073300570	12553 SE 70th St	Newcastle	98056	0.1773	3	1.75	1920	Fuchs Paul E & Joanna M
6073300580	12559 SE 70th St	Newcastle	98056	0.1773	4	2.25	2280	Williams Tiffany O
6073300590	12569 SE 70th St	Newcastle	98056	0.2147	4	1.75	1760	Tintinger James E & Lisa A
6073300600	7017 127th Pl SE	Newcastle	98056	0.1919	3	1.75	1990	Foisy David M & Carlson Carol
6073300610	12562 SE 71st St	Newcastle	98056	0.1773	4	2.75	3130	Blodgett Michael J
6073300620	12556 SE 71st St	Newcastle	98056	0.1773	4	1.75	1760	Woo Kit Wah
6073300630	12548 SE 71st St	Newcastle	98056	0.1720	3	1.75	1700	Kiyota Cathleen M S
6073300640	12540 SE 71st St	Newcastle	98056	0.1550	3	1.75	1660	Zimmerman Willie E
6073300650	12536 SE 71st St	Newcastle	98056	0.2333	3	1.75	1920	McMillen Craig
6073300660	12535 SE 71st St	Newcastle	98056	0.2342	4	2.25	2020	Leffingwell Jon T
6073300670	12539 SE 71st St	Newcastle	98056	0.1967	5	3.00	3460	Bourbonnais Charles J

6073300680	12545 SE 71st St	Newcastle	98056	0.1562	6	2.50	2650	Miyashiro Loyd T & Kathleen
6073300690	12551 SE 71st St	Newcastle	98056	0.1655	4	2.50	2650	Hsu Ming-Sung
6073300700	12559 SE 71st St	Newcastle	98056	0.1773	3	1.75	1650	Peterson Brad A & Sheila C
6073300760	12556 SE 72nd St	Newcastle	98056	0.1773	5	2.50	2450	Lam Auv Par
6073300770	12550 SE 72nd St	Newcastle	98056	0.1773	3	2.50	1990	Lin Chun-Cheng & Hui-Li Yang
6073300780	12544 SE 72nd St	Newcastle	98056	0.1773	4	1.75	1760	Smith, Janet
6073300790	12536 SE 72nd St	Newcastle	98056	0.1773	3	1.50	1340	Carpentier, Alison & Nishimoto
6073300800	12528 SE 72nd St	Newcastle	98056	0.1773	4	2.25	2020	Garner Rodney J
6073300810	12520 SE 72nd St	Newcastle	98056	0.1773	4	2.75	2650	Botocan Tiberiu Valerian & An
6073300820	12512 SE 72nd St	Newcastle	98056	0.1773	4	2.25	2220	Alley Paul D & Stacy L
6073300830	12504 SE 72nd St	Newcastle	98056	0.2491	5	2.50	2760	Nishimura Roy S & June M
6073300840	7026 125th Ave SE	Newcastle	98056	0.2238	4	2.25	2290	Hawkins Max H
6073300850	7020 125th Ave SE	Newcastle	98056	0.1993	4	2.50	2830	Lockhart David L & Noreen M D
6073300860	7024 125th Ave SE	Newcastle	98056	0.3490	4	1.75	1760	Coeuille Joan S
6073300870	7012 125th Ave SE	Newcastle	98056	0.6477	2	1.75	2030	Brt Donald E
6308000010	6521 127th Pl SE	Bellevue	98006	0.1168	3	2.50	2290	Sadik, Shiblee
6308000020	6535 127th Pl SE	Bellevue	98006	0.0965	3	2.50	2290	Leung, Ting Yu
6308000030	6557 127th Pl SE	Bellevue	98006	0.0964	3	2.50	2290	Nielsen Michael R & Nadine M
6308000040	6589 127th Pl SE	Bellevue	98006	0.0964	3	2.50	2290	Takahama Yuko & Toshika & Mitsu
6308000050	6601 127th Pl SE	Bellevue	98006	0.0962	3	2.25	2120	Anderson Alan James & Virgini
6308000060	6631 127th Pl SE	Bellevue	98006	0.1048	3	2.25	2120	Tomita Theodore H & Janet E
6308000070	6653 127th Pl SE	Bellevue	98006	0.0964	3	2.25	2120	Capron William & Kathleen
6308000080	6657 127th Pl SE	Bellevue	98006	0.0964	3	2.25	2120	Wilhite James L & Carlota M
6308000090	6673 127th Pl SE	Bellevue	98006	0.0965	3	2.25	2120	Lavalley Roberta
6308000100	6691 127th Pl SE	Bellevue	98006	0.1106	3	2.25	2120	Burrows Hugh W & Lise W
6308000110	6699 127th Pl SE	Bellevue	98006	0.1341	3	2.25	2120	Clancy Kathleen A
6308000120	6701 127th Pl SE	Bellevue	98006	0.1483	3	2.50	2290	Melnyk Oleh & Renata
6308000130	6706 127th Pl SE	Bellevue	98006	0.1201	3	2.25	2620	Rubens Helene S
6308000140	6708 127th Pl SE	Bellevue	98006	0.1054	3	2.25	2120	Carden Ann D
6308000150	6710 127th Pl SE	Bellevue	98006	0.1045	3	2.25	2120	Lee Foo & Gloria M
6308000160	6712 127th Pl SE	Bellevue	98006	0.1097	3	2.25	2120	Lee Sandy Sook & Kim Jin Chul
6308000170	6708 127th Pl SE	Bellevue	98006	0.1364	3	2.25	2120	Kangley J Lawrence
6308000180	6704 127th Pl SE	Bellevue	98006	0.1228	3	2.25	2120	Summerill Dorothy E
6308000190	6702 127th Pl SE	Bellevue	98006	0.1303	3	2.25	2120	Sele Aaron H & Jennifer E
6308000200	6674 127th Pl SE	Bellevue	98006	0.0918	2	2.25	1950	Doman Ava M

6308000210	6672 127th Pl SE	Bellevue	98006	0.0867	2	2.50	2290	Brisbine James M & Sikkema Ei
6308000220	6670 127th Pl SE	Bellevue	98006	0.0969	2	2.50	2290	Lloyd Andrew F & Pamela J
6308000230	6658 127th Ln SE	Bellevue	98006	0.1203	3	2.25	2120	Somers Nancy J
6308000240	6678 127th Pl SE	Bellevue	98006	0.0921	2	2.50	2090	Mudd John O & Margaret G
6308000250	6680 127th Pl SE	Bellevue	98006	0.0964	3	2.25	2120	Young Diana
6308000260	6682 127th Pl SE	Bellevue	98006	0.0964	3	2.25	2120	Wines Family Living Trust
6308000270	6690 127th Pl SE	Bellevue	98006	0.0941	2	2.50	2090	Cha Han Won
6308000280	6700 127th Pl SE	Bellevue	98006	0.0906	2	2.50	2290	Terui Glen J & Naomi
6308000290	6698 127th Pl SE	Bellevue	98006	0.0906	2	2.50	2090	Volynsky Bentsion & Lyubov
6308000300	6692 127th Pl SE	Bellevue	98006	0.1043	2	2.25	2120	Pang Audrey M
6308000310	6688 127th Pl SE	Bellevue	98006	0.0949	2	2.50	2290	Look Katie S & Or Ringo W
6308000320	6638 127th Pl SE	Bellevue	98006	0.0949	2	2.50	2289	Khapman Anna & Mogilevsky Ale
6308000330	6628 127th Pl SE	Bellevue	98006	0.1167	2	2.50	2089	Chung Paul Suk-Joon & Sung Ai
6308000340	6602 127th Pl SE	Bellevue	98006	0.0907	2	2.50	2289	Hoag Thomas E
6308000350	6592 127th Pl SE	Bellevue	98006	0.1047	3	2.50	2290	Lau Wun Hong
6308000360	6558 127th Pl SE	Bellevue	98006	0.0793	2	2.25	1951	Kuo Kai-Ling

sent on 6/1/16

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Dear Interested Property Owner,

The intent of this letter is to inform you that King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help to your residence during an emergency as well as help first responders such as police officers, fire fighters, and emergency medical staff coordinate response efforts to an emergency. The current emergency radio system is more than 20 years old and unless we do something now our current network is at risk of becoming unreliable.

To that end, King County PSERN, hereafter referred to as PSERN, would like to place an emergency communications facility behind the City of Bellevue Fire Station 9 building located at 12412 Newcastle Way, Bellevue, WA. PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a monopole to a height one hundred seventy feet (170') to effectively transmit and receive emergency radio communications. It also accounts for future tree growth obstruction from the surrounding trees used for screening part of the facility. PSERN is proposing to locate ground equipment nearby screened by a wood fence and landscaping.

The following items have been attached to provide additional information regarding the proposed project location and to provide feedback from the neighborhood:

- Photo Simulations
- Survey
- Preliminary Site Plan and Elevations

Please complete the enclosed survey. The survey will assist in determining if the neighbors surrounding Bellevue Fire Station #9 would be supportive of a PSERN facility installation on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible—**within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

For more information about the PSERN project, please visit ***www.psern.org***. In the meantime, should you have any questions and/or concerns, please contact Sarah Telschow, the agent/contact for PSERN, using the below contact information:

Sarah Telschow
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

I asked this:
Would this mean that we would be getting those Very High Power lines in our neighborhood.

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

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1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

WILL THIS TOWER ADVERSLY AFFECT OUR CURRENT TELEPHONE/TELEVISION SIGNALS. WILL IT OVERPOWER THE CURRENT SERVICES THAT WE RECEIVE?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - ALLAN HAGLUND
Address - 12226 SE. 65TH ST, BELLEVUE WA 98006-4411
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County
Department of Information Technology
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Allan Haglund
12226 SE 65th Street
Bellevue, WA 98006

June 7, 2016

Dear Mr. Haglund:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Will this tower adversely affect our current telephone/television signals?

Response #1

The proposed emergency communications facility will be updating and expanding the existing regional emergency communications system. Emergency radio will not impact and/or affect telephone and/or television signals. The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

Question #2

Will it overpower the current services that we receive?

Response #2

The proposed upgraded emergency radio system will not overpower the current services that are received. This King County PSERN facility will provide reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

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- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
None; I'm O.K. with it.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -	JACK Hadley
Address -	6527 125th AVE S.E., Bellevue, WA 98006
E-mail -	hadmam@msn.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

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King County

King County PSERN
Bellevue Station #9 - Survey

PUGET SOUND EMERGENCY RADIO NETWORK

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Please provide comments:

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:
Not sure what the alternatives are, but it appears to be a palatable design.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
None.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Candice Caldwell & Shane Jones
Address - 6530 - 127th Ave SE Bellevue WA 98006
E-mail -

Your input is greatly appreciated. Thank you!

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Please provide comments:

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Name - JON LEFFINGWELL
Address - 12535 SE 71ST ST
E-mail - jleffingwell@comcast.net

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E-mail -

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King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
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Please provide comments:

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Name - Susan Mayon
Address - 12627 S.E. 68th Pl. [redacted] Newcastle, Wa. 98006
E-mail - SMayon@Comcast.net

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King County PSERN
Bellevue Station #9 - Survey

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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -	Roger + Kate Ingalls
Address -	6540 126th Ave SE 98006
E-mail -	

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

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Name -	Judy Carlson
Address -	6522 121st Ave SE
E-mail -	diddy341@pobox.com

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It's not striking nor terribly obtrusive - in essence nothing to like or dislike

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Name - STEVEN GOLDSMITH
Address - 6521 - 127 TH AVE SE, BELLEVUE, WA 98006
E-mail - steve902000@gmail.com

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Name - Albert Chu
Address - 11219 103rd Ave NE
E-mail - Kirkland, WA 98033

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Name - Lila Woodruff May
Address - 7047 122nd Ave SE, Newcastle WA 98056-1220
E-mail -

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Name - MARK SCATTERGOOD
Address - 7015 132ND AVE SE, NEWCASTLE, WA 98056
E-mail - MARK@SCATTERS.NET

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Emergency services are important, and the pole looks fine to me.

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Name - Jennifer A. McKay
Address - 6542 125th Ave SE, Bellevue, WA 98006
E-mail - mckayjt@centurylink.net

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Name -	Mary Casady
Address -	12154 SE 67th Pl Bell
E-mail -	casady0414@msn.com

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A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Address - E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

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- [ ] Unsure

Please provide comments:

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Katie Graves Address - 6536 127th Ave SE, Bellevue E-mail - katie.heinitz@gmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
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King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
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Please provide comments:

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Please provide comments:

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Please provide comments:

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Name -
Address -
E-mail -

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Please provide comments:

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Please provide comments:

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Please provide comments:

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Address -
E-mail -

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

Traffic along Newcastle Way is already very bad because of the construction of homes near Newcastle City Hall. Hope this (construction) won't add to those delays.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
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King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
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King County PSERN
Bellevue Station #9 - Survey

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- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

I think this vital piece of the emergency communications network would be minimally invasive to the viewscape compared to the potential life saving benefits it could provide to our community.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:
It's plain and does not stand out, which is good.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Would the high voltage lines nearby cause interference?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Paul Alley
Address - 12512 SE 72nd St., Newcastle, 98056
E-mail - paul.alley@outlook.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Paul:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Would the high voltage lines nearby cause interference?

Response #1

The Federal Communications Commission (FCC) regulates the licensing and use of radio transmitters by state and local government and non-governmental entities engaged in public safety activities (911). The emergency radio system will not interfere with any electrical devise such as pacemakers, radios, wireless/cellular telephones, television signals, wireless internet, electrical transmission lines, etc.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

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1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [X] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [X] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

Yes, but 170' is too tall.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
170' is too tall, and should it fall over in the case of a natural disaster it could cause significant damage to nearby properties.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
I am a software engineer with research experience on communication systems. I find the proposed system to be suboptimal. I would prefer to see a few more towers installed that are of smaller height (< 140') instead. This would improve system redundancy in case the tower runs into an issue. 140' is also more aesthetically appealing.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Charles Sanglimsuwan
Address -
E-mail - charles s@live.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN – Bellevue Station 9 – Survey

June 7, 2016

Dear Charles:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

You have concerns about the tower falling over during windstorms.

Response #1

The tower is designed and constructed to meet very stringent structural requirements and will not pose a risk of falling onto adjacent properties. Emergency communication towers are built to withstand windstorms and earthquakes. It is imperative especially in disaster situations that emergency communication is available and operational.

Concern # 2

You have concerns that one tall tower isn't as adequate as several small towers.

Response #2

Unfortunately, installing multiple smaller towers will not work for this project. Several shorter towers would not be effective or reliable for transmitting and receiving emergency radio communications.

The height of the facility needs to be 170' in order to establish a direct line of sight to connecting infrastructure. This site has to connect to Capitol Hill in Seattle and Downtown Bellevue. The emergency radio network primarily relies on point-to-point microwave dish connections making the system reliable and operational during emergencies and/or disasters. Existing trees were surveyed and the proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail – stelchow@odelia.com
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King County PSERN
Bellevue Station #9 - Survey

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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive — Very Supportive!
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments: Yes – looks fabulous

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments: Go for it!

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Bev Brown
Address - 12712 S.E. 68th Pl., Bellevue 98006
E-mail - bev524@comcast.net

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
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Seattle, WA 98108
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King County

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Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

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- [x] No

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Can I use it for W:F.? Ans. Also, we fly drones around here, please don't get in our freq's. thanks! J/K

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Address - E-mail - brycerichert@gmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

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- [x] Yes
- [ ] No

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

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Please provide comments:

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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

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- [ ] Yes
- [x] No

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

IS THERE ANY HEALTH CONCERNS FOR FAMILIES?)

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail - MAMMA80@GMAIL.COM

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
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Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Concerned Neighbor:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Are there any health concerns for families?

Response #1

The equipment on top of the tower is required to meet all safety standards and regulations of the Federal Aviation Administration (FAA), the Federal Communications Commission (FCC), and any other agency of the Federal government with the authority to regulate towers and antennas. The proposed King County PSERN emergency communication facility will not pose any health risks to nearby families or the community. This King County PSERN facility will add reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
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E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

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1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [x] No

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Ying So
Address - 12142 SE 68th Place, Bellevue, WA 98006
E-mail - yinghso@hotmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
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Name -	William L. LANZER
Address -	6507 122nd Pl SE. Bellevue WA 98006
E-mail -	~~Hilo~~ kilo 7000@aol.com -

Your input is greatly appreciated. Thank you!

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

Is this Tower Is Safe Health of environmental Risk

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Does it pose any Health Risks - ? Does it effect Birds or Wildlife ? Does it effect people with pace makers ? Does it give off electro Magnetic Radiation ? ?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - STACY CARLINE Address - 12118 SE 70th St Newcastle Wa 98056 E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
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King County
Department of Information Technology
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Stacy Carpine
12118 SE 70th Street
Newcastle, WA 98056

June 7, 2016

Dear Stacy Carpine:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Does it pose any health risks?

Response #1

The proposed King County PSERN emergency communication facility will not pose any health risks to the community. This King County PSERN facility add provide reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Question #2

Does it affect birds or wildlife?

Response #2

The proposed tower will not affect birds and/or wildlife in the area. The tower will not require Federal Aviation Administration (FAA) lighting and will not require the use of guyed wires.

Question #3

Does it affect people with pacemakers?

Response #3

The proposed emergency communications facility will not impact pacemakers. The proposed facility is actually updating and expanding the existing regional emergency communications system. The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

Additionally, pacemakers have built-in features to provide protection from most types of interference produced electrical devices. The following link is very helpful regarding this topic:

http://www.medtronic.com/patient-services/cardiac-emc-guide/communications-office-equipment/index.htm

Question #4

Does it give off electromagnetic radiation?

Response #4

The equipment on top of the tower would emit electromagnetic radiation. However, the levels are low and meet all safety regulations/requirements.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
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Next Time Point Front & Back
Save Tax Dollars, Postage, Trees, Recycling

- [ ] Yes
- [x] No

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- [x] Yes, Supportive
- [ ] No, Not Supportive
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Please provide comments:

There's so many Cell Towers Around - this One is Important.

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [x] Yes, Supportive
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Please provide comments:

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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -	Doug Hitchcock
Address -	15307 SE 43rd Pl 98006
E-mail -	DHitchcoc@Hotmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

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- [x] Yes, Supportive
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Please provide comments: will the pole be lighted at night?

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Steve Melrose
Address - 6504 121st PL SE
E-mail - ssmelrose@excite.com

Your input is greatly appreciated. Thank you!

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Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Steve:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Will the pole be lighted at night?

Response #1

No, the proposed tower will not be lighted at night. The PSERN Bellevue Station 9 tower will not require any Federal Aviation Administration (FAA) lighting to be installed.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

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ANY ALTERNATIVE DESIGNS?

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Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

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1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -	GARY GERVAIS
Address -	12232 SE 65TH PLACE, BELLEVUE, WA. 98006
E-mail -	

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
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Email: stelschow@odelia.com

King County PSERN
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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

THIS TOWER WOULD BE UNOBTRUSIVE AND WOULD DO A LOT OF GOOD.

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [X] **Yes, Supportive**
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
NONE

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - AMADO HERNANDEZ
Address - 1214) SE. 68TH PL
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
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King County

King County PSERN
Bellevue Station #9 - Survey

PUGET SOUND EMERGENCY RADIO NETWORK

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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

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- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

I see no problems

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Jack Surprenant
Address - 7030 123 AV SE
E-mail - SSuperb2@MSN.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
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Bellevue Station #9 - Survey

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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Will this installation affect wireless telephone communications or internet/cloud capabilities

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - CAROL J. BROOM
Address - 6582 / 128 W Ave. SE. - Bellevue, WA - 98006
E-mail - carolbroom@comcast.net

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Carl:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Will this installation affect wireless telephone communication or internet/cloud capabilities?

Response #1

The proposed emergency communications facility will not affect wireless telephone communication and/or cloud capabilities. The proposed facility at the Bellevue Fire Station 9 will be updating and expanding the existing regional emergency communications system. The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

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- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Will this monopole be the only structure on this site?
Any issue w/ interference with current communications, eg. mobile phones or WiFi?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Janet Tomita
Address - 6631 127th PL SE, Bellevue, WA 98006
E-mail - jcy12222@gmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Janet:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Will this monopole be the only structure on site?

Response #1

The only structures to be added to the property as part of the proposed emergency communication facility is the tower and an equipment building.

Question #2

Any issue with interference with the current communications, e.g. mobile phones or WiFi?

Response #2

The proposed emergency communications facility at the Bellevue Fire Station 9 will not interfere with existing communications such as wireless telephone communication and/or Wi-Fi. The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

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- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail - N/A

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
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- [X] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [X] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

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Name -
Address -
E-mail -

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King County

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- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

I APPRECIATE BELLEVUE ASKING THE NEIGHBORHOOD HOW THEY FEEL ABOUT IT.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - ERIC O'NEAL
Address - 7055 122ND AVE SE, NEWCASTLE WA 98059
E-mail - ERIC-ONEAL@COMCAST.NET

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

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Please provide comments:

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Name -
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Please provide comments:

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- [ ] No, Not Supportive
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Please provide comments:

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Address -
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- [ ] No

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- [ ] No, Not Supportive
- [ ] Unsure

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- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

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Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Nebiyou Gebretatios
Address -
E-mail -

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Sarah Telschow (Agent for PSERN)
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- [ ] Yes
- [x] No

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- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [ ] **Yes, Supportive**
- [ ] **No, Not Supportive**
- [x] **Unsure**

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
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- [x] Yes
- [ ] No

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- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

It will be visible from my home & have a negative impact.

I question the height & whether it is necessary.

I also have concerns about the many other changes happening regionally and whether this is appropriate timing

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

See page 1

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

See page 1

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided) 425-453-7209

Name - Kathleen Clancy
Address - 4499 127th Pl SE, Bellevue
E-mail - clancykpeart@comcast.net

Your input is greatly appreciated. Thank you!

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Kathleen:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned with the negative impact the tower could have on property and home values.

Response #1

King County PSERN has located and designed this facility to have the least impact possible on the neighborhood. Similar sized towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values.

Concern #2

Question if the height of the tower is necessary.

Response #2

The proposal consists of constructing a monopole to a height one hundred seventy feet (170') to effectively transmit and receive emergency radio communications. The height of the facility needs to be 170' in order to establish a direct line of sight to connecting infrastructure. The emergency radio network primarily relies on point-to-point microwave antenna connections making the system reliable and operational during emergencies and/or disasters. Existing trees were surveyed and the proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail – stelchow@odelia.com
Office Phone – (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

WOULD BE SUPPORTIVE IF ITEMS IN MY QUESTIONS COMMENTS WERE ADDRESSED.

Thanks!

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [ ] **Yes, Supportive**
- [ ] **No, Not Supportive**
- [x] **Unsure**

Please provide comments:
I HAVE NOT SEEN ANY OTHER DESIGNS

4) **Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:**

Please provide comments:
- WILL NEIGHBORING LOTS BE ADVERSELY IMPACTED (DEVALUED)? IF SO WILL THEY BE COMPENSATED?
- WHAT IS THE DIESEL TANK FOR?
- WILL THERE BE ADDITIONAL ACTIVITY, NOISE, TRAFFIC BECAUSE OF PSERN INSTALL (BOTH DURING & AFTER)
- WERE OTHER LOCATIONS CONSIDERED? BENEFIT OF NEWCASTLE LOCATION

5) **Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)**

Name - ERIN RISEBOROUGH
Address - 6533 127TH AVENUE SE, BELLEVUE 98006
E-mail - ERISEBOROUGH@GMAIL

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Erin:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Will neighboring lots be adversely impacted (devalued)?

Response #1

Towers associated with cellular telephone antennas have been studied over the past 20 years and there is no evidence to support that these installations have negative impacts on property values or decrease home values. King County PSERN has located and designed this facility to have the least impact possible on the neighborhood.

Question #2

What is the diesel tank for?

Response #2

The proposed on-site diesel storage tank is to power the emergency back-up generator during power outages. It is essential that the emergency communication facility have power during extended power outages and emergencies in order to provide critical communication to emergency responders.

Question #3

Will there be additional activity, noise, traffic because of the PSERN install (both during & after)?

Response #3

Construction will take place during normal work week hours. There will be minimal noise and traffic associated with the construction phase. These facilities are unmanned and do not require additional activity or traffic after the initial construction phase except for routine

maintenance checks. The proposed equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels.

Question #4

Were other locations considered? What is the benefit of this location?

Response #4

The proposed King County **PSERN** facility is needed to ensure reliable communication with emergency responders in the field. King County **PSERN** reviewed another government property in Newcastle but it was determined that the placement of an emergency tower at the Bellevue Station 9 Fire Station would meet the needs in this area the best.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:
Very true. All question 3 response.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
not as depicted.
Could it not be camoflagued with "pine branches" or tree like coverage

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
Is it truly necessary to have a tower 170' tall?
Seems very extensive in height.
Why do we not have regulations (as in California) to "hide" simple pole

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Mike Bledgett
Address - 12562 SE 71st St Newcastle WA 98056
E-mail - M_J_BLODGETT@yahoo.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Mike:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Is it truly necessary to have a tower 170ft tall? Could it be camouflaged like a "mono-pine?"

Response #1

The proposal consists of constructing a monopole to this height to effectively transmit and receive emergency radio communications. The facility needs to be 170' in order to be above the trees and have a direct line of sight to connecting infrastructure. The emergency radio network primarily relies on point-to-point microwave antenna connections for reliable and effective communications during emergencies and/or disasters. The proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth.

The microwave dishes on this tower would not be easily concealed by using a mono-pine type design and the branches would need to be away from the microwave dishes to ensure that there is no disruption in communication.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

Any health concerns regarding output from the tower? (i.e. substations, powerlines etc.)?

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

Any necessary (off) site work? - Streets, etc.?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - David A. Raney
Address - 12544 SE 70th St
E-mail - 425-444-9155 / david.raney@saundcb.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear David:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Any health concerns regarding output from the tower? (i.e. substations, powerlines, etc.)?

Response #1

King County PSERN is licensed with the Federal Communications Commission (FCC) and must adhere to all requirements and regulations regarding radio frequencies and emissions. King County PSERN emergency communications facilities meet or exceed current standards and regulations of the Federal Aviation Administration (FAA), the Federal Communications Commission (FCC), and any other agency of the Federal government with the authority to regulate towers and antennas.

Unlike cellular telephones, the proposed emergency system is more like an enhanced two-way radio system. The emissions from the proposed facility are minimal and will not pose any adverse health risks to humans.

Question #2

Any necessary (off) site work? - streets, etc.?

Response #2

There is no off site work with this proposal. All construction will take place on the Bellevue Fire Station #9 property.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail – stelchow@odelia.com
Office Phone – (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

Which Voting Pamphlet was the PSERN Part?
The Vote absentee and Can please remember Voting for an emergency Communication tower or Radio System

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Sound abatement included ?
What happens during an emergency -
Can't you put it in a field away from us.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

These projects are sent out for our approval at the same time Tacoma Tabor Place,

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

My concern is about the tower possibly emitting a constant high-pitched noise and about the 1000 gallon diesel fuel storage tank being in the neighborhood.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments: The photos and all of the literature was very well done
I liked the design but have the concerns, as noted earlier, about a possible high-pitched noise & the large diesel fuel storage tank.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments: As I mentioned in question #2, I am concerned that such a powerful tower might emit a high-pitched sound or frequency that would affect humans and/or animals on a constant basis. I am also concerned about having a 1000 gallon diesel fuel storage tank in such close proximity to housing & neighborhoods

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - JAN H. THREAD
Address - 6534 - 121 ST PLACE SE, BELLEVUE, WA 98006
E-mail - belle45vue@yahoo.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Jan:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

You have concerns about the tower emitting a constant high-pitched noise or frequency that can affect humans or animals.

Response #1

The proposed equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels to the nearest property line.

The proposed 50kw emergency back-up generator is to provide power to the facility during power outages. Other than power outages, the generator will typically run once per week during daytime hours for maintenance and testing purposes only.

Concern #2

You have concerns about the 1,000 gallon diesel tank being in the neighborhood.

Response #2

The diesel storage tank will not emit any fumes and must adhere to stringent fire codes and regulations. As stated above, the generator will typically run once per week during daytime hours for maintenance and testing purposes only.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments: The plan lists many trees being removed. Your photo stimulation indicates no trees being removed (or at least aren't depicted as being gone).

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments: I'd like to see what it will look like with 7 or 8 trees gone.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Vicki Thomas
Address - 6723-123rd Pl SE Bellevue 98006
E-mail - vlfthomas@aol.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Vicki:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned about tree removal and what it might look like with 7 or 8 trees removed.

Response #1

King County PSERN will be required to obtain permit approval from the City of Bellevue to remove the trees. The site will be landscaped around the tower to provide additional screening.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:

I would prefer a shorter tower not to exceed 150' ht.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments:
I would prefer a shorter tower.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments: I have no objection to cutting the junk (cottonwood) trees but would like to see the cedar and fir trees retained.
I did phone a request for more readable plan prints or a place to view these plans. Unfortunately the material was promised but did not materialize.
MATERIAL WAS RECIEVED ON 9 MAY 16

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - ROBERT C CULP
Address - 6726 123RD PL. SE, BELLEVUE, 98006
E-mail - bobculp@msn.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [x] Unsure

Please provide comments: Not yet.
Too many unanswered questions remain. Need more specific details pertaining to the potential health issues as it affects nearby residences from the transmission of the PSERN tower.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments: I don't want my house (on 69th and 125th Ave SE) in the path of any radiowaves, microwaves or any other electronic or laser signals going to or from the new 170' monopole. (existing proposal and/or future)

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

1) Which direction will the radio, microwaves etc be traveling to and from the new tower?

2) How many and how large are future radio antennas etc and at what elevation on the new 170' monopole?

3) What kind of noise will be generated? (over →)

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - ~~Finn~~ Finn
Address - 6921 125th Ave SE Newcastle, WA 98056
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

4) How often will it be tested for both the generator and tower ~~equipment~~ ?

5) Explain what " Corp collinear Rx antenna is (total 4) ?

6) Will the monopole be leased out to other communication companies ? (in the future)

7) Current design vs. final design ? Is the plan that was provided to us the final desi

8) What companies will install their equip· ment on the monopole (AT·T, Sprint, etc) ?

9) Who gets the revenue from these commercial companies ?

10) What is the depth of emitted waves going to be ?

King County
Department of Information Technology
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Ishitanl
6921 125th Ave. SE
Newcastle, WA 98056

July 26, 2016

Dear Ishitanl:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Which direction will the radio microwaves etc. be traveling to and from the new tower?

Response #1

These microwave antennas are in a direct line of sight for communication with connecting infrastructure (microwave antennas on other towers or buildings) on Capitol Hill in Seattle and downtown Bellevue.

Question #2

How many and how large are future radio antennas etc. and at what elevation on the new 170' tower?

Response #2

King County PSERN's proposed design includes two (2) 4' microwave antennas located near the top of the tower at 160' and 165'. Four (4) collinear omni antennas are at the 135' elevation. At this time, there are no plans for future antennas.

Question #3

What kind of noise will be generated?

Response #3

King County PSERN's proposed equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels.

Question #4

How often will it be tested for both the generator and tower equipment?

Response #4

The proposed 50kw emergency back-up generator is to provide power to the facility during power outages. Other than power outages, the generator will typically run once per week during daytime hours for maintenance and testing purposes only.

Question #5

Explain what "collinear RX antennas is (total 4)?

Response #5

The collinear omni antennas are for transmitting (TX) and receiving (RX) radio communications with mobile two-way radios that first responders (police, fire, and ambulance) use in their vehicles.

Question #6

Will the monopole be leased out to other communication companies? (in the future)

Response #6

This is a public facility owned and operated by King County PSERN. At this time, there are no plans or future plans to lease to other communication companies.

Question #7

Current design vs. final design? Is the plan that was provided to us the final design?

Response #7

The King County PSERN design that was provided in the mailer is the design that will be submitted to the City of Bellevue for approval.

Question #8

What companies will install their equipment on the monopole (AT&T, Sprint, etc)?

Response #8

This is a public facility owned and operated by King County PSERN. At this time, there are no plans for this tower to be used for commercial purposes.

Question #9

Who gets the revenue from these commercial companies?

Response #9

This tower will not be used for commercial purposes.

Question #10

What is the depth of emitted waves going to be?

Response #10

King County PSERN is licensed with the Federal Communications Commission (FCC) and must adhere to all requirements and regulations regarding radio frequencies and emissions. Emission studies have been done for this site which will be submitted to the City. If felt necessary, a copy can be provided.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelschow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments: No, we do not support this location at all. It would negatively impact the area, as it would be smack dab in the center of a growing residential & shopping area. It would also lower the value of our home, as the tower would be seen directly through our kitchen window and back yard.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments: No. This would be a horrible addition to this growing neighborhood.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
* Decrease to home values and area value.
* Something like this should NOT be placed in a residential area that is growing and increasing in development, improvements and popularity.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Caitlin & Joel Maher
Address - 6516 121st PL SE Bellevue, WA 98006
E-mail - joel.a.maher@gmail.com; caitlin.m.maher@gmail.co

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Caitlyn & Joe:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

You are concerned about decreased home and property values in the area.

Response #1

King County PSERN has located and designed this facility to have the least impact possible on the neighborhood. Similar installations have been studied over the past 20 years regarding towers associated with cellular telephone antennas. There has been no finding that these installations have a negative impact on property values and will not decrease home values.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Put the communications equipment on the PSE Pole/tower just west of the fire Station. Keep the antennas together.

3) **Do you like the proposed design (170' monopole) as seen in the Photo Simulation?**

- [ ] **Yes, Supportive**
- [x] **No, Not Supportive**
- [ ] **Unsure**

Please provide comments:	No effort to camouflage / or hide. Ugly.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Steve Hirschey
Address - 12527 SE 72nd ST. NEWCASTLE WA. 98056
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Don't Think We need it.

these towers will be disruptive to day-to-day business of our neighborhood & may cause electrical / noise interference. + all Construction & Tree removal not healthy to my neighborhood!

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Don't support at all

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

On Previous page.

Don't DO it!

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - KAM KIAN.
Address - 13727 SE 68TH PL. Bellevue, WA 98006
E-mail - KAM.KIAN@GMAIL.COM

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [X] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [X] No, Not Supportive
- [ ] Unsure

Please provide comments: THERE IS NO PLACE FOR AN INSTALLATION OF THIS TYPE IN A RESIDENTIAL NEIGHBORHOOD. IT IS AESTHETICALLY COMPLETELY OUT OF PLACE. ALSO, A 35 KW DIESEL GENERATOR IS VERY NOISY & CREATES A LOT OF EXHAUST & SMELL. THIS INSTALLATION HAS TO BE LOCATED IN A NON DEVELOPED OR WOODED AREA AWAY FROM FOLKS HOMES.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
IT IS OBTRUSIVE & UNSIGHTLY.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
SEE PREVIOUS COMMENTS.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - JOHN CLEMENTS
Address - 6535, 126TH AVE. SE, BELLEVUE. 98006
E-mail - wyndrew1@aol.com.

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- ☐ Yes
- ☒ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- ☐ Yes, Supportive
- ☒ No, Not Supportive
- ☐ Unsure

Please provide comments:

TOO MUCH UTILITY FACILITIES ALREADY IN THIS NEIGHBORHOOD. CITY LIGHT TRANSMISSION LINES & PSE PROPOSED/EXISTING LINES PASSING OVERHEAD PLUS GASOLINE PIPELINE UNDERGROUND NEARBY.

NO MORE!

PLEASE CONSIDER ALTERNATE LOCATIONS.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
IT IS BAREEN AND UNSIGHTLY. TOO HIGH FOR NEIGHBORHOOD
ALMOST AS UGLY AS MONOPOLE CELL TOWER.
LATTICE STRUCTURE WOULD AT LEAST BE SOMEWHAT MORE PLEASING TO HAVE TO LOOK AT.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
GOT TO BE A BETTER SOLUTION.
MAYBE LOCATE ATOP EXISTING TRANSMISSION LINE TOWER. ALMOST SAME LOCATION AND WOULD BE COST EFFECTIVE.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - JAMES PETERSON
Address - 6575 -125TH AVE SE BELLEVUE
E-mail - JMPETERSON427@COMCAST.NET

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Unnecessary & unwanted.

Thanks!

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

Health concerns regarding microwave antennas? Construction? Possible to lower the height & increase number of monopoles @ various locations to attain same reach?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail - m.lattanzi@gmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Concerned Neighbor:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Health concerns regarding microwave antennas.

Response #1

The proposed emergency system is more like an enhanced two-way radio system. The equipment on top of the tower will meet all safety regulations/requirements. The proposed King County PSERN emergency communication facility will not pose any health risks to the community. This King County PSERN facility will add reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Concern #2

Construction.

Response #2

Construction activities will be limited to the subject property (Bellevue Fire Station 9) and construction times must adhere to the City of Bellevue regulations which is as follows, "noise emanating from construction sites is prohibited outside of the hours of 7 a.m. to 6 p.m. Monday through Friday, and 9 a.m. to 6 p.m. on Saturdays. No construction site noise is permitted on Sundays and legal holidays."

Question #1

Possible to lower the height and increase number of monopoles at various locations to attain same reach?

Response #3

Unfortunately, reducing the height of the facility and/or installing multiple towers will not work for this project. The height of the facility needs to be 170' in order to establish a direct

line of sight to connecting infrastructure. This site has to connect to Capitol Hill in Seattle and Downtown Bellevue. The emergency radio network primarily relies on point-to-point microwave dish connections making the system reliable and operational during emergencies and/or disasters. Existing trees were surveyed and the proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail – stelchow@odelia.com
Office Phone – (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

PSERN MAKES SENSE, BUT THIS LOCATION AND NEWPORT HILLS IN GENERAL IS ALREADY BOGGED DOWN WITH UTILITIES. POWER, TOWERS, GAS LINES ARE ALREADY NEAR THE STATION, AN ADDITIONAL "MICRO WAVE" TOWER WOULD FURTHER CONGEST THE AREA!

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

NICE DESIGN, BUT WOULD PREFER ALTERNATE LOCATION

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

It seems to me a site in non residential areas makes more sense. The entire neighborhood will see the flashing light at night. Not good. Impacts property value

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Same as above

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

Same as above

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Tom Richards
Address - 6596 123rd Ave SE
E-mail - Richardstf14@gmail.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Tom:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

You expressed concern about the flashing light.

Response #1

The PSERN Bellevue Station 9 tower will not require any Federal Aviation Administration (FAA) lighting to be installed.

Concern #2

You expressed concern that the tower would negatively impact property values.

Response #2

Towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values. King County PSERN has located and designed this facility to have the least impact possible on the neighborhood.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Too close to where I live. Tower/Pole is too tall.

Too many projects going on in this neighborhood already. There is already high voltage power lines and a cell phone tower near that location.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Too tall. Stop taking down all of our trees. There are a lot of low flying helicopters & private planes that use this area as their flight path.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

may interfere with my reception of other devices ie: cell phone, TV, Wifi, radio! Already have to deal with all the high voltage power lines. Too much noise & ~~construction~~ construction going on in this area. More high voltage power lines are proposed by PSE. There is also a gas main pipe line 1-2 blocks away.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

too tall

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

Not in scale with its surroundings

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

We **oppose** the installation of the PSERN tower at Bellevue Fire station 9. A 170' tower would rise roughly as high as a 16 story building, and would be visible from anywhere in our neighborhood as an outsized and intrusive addition, thereby **diminishing property values** for home owners. On our street (68th Place), it would be the first thing seen by anyone approaching (or appraising) property. Instead, we suggest you consider locating the tower where average building heights are **far** greater. Put it next to the large multistory buildings now being built at the Newcastle Commons. Put it in the parking lot of a big box store in Bellevue, or at the Renton Landing. Put it somewhere where you will not adversely affect both the livability and the economic value of an existing single-family residential neighborhood

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Your photo is deceptive, insofar as a wide-angle shot was used, including both a telephone pole and flag pole that are each **much** shorter than the proposed PSERN tower. Including these other poles in the photo causes the casual observer to greatly underestimate the visual impact of the tower.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

We suggest you be a little more straightforward with your PSERN tower proposal, however needed it may be to enhance emergency communications. While you might seek to avoid a NIMBY reaction, you actually do yourselves a disservice if you put forth any materials which understate the tower's environmental impact on a neighborhood such as ours. I say this based on my 35 years of state and local government service, including 24 years with King County. The public always deserves full disclosure.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Lawrence and Marci Wright
Address - 12635 SE 68th Pl, Bellevue, WA 98006
E-mail - twospeedos@comcast.net

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Lawrence and Marci:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned with property values.

Response #1

King County PSERN has located and designed this facility to have the least impact possible on the neighborhood. Towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values.

Concern #2

Photo sim is deceptive, as tower appears only slightly higher than flag pole.

Response #2

The photo simulation was to provide a visual idea of what the tower would look like. The provided photo simulation was scaled based on the known surveyed height of the trees. A balloon test (a 4' balloon is raised to the height of the tower) will be done prior to submitting for permits with the City of Bellevue to ensure that the photo simulations accurately depict the tower height. Please let me know if you would like to receive a copy of the photo simulations done using a balloon test.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Sarah Telschow (King County PSERN Agent/Representative)

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

Too close to homes / people
EM effects on people
noise of generator
Effect on property values
Antenna is huge!

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
way too large to be so close to my home

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
effect of antenna on population
effect on property values
what other locations are under consideration
~~Cancelled~~. how about near the Newcastle P&R?)

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - John H Custy
Address - 12624 SE 68th Pl Bellevue 98006
E-mail - JHCusty@yahoo.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear John:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

You expressed concern about property values.

Response #1

King County PSERN has located and designed this facility to have the least impact possible on the neighborhood. Towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values.

Concern #2

You expressed concern about generator noise.

Response #2

The proposed equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels.

The proposed emergency back-up generator is to provide power to the facility during power outages. Other than power outages, the generator will typically run once per week during daytime hours for maintenance and testing purposes only.

Concern #3

You expressed concern about the effect electromagnetic radiation might have on people.

Response #3

The proposed King County PSERN emergency communication facility will not pose any health risks to the people in the community. King County PSERN emergency

communications facilities meet or exceed current standards and regulations of the Federal Aviation Administration (FAA), the Federal Communications Commission (FCC), and any other agency of the Federal government with the authority to regulate towers and antennas. This King County PSERN facility adds reliability and allows improved critical emergency radio communications to reach and coordinate with emergency responders.

Concern #4

You expressed concern about seeing a flashing light.

Response #4

The PSERN Bellevue Station 9 tower will not require any Federal Aviation Administration (FAA) lighting to be installed.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

POTENTIAL INFLUENCE ON OUR HEALTH - MY WIFE HAS PACEMAKER.

ALSO, VERY POSSIBLE LOST OR REDUCE REAL STATE VALUE OF OUR PROPERTY.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - YEHUDA & ROSE GOLDENBERG
Address - 12515 SE 67TH STREET BELLEVUE, WA 98006
E-mail - Y.GOLDENBERG@COMCAST.NET

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Yefim and Rose:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned with the electromagnetic radiation's influence on pacemaker and health.

Response #1

The proposed emergency system is more like an enhanced two-way radio system. The emissions from the proposed facility are minimal and will not pose any adverse health risks to humans.

The proposed emergency communications facility will not impact pacemakers. The proposed facility is actually updating and expanding the existing regional emergency communications system. The Federal Communications Commission (FCC) licenses all communications by radio, television, wireless telephones, satellite, and cable to ensure that there are no issues with interference. King County PSERN is licensed by the FCC.

Additionally, pacemakers have built-in features to provide protection from most types of interference produced electrical devices. The following link is very helpful regarding this topic:

http://www.medtronic.com/patient-services/cardiac-emc-guide/communications-office-equipment/index.htm

Concern #2

Concerned with property values.

Response #2

King County PSERN has located and designed this facility to have the least impact possible on the neighborhood. Towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

See attached sheet

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

see attached sheet

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

see attached sheet

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Richard & Elizabeth McGehee
Address - 12501 SE 67th St, Bellevue 98006
E-mail - lizmcgehee@q.com

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Thank you for the opportunity to comment on the proposed emergency communications tower at Bellevue Fire Station 9. While we support an emergency communications upgrade, we do *not* support the location of the proposed design at the fire station site. We have the following concerns:

- Since we have a shallow backyard (only about 40 feet), the proposed facility would be closer to our home than to the fire station, thus the tower would be an eyesore for us since it is much taller than most of the trees in the greenbelt and would "tower" over our home.
- We are concerned about disturbing the greenbelt environment. We have lived nearly thirty years in this home and one of the main reasons we chose it was this greenbelt, which is home to many species of birds and other wildlife. Putting a communications tower in the middle of it would be disruptive.
- Trees in a grove tend to protect and shield each other in a windstorm. Removing the trees indicated in the proposal could render some of the remaining tall trees more likely to fall on our home during windstorms.
- Since we have experienced windstorms of 90 mph in the past, we wonder what level of storm the tower itself is designed to withstand.
- We do not see any mention of the power level and frequencies of the transmitters involved in the proposal and wonder about the electromagnetic effects so near our home.
- We are concerned about disturbance from the lights on the tower and facility.
- Since the generator is located on the side closest to our property, it would add to the diesel fumes during power outages and especially the noise level, which is already quite noticeable from the fire station generator.

We want to be good neighbors, but in this case the proposed facility is almost literally in our backyard and we feel it would be very disturbing for us. Please consider locating the facility to a different site that is not so close to houses. Please keep us informed of any decisions made in this process.

Richard and Elizabeth McGehee

12501 SE 67th Street

Bellevue, WA 98006

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Richard & Elizabeth:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned with tree removal in the green belt.

Response #1

At this time, King County PSERN is proposing to remove seven (7) trees for this project. The trees that are proposed to be removed are as follows:

Tree Type	Trunk Diameter	Number
Douglas Fir	44"	1
Deciduous (species not known)	32"	1
Deciduous (species not known)	20"	1
Cedar	60"	1
Deciduous (species not known)	26"	1
Deciduous (species not known)	28"	1
Douglas Fir	28"	1
	Total	7

King County PSERN will be required to obtain permit approval from the City of Bellevue to remove the trees. The site will be landscaped around the tower to provide additional screening. The City of Bellevue may require additional landscaping and/or tree replacement to ensure that the green belt and associated buffer is not impacted.

Concern #2

Tower height.

Response #2

The proposal consists of constructing a tower to this height to effectively transmit and receive emergency radio communications. The facility needs to be 170' in order to be above the trees and have a direct line of sight to connecting infrastructure. The emergency radio

network primarily relies on point-to-point microwave antenna connections for reliable and effective communications during emergencies and/or disasters. The microwave dishes need to connect to infrastructure on Capitol Hill and downtown Bellevue. The proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth.

Concern #3

Designed wind load specs.

Response #3

The tower is designed with the following structural standards and wind loading:

- 85.0 mph wind (3 second gust, 50 year return period)
- 30.0 mph ice wind (50 year return period)
- Design ice thickness = 0.25 inches
- Exposure Category B
- Structure Classification III
- Topography Category 3 (H = 400)
- 60.0 mph basic wind speed with no ice for twist and sway
- Spectral response acceleration at short periods and 1 second (Ss = 1.42 & S1 = 0.54)

Concern #4

Diesel fumes and noise.

Response #4

The diesel storage tank will not emit any fumes and must adhere to stringent fire codes (both the City of Bellevue and International Fire Code (IFC) regulations). Additionally, the proposed generator and equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels.

The proposed on-site diesel storage tank is to power the emergency back-up generator during power outages. It is essential that the emergency communication facility have power during extended power outages and emergencies in order to provide critical communication to emergency responders.

Concern #5

Electromagnetic health effects.

Response #5

The proposed emergency system is more like an enhanced two-way radio system. The emissions from the proposed facility are minimal and will not pose any adverse health risks.

Concern #6

Tower lights.

Response #6

The PSERN Bellevue Station 9 tower will not require any Federal Aviation Administration (FAA) lighting to be installed.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- ☐ Yes
- ☒ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- ☐ Yes, Supportive
- ☒ No, Not Supportive
- ☐ Unsure

Please provide comments: I am shocked that a monopole with multiple high performance microwave antennas is being proposed so close to several homes, including mine. I've worked in the antenna design industry and have a tough time believing that the emission levels from the near side lobes will be 100% safe for our health. Have you overlaid a plot of the sidelobes and backlobes with a map of our neighborhood? Many of our nearby neighbors live in their homes 24 hours a day. They have children and elderly.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments: The proposed dark green monopole looks to be 70(?) feet above the existing tree line and will stick out like a sore thumb. Regardless of where the pole goes, the top half should be painted a flat matt, sky blue. If this goes in near our homes, our home values will take a big hit.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

The ground structure in the proposal shows a generator and lights. How will you prevent the noise and lights from being heard and seen from the nearby properties? Will the 170ft pole need a red light on top? I hope not!

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Thomas K. Mehrkens, P.E.
Address - 12507 SE 67th St. Bellevue, WA 98006
E-mail - tmehrkens@gmail.com

Your input is greatly appreciated. Thank you! May 3, 2016

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

★ Several neighbors have [redacted] expressed similar concerns to me, but can't recall receiving a survey.

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Thomas:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

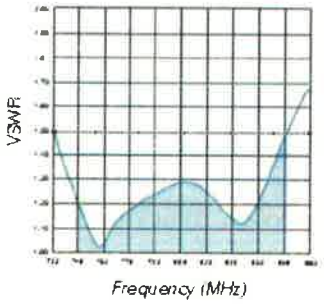
Emissions from the side lobes and back lobes.

Response #1

The proposed tower equipment for this facility is as follows: two (2) microwave dishes and two (2) omni antennas. The proposed microwave dishes are point to point with a 1.6° to 2.0° beam width (both horizontal and vertical). Only the two (2) proposed omni antennas would have emissions associated with lobes.

The antenna pattern is the graphical representation of the radiation properties of the antenna as a function of space. Any given antenna pattern has portions of the pattern that are called lobes (this include the main lobe, side lobe, and back lobe. The following is the electrical and mechanical information and associated lobes for the proposed omni antennas:

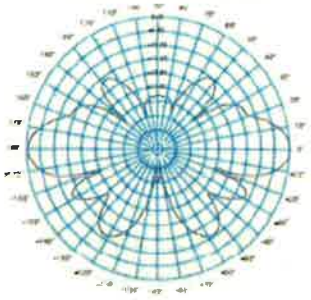
Typical VSWR Response (CC807-06)



Electrical

Model Number	CC807-03	CC807-06	CC807-09	CC807-11
Nominal Gain *dBd* (dBi)	3 (5.1)	6 (8.1)	8 (10.1)	10.5 (12.6)
Frequency *MHz*	746 - 870			
Tuned Bandwidth *MHz*	Full band			
VSWR (Return Loss)	<1.5:1			
Nominal Impedance Ω	50			
Vertical Beamwidth°	28	17	9	4.5
Horizontal Beamwidth°	Omni +/- 0.5dB			
Input Power *W*	250	500		
Passive IM 3rd order (2x20W) *dBc*	-150			
Peak Instantaneous Power *(kW)*	25			

CC807-06 - E Plane



Mechanical

Model Number		CC807-03	CC807-06	CC807-09	CC807-11
Construction		Composite fiberglass sky, blue radome, aluminum mounting tube			
Length *m*		1.3	1.8	2.9	5.3
Radome Diameter *mm*		76			
Weight *kg*		4	7	12	22
Shipping Weight *kg*		8	11	18	30
Shipping Dimensions *mm*	H	139			
	W	139			
	L	1400	1900	3000	5600
Termination		7/16" DIN fixed female			
Suggested Clamps (not included)		2 x UC-114			
Invertible Mounting		Yes (1)			
Projected area *cm²*	no ice	806	1268	2320	4560
	with ice	1048	1571	2880	5760
Lateral Thrust @ 160km/h *N*		96	150	276	540
Wind Gust Rating *km/h*		240			
Torque @ 160km/h *Nm*		20	73	278	1032

The proposed emergency system is more like an enhanced two-way radio system. The emissions from the proposed facility are minimal and will not pose any adverse health risks. All of the proposed equipment (2 microwave dishes and 2 omni antennas) will meet all safety regulations/requirements regarding emissions. This King County PSERN facility will add reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Concern #2

Tower looks to be 70ft in the photo sim and the top half should be painted sky blue.

Response #2

The photo simulation was to provide a visual idea of what the tower would look like. The provided photo simulation was scaled based on the known surveyed height of the trees. A balloon test (a 4' balloon is raised to the height of the tower) will be done prior to submitting for permits with the City of Bellevue to ensure that the photo simulations accurately depict the tower height. Please let me know if you would like to receive a copy of the photo simulations done using a balloon test.

Painting towers two colors (green/brown for the base and blue for the top) in the past has not provided better tower screening/blending in Western Washington. At this time, King County PSERN is proposing to paint the tower a dark green (Sherwin Williams Rock Garden (SW6195) using a non-reflective finish). However, King County PSERN is amendable to paint the tower any color that the City of Bellevue determines would provide the best camouflaging.

Concern #3

Generator noise and associated mitigation.

Response #3

The proposed equipment at this site location is required to meet local residential noise regulations for both daytime and nighttime noise levels. At this time, the proposed facility is required to install an 8'-0" tall sound attenuating wood fence as noise mitigation to ensure that equipment meets the required 45 dBA nighttime limit.

The proposed emergency back-up generator is to provide power to the facility during power outages. Other than power outages, the generator will typically run once per week during daytime hours for maintenance and testing purposes only.

Concern #4

Light on tower and associated mitigation.

Response #4

The PSERN Bellevue Station 9 tower will not require any Federal Aviation Administration (FAA) lighting to be installed.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County

King County PSERN
Bellevue Station #9 - Survey

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [X] No, Not Supportive
- [ ] Unsure

Please provide comments:

A tower of that size is more suited to an industrial area than a residential area.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -	George Rademacher
Address -	6545 132th Ave SE Bellevue, 98006
E-mail -	

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- ☐ Yes
- ☒ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- ☐ Yes, Supportive
- ☒ No, Not Supportive
- ☐ Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

#2. I am not supportive of a PSERN emergency communications tower located in eyesight of my backyard. The power high voltage power lines running above my backyard and a power tower within eyesight has diminished our property value upwards to 20%, according to local realtors and several articles published at https://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value. Adding additional tower and equipment will only devalue our property further.

#3. The proposed design 170' monopole, as seen it the photo simulation, looking straight on, north towards the fire station, does not look intrusive, however, a view looking east, with the proposed removed trees, would be an eyesore among an eyesore (the high voltage power lines and tower).

#4. We are planning on selling our house within the next year. As stated in my responses to questions 2 and 3, a PSERN emergency communications tower will additionally diminish the value of our house. Not only will it be an eyesore but it is perceived that radio frequencies are a health concern, regardless of what research studies show. It is not clear to me why the tower would be placed to the east of the Fire Station 9 and not centered in the wooded area directly behind Fire Station 9. Another concern is why is the 45'x45' Telecommunication Compound referred to as Proposed Lease Area (Sheet A-1), leading me to believe that a non-government entity will be paying the government for this space. I would then question if this emergency communication tower will be used for non-emergency communication.

Susan Nixon

6722 123rd PL SE
Bellevue, WA 98006
susan.nixon@gmail.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Susan:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Tower will further diminish property values.

Response #1

Towers associated with the wireless communication industry have been studied by appraisers over the past 20 years and there has been no discernable negative impacts on single-family home values resulting from the presence of a tower in a neighborhood.

Question #1

Will this tower be used for private cell carriers?

Response #2

The main purpose of the tower is for King County PSERN and associated emergency communications. The tower will be constructed to accommodate additional equipment. However, allowing the property to be used for private cell carriers and associate equipment will be determined on a case by case basis.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [x] Yes
- [ ] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

REQUIRES RF INTERFERANCE EVALUATION

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [x] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

WHAT IS THE IMPACT OF (ANY) RF INTERFERENCE?

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- ☐ Yes
- ☒ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- ☐ Yes, Supportive
- ☒ No, Not Supportive
- ☐ Unsure

Please provide comments:
Did NOT KNOW OF LEVEE APPROVAL

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:
DRAWINGS TOO COMPLEX FOR AVERAGE HOMEOWNER. SEEMS LIKE A 'DONE DEAL'. NORTH VIEW ONLY PROVIDED.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:
NO INFORMATION ON HEALTH EFFECTS OF MICROWAVE TOWER. CONCERNED ABOUT 1000 GALLON DIESEL FUEL STORAGE TANK. Additional CONCERN ABOUT PROPERTY VALUE ↓.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - PAT HAYES
Address - 12506 SE 67ST, BELLEVUE, WA 98006
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County
Department of Information Technology
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

June 7, 2016

Pat Hayes
12506 SE 67th Street
Bellevue, WA 98006

Dear Pat Hayes:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Concerned with health effects of microwave antennas.

Response #1

The equipment on top of the tower will meet all safety regulations/requirements. The proposed King County PSERN emergency communication facility will not pose any health risks to the community. This King County PSERN facility will add reliability and allow improved critical emergency radio communications to reach and coordinate with emergency responders.

Concern #2

Concerned with the proposed diesel tank.

Response #2

The proposed on-site diesel storage tank is to power the emergency back-up generator during power outages. It is essential that the emergency communication facility have power during extended power outages and emergencies in order to provide critical communication to emergency responders. The size is necessary to ensure that communications to emergency responders are not interrupted during outages. The diesel storage tank will not emit any fumes and must adhere to stringent fire codes (both the City of Bellevue and International Fire Code (IFC) regulations).

Concern #3

Concerned with decreased property values.

Response #3

Towers associated with cellular telephone antennas have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and will not decrease home values. King County PSERN has located and designed this facility to have the least impact possible on the neighborhood.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

- [ ] Yes
- [x] No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

I'm very Concerned that emissions from the antennas could harm the health of my family and the Elderely living at my residence. I'm also very Concern that the value on my home will GO down, because of the large antennas, tall monopole.

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [x] No, Not Supportive
- [ ] Unsure

Please provide comments:

The tall green pole is going to stick up way above the trees and look like something out of "Jack and the Bean Stock" Neighbors will see it for blocks.

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

im concerned again about my health value of the home, going down Tall Pole with the Light's from the Structure Blinking in my windows at night.

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name - Marinell Iliuc
Address - 6583 125th ave SE Bellevue WA 98006
E-mail - MLILIUC @ comcast.net

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

Re: King County PSERN - Bellevue Station 9 - Survey

June 7, 2016

Dear Marinell:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Concern #1

Emissions from the tower affecting health and devaluation of property.

Response #1

The proposed emergency system is similar to an enhanced two-way radio system. The emissions from the proposed facility are minimal and will not pose any adverse health risks.

Towers associated with the wireless communication industry have been studied over the past 20 years and there has been no finding that these installations have a negative impact on property values and do not decrease home values.

Concern #2

Flashing light blinking on tower.

Response #2

There will be no lights on the tower. The Federal Aviation Administration (FAA) does not require any lighting to be installed on the PSERN Bellevue Station 9 tower.

Concern #3

Height of the tower.

Response #3

The proposed tower height was determined as the minimal height required so that the facility would not be obstructed by expected future tree growth. The facility needs to be 170' in order to be above the trees and have a direct line of sight to connecting infrastructure. The emergency radio network primarily relies on point-to-point microwave antenna connections for reliable and effective communications during emergencies and/or disasters. The microwave dishes need to connect to infrastructure on Capitol Hill and downtown Bellevue.

King County
Department of Information Technology
401 Fifth Avenue, Suite 600
Seattle, WA 98104
206-263-7887 Fax 206.296.7608
TTY Relay: 711

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

Faye Lermond
12528 SE 70th St
Newcastle, WA 98056

June 8, 2016

Dear Ms. Lermond:

Thank you so much for taking the time to complete the survey regarding the proposed King County Puget Sound Emergency Radio Network (PSERN) emergency communications facility at the Bellevue Fire Station 9 located at 12412 Newcastle Way, Bellevue, WA.

The returned survey had a few questions/concerns outlined. The questions and concerns were as follows:

Question #1

Would this mean that we would be getting those very high power lines in our neighborhood?

Response #1

There will not be any power lines connected to the tower. The antennas transmit and receive communications through radio frequencies.

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail - stelchow@odelia.com
Office Phone - (206) 490-3804

Please let me know if you have any other questions and/or concerns about the project.

Respectfully,

Sarah Telschow (King County PSERN Agent/Representative)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
E-mail – stelchow@odelia.com
Office Phone – (206) 490-3804

Sarah Telschow

From: Sarah Telschow
Sent: Thursday, April 28, 2016 9:49 AM
To: 'Jill H'
Subject: RE: Newport Hills PSERN
Attachments: PSERN Survey Notice (Final).pdf; PSERN Survey (Final).pdf; Photo Simulation.pdf; Survey Plans and Elevations.pdf

April 28, 2016

Jill:

Thank you for your e-mail. Your address was not on the mailing list (mailed information to properties within 1,000' of the fire station) but I would be happy to share the information and have you provide comments/feedback on the project.

Please find the attached information. Please let me know if you have any problems opening/viewing it.

Please mail the survey back to my attention at the below address or you can e-mail me it as well.

Thanks

Sarah Telschow, AICP
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202 (New Address)
Seattle, WA 98108
Office: (206) 490-3804
Cellular: (206) 979-6268
Fax: (206) 490-3839

From: Jill H [mailto:jillehoelscher@hotmail.com]
Sent: Thursday, April 28, 2016 9:38 AM
To: Sarah Telschow
Subject: Newport Hills PSERN

Hi Sarah,

My neighbors received a letter about a proposal to build a large communications tower near the Fire Station Number 9 in our neighborhood. I am writing to you because I did not receive the letter but would like the opportunity to vote. Can you please check that you mailed me a letter? My address is 6348 121st Place SE Bellevue WA. If not, could you please send me a letter so I can give my input?

Thanks very much--

Jill Hoelscher

(c) 206.778.7263 | (h) 425.614.0419 | jillehoelscher@hotmail.com

King County

RECEIVED
APR 26 REC'D
Development Services

PSERN
PUGET SOUND EMERG
RADIO NETWORK

Dear Interested Property Owner,

The intent of this letter is to inform you that King County is in the process of updating and expanding its regional emergency communications system called Puget Sound Emergency Radio Network (PSERN). This system enables 9-1-1 dispatchers to send help to your residence during an emergency as well as help first responders such as police officers, fire fighters, and emergency medical staff coordinate response efforts to an emergency. The current emergency radio system is more than 20 years old and unless we do something now our current network is at risk of becoming unreliable.

To that end, King County PSERN, hereafter referred to as PSERN, would like to place an emergency communications facility behind the City of Bellevue Fire Station 9 building located at 12412 Newcastle Way, Bellevue, WA. PSERN is proposing this site to provide critical emergency radio communications to reach and coordinate with emergency responders within the existing network who serve King County residents.

The proposal consists of constructing a monopole to a height one hundred seventy feet (170') to effectively transmit and receive emergency radio communications. It also accounts for future tree growth obstruction from the surrounding trees used for screening part of the facility. PSERN is proposing to locate ground equipment nearby screened by a wood fence and landscaping.

The following items have been attached to provide additional information regarding the proposed project location and to provide feedback from the neighborhood:

- Photo Simulations
- Survey
- Preliminary Site Plan and Elevations

Please complete the enclosed survey. The survey will assist in determining if the neighbors surrounding Bellevue Fire Station #9 would be supportive of a PSERN facility installation on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible—**within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

For more information about the PSERN project, please visit ***www.psern.org***. In the meantime, should you have any questions and/or concerns, please contact Sarah Telschow, the agent/contact for PSERN, using the below contact information:

Sarah Telschow
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

King County PSERN
Bellevue Station #9 - Survey

King County Puget Sound Emergency Radio Network (PSERN) approached the City of Bellevue Fire Department about the possibility of placing a 170' emergency communications monopole tower and equipment on the site of Bellevue Fire Station 9, 12412 Newcastle Way. Before making a decision, the City of Bellevue requested a survey to assist in determining if the fire station neighborhood would be supportive of an emergency communications facility being placed on fire station property.

A self-addressed stamped envelope has been provided. Please mail the completed survey back as soon as possible. **Please return the survey within two (2) weeks of receipt.** (Please note survey responses are anonymous unless contact information is provided).

1) Have you heard or are you aware of the PSERN levee that was passed by King County voters on April 28th, 2015, for funding and upgrading the current emergency radio system? Please mark one (1) box below.

☐ Yes
☐ No

2) Would you be supportive of a PSERN emergency communications tower and equipment to provide expanded emergency communications, as depicted and described in this mailer, being installed on the Bellevue Fire Station 9 property?

☐ Yes, Supportive
☐ No, Not Supportive
☐ Unsure

Please provide comments:

3) Do you like the proposed design (170' monopole) as seen in the Photo Simulation?

- [ ] Yes, Supportive
- [ ] No, Not Supportive
- [ ] Unsure

Please provide comments:

4) Please outline any questions and/or concerns that you have about the proposed PSERN emergency communications installation:

Please provide comments:

5) Please provide contact information. (Please note survey responses are anonymous unless contact information is provided)

Name -
Address -
E-mail -

Your input is greatly appreciated. Thank you!

Please feel free to contact me for any questions and/or concerns that you have regarding the proposed project.

Sarah Telschow (Agent for PSERN)
Odelia Pacific Corporation
5506 6th Avenue South, Suite 202
Seattle, WA 98108
Office: (206) 490-3804
Email: stelschow@odelia.com

CAMP+
ASSOCIATES

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

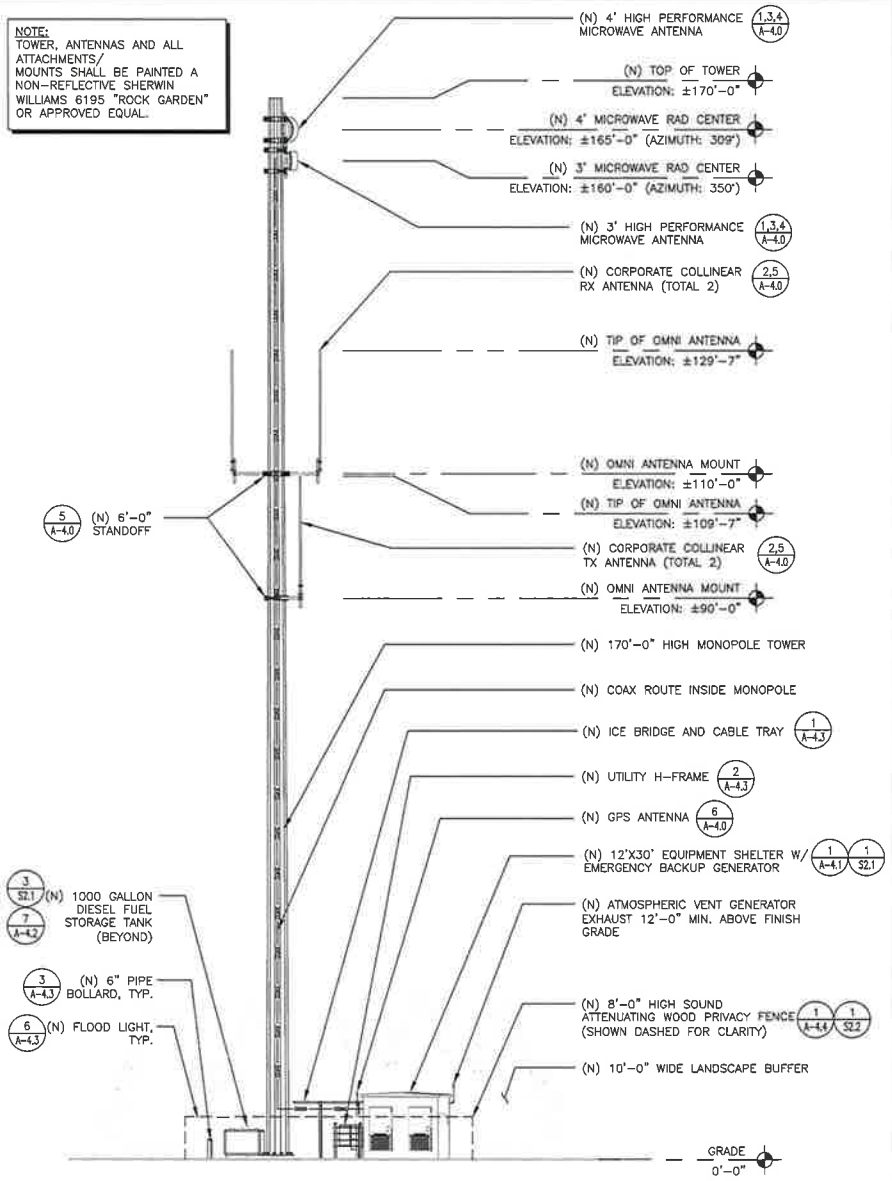
CURRENT

VIEW #1 LOOKING NORTH
ON NEWCASTLE WAY

PROPOSED

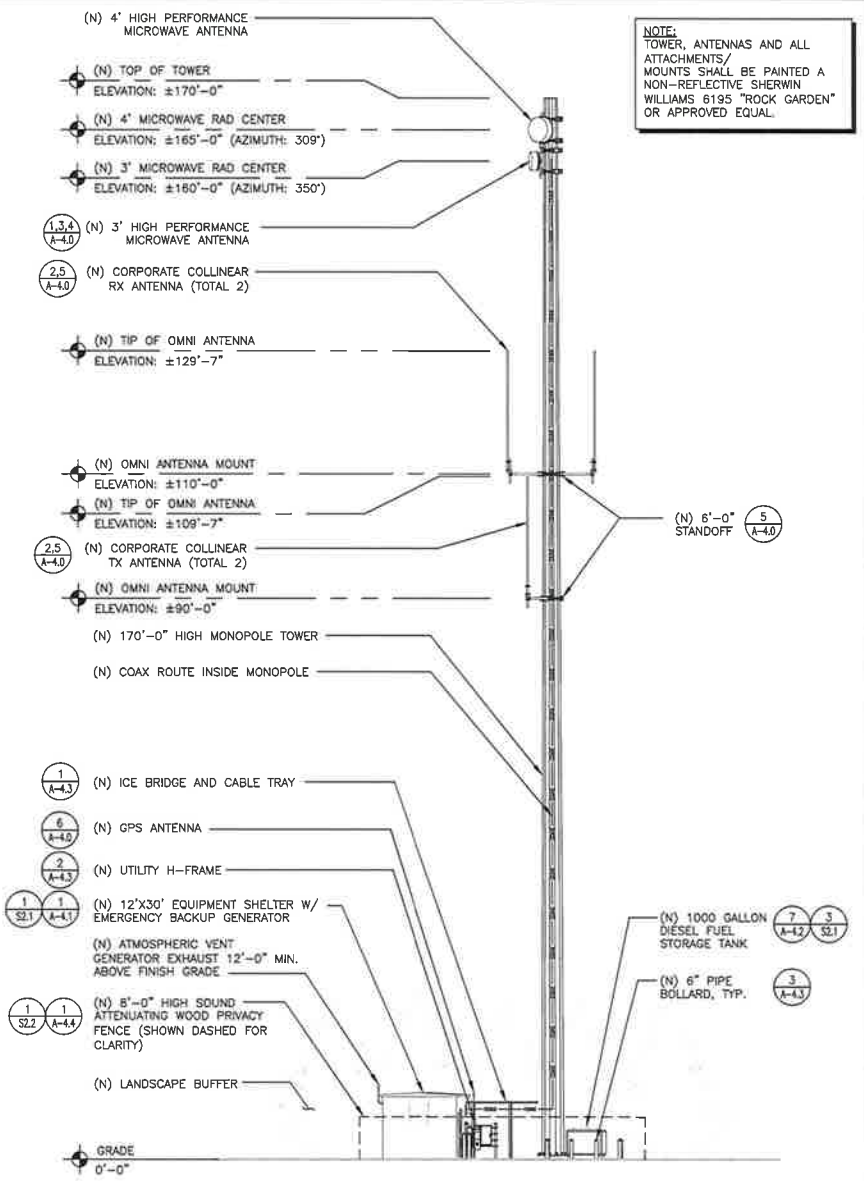
TIM BRADLEY IMAGING

NOTE:
TOWER, ANTENNAS AND ALL ATTACHMENTS/ MOUNTS SHALL BE PAINTED A NON-REFLECTIVE SHERWIN WILLIAMS 6195 "ROCK GARDEN" OR APPROVED EQUAL.



1 PROPOSED EAST ELEVATION
SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

NOTE:
TOWER, ANTENNAS AND ALL ATTACHMENTS/ MOUNTS SHALL BE PAINTED A NON-REFLECTIVE SHERWIN WILLIAMS 6195 "ROCK GARDEN" OR APPROVED EQUAL.



2 PROPOSED WEST ELEVATION
SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CELLIA PACIFIC COMPANY
5506 6TH AVE. S., SUITE 202
SEATTLE, WA 98108
PHONE: (206) 490-3826
FAX: (206) 490-3839
WWW.CELLIA.COM

CAMP+ ASSOCIATES
19401 40TH AVE. W., SUITE 304
LYNNWOOD, WA 98036
PHONE: (425) 740-6352
FAX: (425) 252-2660
WWW.CAMPASSOC.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AIO
APPROVED BY: PN

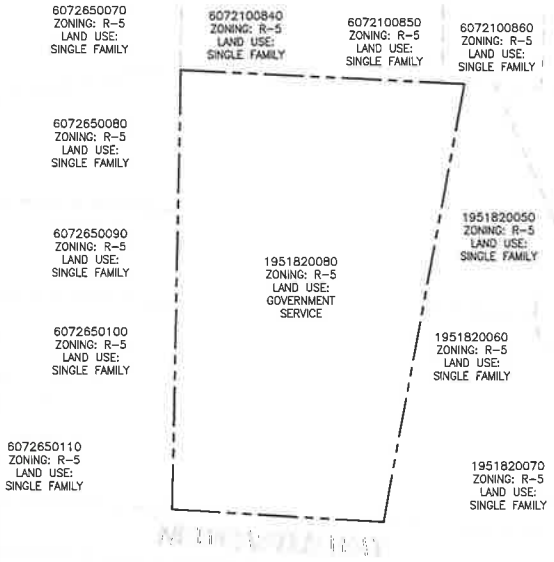
04/15/16	ISSUED FOR PRELIM. PERMIT
03/29/16	ISSUED FOR PRELIM. PERMIT
10/22/15	ISSUED FOR PRELIM. PERMIT
09/24/15	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

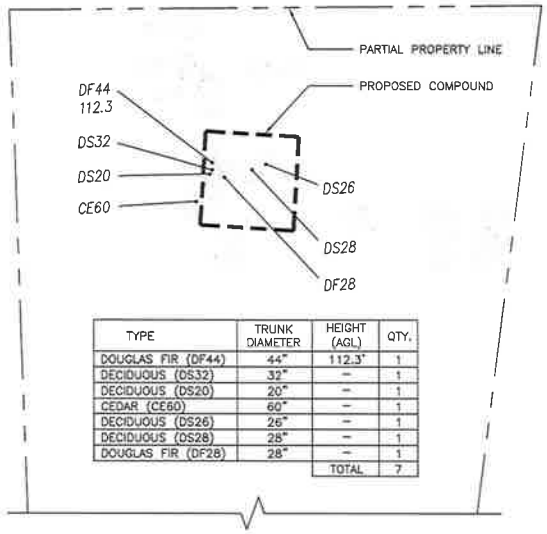
SHEET NAME
PROPOSED ELEVATIONS

SHEET NUMBER
A-3.1



ADJACENT PARCEL ZONING AND LAND USE

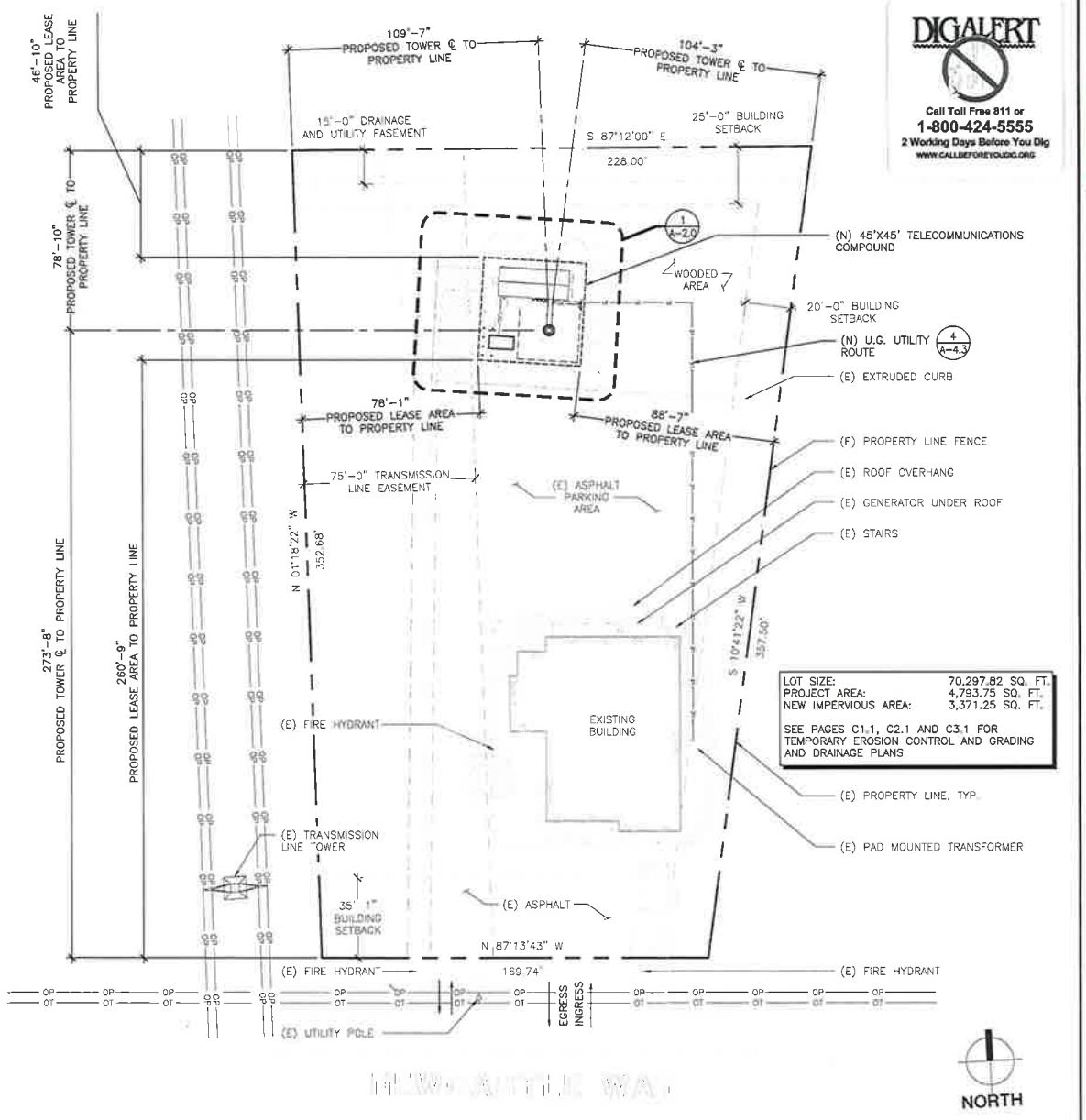
SCALE: NONE



TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
DOUGLAS FIR (DF44)	44"	112.3'	1
DECIDUOUS (DS32)	32"	–	1
DECIDUOUS (DS20)	20"	–	1
CEDAR (CE60)	60"	–	1
DECIDUOUS (DS26)	26"	–	1
DECIDUOUS (DS28)	28"	–	1
DOUGLAS FIR (DF28)	28"	–	1
		TOTAL	7

TREES TO BE REMOVED

SCALE: NONE



OVERALL PROPOSED SITE PLAN

SCALE: 1" = 25'-0" (22x34), 1" = 50'-0" (11x17)

0 25 50 75

DIGALERT
Call Toll Free 811 or
1-800-424-5555
2 Working Days Before You Dig
WWW.CALLBEFOREYOUDIG.ORG

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

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APPROVED BY: PN

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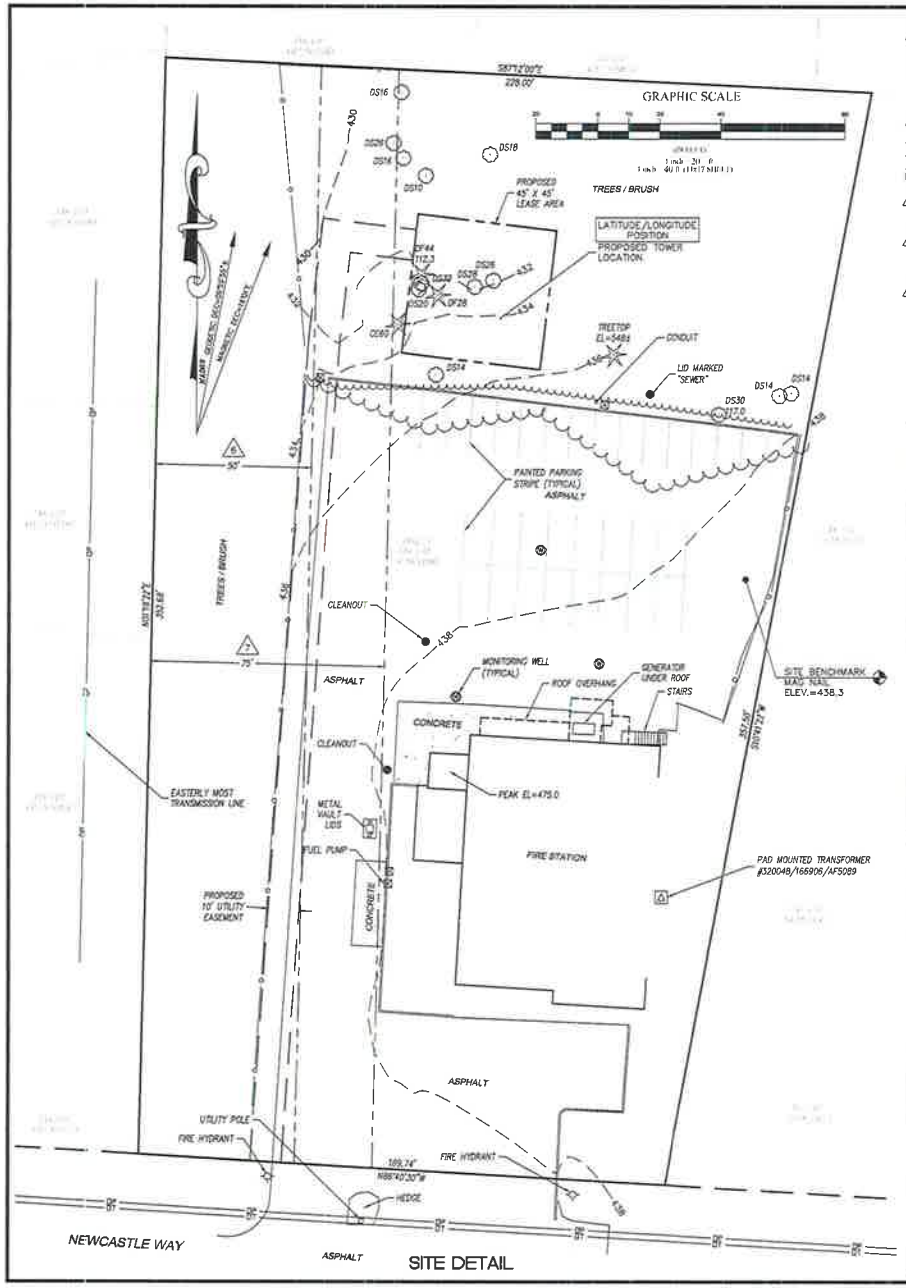
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
OVERALL PROPOSED SITE PLAN

SHEET NUMBER
A-1



LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO. 4, AS RECORDED IN VOLUME 96 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON.
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

EASEMENTS

CORRESPONDS WITH ITEM NO. SCHEDULE B' OF TITLE REPORT.

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN.

6. ELECTRIC TRANSMISSION LINE EASEMENT, RECORDING NO. 2342829, RECORDS OF KING COUNTY, SHOWN.

7. EASEMENT AND THE TERMS AND CONDITIONS FOR A ELECTRIC TRANSMISSION LINE AS PROVIDED IN CITY OF SEATTLE ORDINANCE NO. 59599, ORDINANCE DESCRIBES THE WEST 75 FEET OF THE SUBJECT PROPERTY, SHOWN.

8. MATTERS CONTAINED IN PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY - DOCUMENT CONTAINS INSUFFICIENT INFORMATION TO LOCATE HEREON, NOT SHOWN.

LATITUDE/LONGITUDE POSITION

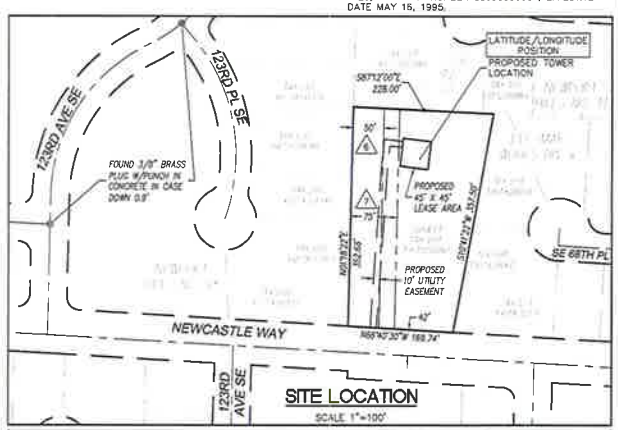
COORDINATE DATA AT PROPOSED TOWER LOCATION:
NAD 83
LAT - 47°32'30.58" N
LONG - 122°10'28.61" W
NAVD 88
ELEV.= 434.0 FEET

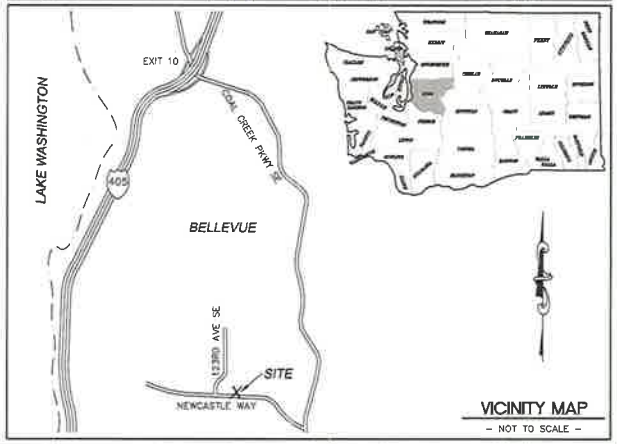
BENCHMARK IS "BLVU"
WSRN GPS CORS STATION.
ELEV = 51.2'

ELEVATION DERIVED USING GPS. ACCURACY MEETS OR EXCEEDS 1A STANDARDS AS DEFINED ON THE FAA ASAC INFORMATION SHEET 911.003.

NOTES

1) TITLE INFORMATION PER GUARANTEE NO. 20371668-410-T20, PROVIDED BY FIDELITY NATIONAL TITLE OF WASHINGTON, INC., DATED SEPTEMBER 29, 2015.
2) FIELD WORK CONDUCTED IN JULY, 2015.
3) BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE (NAD83).
4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
5) FEMA DESIGNATION: ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN), PANEL 666 OF 1725, FIRM MAP NUMBER 53033C0666F, EFFECTIVE DATE MAY 16, 1995.





LEGEND

- SUBJECT BOUNDARY LINE
- RIGHT-OF-WAY CENTERLINE
- RIGHT-OF-WAY LINE
- ADJACENT BOUNDARY LINE
- SECTIONAL BREAKDOWN LINE
- DP — OVERHEAD POWER LINE
- UP — BURIED POWER LINE
- G — BURIED GAS LINE
- OT — OVERHEAD TELEPHONE LINE
- UT — BURIED TELEPHONE LINE
- W — BURIED WATER LINE
- SS — BURIED SANITARY SEWER
- SD — BURIED STORM DRAIN
- DITCH LINE/FLOW LINE
- ROCK RETAINING WALL
- VEGETATION LINE
- O — CHAIN LINK FENCE
- X — WOOD FENCE
- X — BARBED WIRE/WIRE FENCE

TRANSFORMER	FIRE HYDRANT
LIGHT STANDARD	GATE VALVE
POWER VAULT	WATER METER
UTILITY BOX	FIRE STAND PIPE
UTILITY POLE	CATCH BASIN, TYPE I
POLE GUY WIRE	CATCH BASIN, TYPE II
GAS VALVE	SIGN
GAS METER	BOLLARD
TELEPHONE VAULT	MAIL BOX
TELEPHONE RISER	234.21 SPOT ELEVATION

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

TREE LEGEND

DECIDUOUS TREE
AL12 — TRUNK DIAMETER (IN)
TYPE

AL=ALDER
MP=MAPLE
DS=DECIDUOUS
MA=MADRONA
OK=OAK
CH=CHERRY

EVERGREEN TREE
DF18
195.2
HEIGHT AGL IF MEASURED

CE=CEDAR
DF=DOUGLAS FIR
HE=HEMLOCK
PI=PINE
EVG=EVERGREEN

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

SITE INFORMATION

TAX LOT NUMBER	1951820060
SITE ADDRESS	12412 NEWCASTLE WAY BELLEVUE, WA 98006
SITE CONTACT	-
PHONE NUMBER	-
ZONING	R5 (CITY OF BELLEVUE)
TOTAL LOT AREA	70,282± S.F.(1.61 AC.)
PROJECT AREA	2,025 S.F.

SURVEY REFERENCE

1. PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 96, PAGE 38, RECORDS OF KING COUNTY.
2. PLAT OF NEWPORT HILLS NO. 19, RECORDED IN VOLUME 78, PAGE 36, RECORDS OF KING COUNTY.

BOUNDARY DISCLAIMER

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

CAUTION!

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

1-800-424-5555

PUGET SOUND EMERGENCY RADIO NETWORK

PACIFIC CORPORATION

DUNCANSON
Company, Inc.
145 NW 125th Street, Suite 102
Seattle, Washington 98177
Phone 206.244.4141
Fax 206.244.4434

SITE
BELLEVUE STA. #9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
KING COUNTY

THIS DRAWING WAS CREATED FOR THE EXCLUSIVE USE OF THE CLIENT NAMED HEREON, AND IS NOT TO BE USED IN WHOLE OR IN PART WITHOUT WRITTEN AUTHORIZATION FROM SAID CLIENT.
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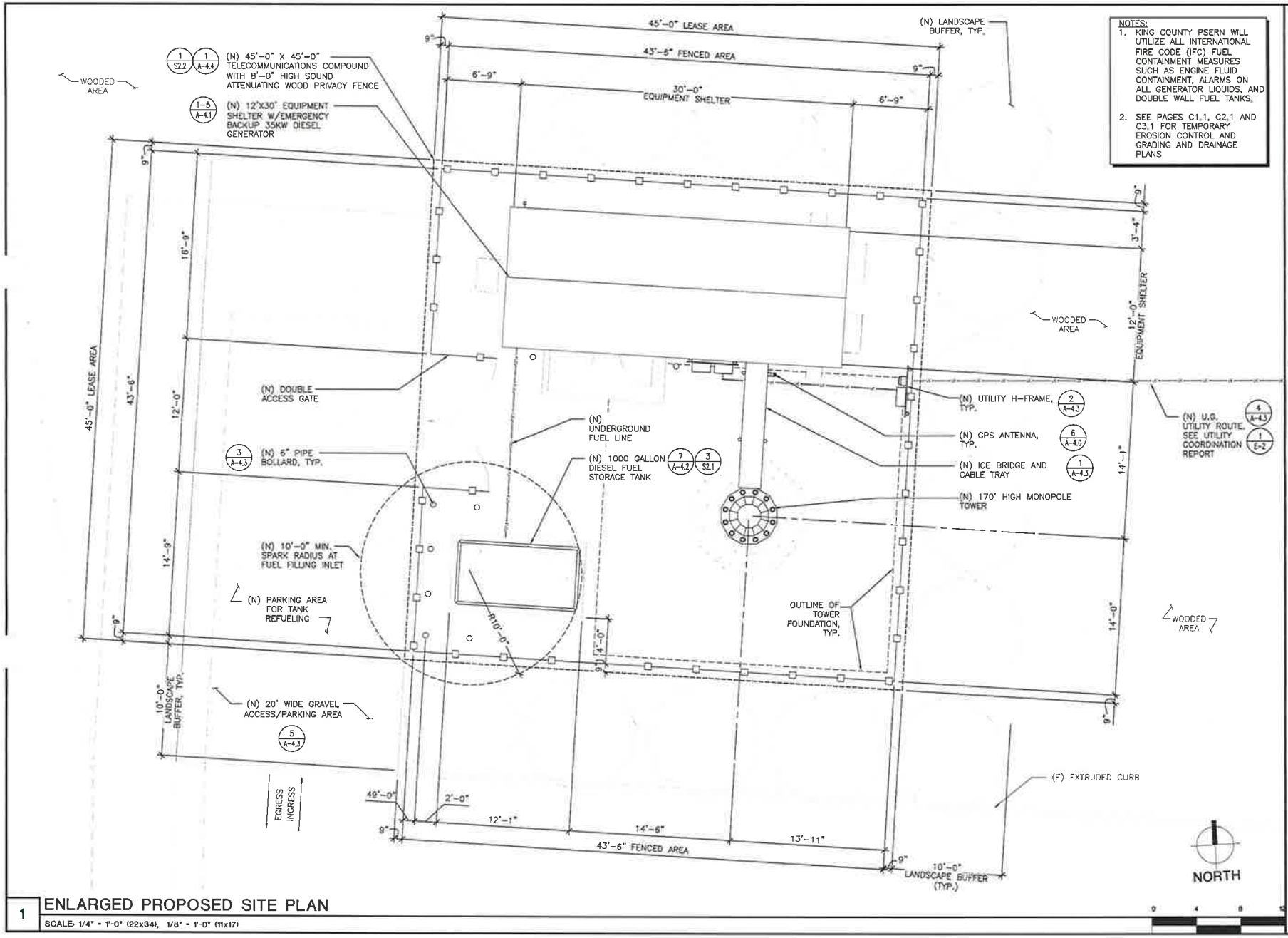
FLD. CREW:	CR/CT
FLD. BOOK:	370/63
DRAWN BY:	RLP
JOB #:	15385.05
DATE:	7/15/15

REVISIONS

DATE	DESCRIPTION	BY
3/30/16	REVISED LEASE AREA AND TOWER LOCATION	LAC
10/14/15	ADD NEW TITLE REPORT	JA
7/31/15	REVISED LEASE AREA AND TOWER LOCATION, ADDED EASEMENTS	LAC

SHEET TITLE
EXISTING SITE SURVEY
SEC 28, TWP 24 N, RNG 5 E, WM

SHEET NUMBER
SV1



NOTES:
1. KING COUNTY PSERN WILL UTILIZE ALL INTERNATIONAL FIRE CODE (IFC) FUEL CONTAINMENT MEASURES SUCH AS ENGINE FLUID CONTAINMENT, ALARMS ON ALL GENERATOR LIQUIDS, AND DOUBLE WALL FUEL TANKS.
2. SEE PAGES C1.1, C2.1 AND C3.1 FOR TEMPORARY EROSION CONTROL AND GRADING AND DRAINAGE PLANS

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

King County
PSERN
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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

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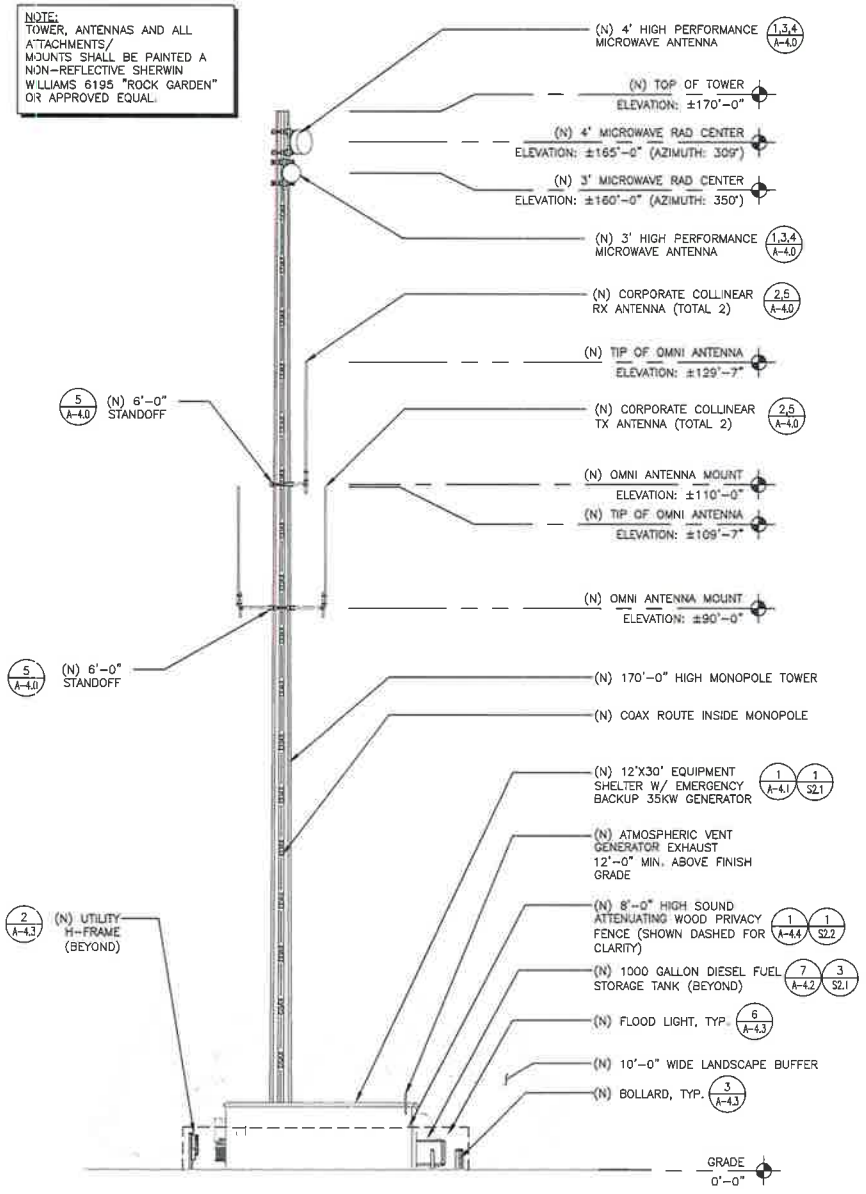
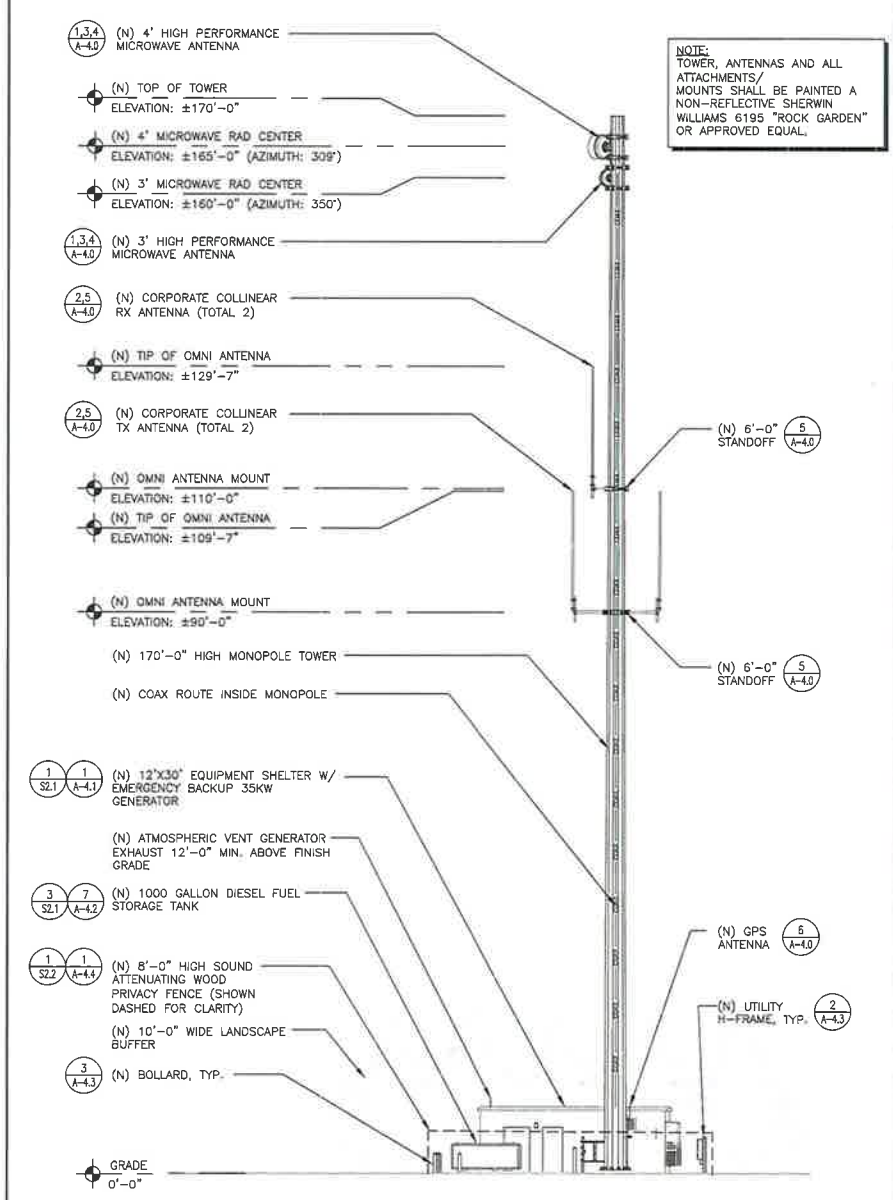
ENLARGED PROPOSED SITE PLAN

SHEET NUMBER
A-2.0



1 PROPOSED NORTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 PROPOSED SOUTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

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PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME

PROPOSED ELEVATIONS

SHEET NUMBER

A-3.0

City of Bellevue

Post Office Box 90012 ▪ Bellevue, Washington ▪ 98009 9012

Revised June 24, 2016

Sarah Telschow
5506 6th Avenue South #202
Seattle, WA 98108
STELSCHOW@ODELIA.COM

Letter sent via email

RE: Preapplication Meeting
Project Name: King County PSERN – Bellevue Station 9
File Number: 16-132550-DB
12412 Newcastle Way

Dear Ms. Telschow:

Thank you for meeting with City staff on June 9, 2016, to discuss your proposed project. In this letter, I have included the major comments made by the members of the City's preapplication conference team. The comments in this letter are based on a preliminary review of materials submitted and do not represent an exhaustive review of your proposed project. It is the applicant's responsibility to research appropriate code provisions relevant to this project. Whenever possible staff has attempted to cite the applicable codes associated with their comments on this project. The City may identify additional concerns as additional information is provided about your proposal.

The information contained in this letter is a general assessment of your proposal based on the information you provided. The information and direction conveyed here is applicable for six months or until the Codes, standards or policies of the City are amended whichever occurs first.

Any future application should clearly demonstrate in a written narrative and on the plans submitted, how you have addressed the applicable standards, guidelines, policies and other requirements outlined in this letter.

Based on the scope of the project you described during the preapplication conference the following permits have been identified as likely being required for this project. Please consult with the Permit Tech for permit types, fees, and average review times once you are ready to submit:

	PERMIT NAME:	NOTES:
Land Use:	Conditional Use (LB) CD permit	The LB process requires a public meeting and then public hearing at the end of the process. Your CD permit can be issued after the LB decision is final.
Clearing & Grading:	Clear&Grade (GD)	

Building:	**CD Permit**	
Utilities:	Storm Connection (UB)	
Fire:	Mechanical Permit	
Transportation:	ROW Use Permit	

Land Use Division, Development Services Department
Carol Hamlin, 425-452-2731; chamlin@bellevuewa.gov

	SITE SPECIFIC OVERVIEW	CITATION
REVIEW PROCESS	The proposed site is the location of the existing Fire Station #9 and zoned single-family (SF) residential, R-5. The SF zoning and proposed new monopole/pole height require the proposed facility to be reviewed and approval through the Conditional Use process. The Conditional Use review is a quasi-judicial process that includes public notice of the proposal and a public hearing. The decision is made by the Hearing Examiner, based on the Director's recommendation. A public meeting will be required early in the process. Anyone who submits written comments on the application may appeal the decision.	LUC 20.20.195.C.1.c
SEPA REVIEW	SEPA review is required. The application must include a completed SEPA checklist (signed), along with all information related to the environmental review.	WAC 197-11-800
LAND USE ZONE	Single Family R-5	Mapshot
LU APPROVALS/ SEPA	The SEPA review will be bundled with the Conditional Use decision. Notice of the application will be mailed to all property owners within 500 feet of the site and published in the Weekly Bulletin. The bulletin will also be mailed to all parties of record and the standard mailing list.	
NOISE	Provide information about the level of noise expected from this facility – in dBAs – to the adjacent properties. Provide this in a document from a noise specialist. Sheet S2.2 uses the heading "Noise Barrier." What exactly does that mean? How much dBA will the fence reduce the noise from the ground equipment?	BCC 9.18

PLAN NOTES	Please provide on Sheet A-3.1 and similar sheets: • The proposed diameter of the monopole (bottom, top). • Additional information about the dimensions of the antenna mount between heights 90 feet and 110 feet. Make a note that says, for example, collinear antennas 6' from pole, 10' height. Also, provide the diameter of the collinear antenna. • For the shelter at the ground level, please provide an enlarged detail and elevations (with dimensions). Will the shelter and any exposed equipment be painted to match the pole? Clarify color of the wood fence. If a solid fence, please make that note on the site plan. Provide an enlarged elevation detail that shows the height of the fence and the height of the shelter and any exposed equipment that it is screening. How much is the fence screening? Provide a perspective of this area so we can better understand the visual impact. Sheet E-2: Identify what the different line widths mean. Sheet A-1: Please indicate the code reference for setbacks as shown.	
REQUIREMENTS APPLICABLE TO COMMUNICATION BROADCAST AND RELAY TOWERS OTHER THAN WIRELESS COMMUNICATION FACILITIES	The LUC section referenced at right has the requirements for communication, broadcast and relay towers other than wireless communication facilities. A list of each requirement with a description of specifically how the application has addressed the requirement must be included in the CUP application.	LUC 20.20.195.E
LANDSCAPING	The submittal must include a landscape plan prepared by a licensed landscape architect. Landscaping is required at the base of the fence. The plant material must be mostly indigenous and include trees, shrubs and living groundcover. Please include irrigation for the plant material, as some wireless sites have dead plant material after a few years. If removing trees, provide a tree survey that shows the site still retains 15% of the diameter inches of significant trees.	LUC 20.20.520, .900

B. Transportation Department

Ryan Miller, 425-452-7915, rkmiller@bellevuewa.gov

1. The proposed mono pole and 360-square foot mechanical building is part of a larger emergency radio network that is being installed throughout the Puget Sound Region. The mechanical building will not only house vital radio equipment but a generator to keep the facility operating during a major emergency event. The proposed facility has been designed to operate un-manned and does not require any additional staff at the existing fire station or at the new mechanical building. Regular maintenance for the facility is planned and expected but only at a once a month frequency. Therefore the City does not anticipate any new p.m. peak hour trips. A traffic impact fee will not be assessed for the 360-square foot building. The current access to the fire station meets and exceeds all current transportation standard. No additional improvements or mitigation to the access will be required.

C. Utilities Department

Arturo Chi, 425-452-4119, achi@bellevuewa.gov

Water	Water is available to the site from an existing 12-inch Asphalt Concrete (AC) water main on SE 68th Place. It appears from the size and scale of the project that both domestic and fire requirements can be met by extending and/or connecting to the existing water main on SE 68th Place. The applicant will be required to apply for over-the-counter water service applications for any proposed water connections and/or services. Water meters are not allowed inside building structures and must be located in a location approved by the utility department.	BCC 24.02
Sewer	Sewer is available to the site from an existing 8-inch Asphalt Concrete (AC) sewer main on SE 68th Place. It appears that sewer requirements for this project can be met by extending and/or connecting to the existing sewer main. Commercial over-the-counter side sewer permit will be required to connect and/or re-connect the proposed development to any public sewer system. The applicant can apply for sewer connection permits when any other City of Bellevue permit is submitted.	BCC 24.04
Storm	A Storm Connection Permit (UB permit application) will be required for the design review, plan approval, and field inspection of any on-site stormwater management system. The Storm Connection Permit application must be handed in concurrently or prior to submittal of the clearing and grading permit. If the amount of new and/or replaced impervious surface is greater than 5,000 square feet then flow control and water quality will be required. The project site is within the Newport basin. The flowcharts (figure 2.2 and 2.3) in chapter 2 of the 2016 Surface Water Engineering Standards (SWES) can help determine all applicable storm requirements. The link to the current SWES is: http://www.bellevuewa.gov/pdf/Utilities/Surface_Water_Engineering_Standards_2016.pdf Storm drainage infrastructure must be designed by a Washington State professional civil engineer to the current Bellevue Utility Codes and Storm Drainage Engineering Standards.	BCC 24.06

General Comments:

Water

The Cascade Water Alliance (CWA) charge applies to any new services or upgrade in services. This charge is due upon application for meter installation. Credit will be given to existing meters demolished from the site. The charge is due for all domestic and irrigation services. Fire services are exempt. The following table lists the 2016 rates for this charge:

Meter Size	Charge
¾"	$6005.00
1"	$15,012.50
1.5"	$30,025.00
2"	$48,040.00
3"	$96,080.00
4"	$150,125.00
6"	$300,250.00
8"	$480,400.00

Water Capital Recovery Charge (CRC) applies. This charge will be paid by the property owner over ten years in the form of rate surcharge. The current rate for 2016 is $29.06 /SFE (single family equivalent) per month for ten years. Credit is given for previous development.

Water Direct Facilities Charges: Any future connection charges assessed to the property prior to utility construction will be due before permit issuance.

Sewer
Sewer Capital Recovery Charge (CRC) applies. This charge will be paid by the property owner over ten years in the form of rate surcharge at time of connection by a new single family home. The current rate for 2016 is $13.49 per month for ten years.

Sewer Direct Facilities Charges: Any future connection charges assessed to the property prior to utility construction will be due before permit issuance.

Storm
Storm Drainage Capital Recovery Charge (CRC) applies to any new added impervious area. The current 2016 charge is $5.55 per 2,000 square feet of impervious area for ten years.

Storm Drainage Direct Facilities Charges: Any future connection charges assessed to the property prior to utility construction will be due before permit issuance.

D. Clearing & Grading Division

Janney Gwo, 425-452-6190, jgwo@bellevuewa.gov

A Clearing and Grading Permit is required for this project per BCC 23.76.035. The permit application must be in accordance with the Clearing and Grading Code, as outlined in the submittal requirements and the Clearing and Grading Development Standards, which is available on the City of Bellevue website at: *http://www.bellevuewa.gov/clearing-grading-standards.htm*

CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (CSWPPP)	A CSWPPP is required for all clearing and grading permit applications. It must include a narrative, drawings, and a turbidity and pH monitoring plan. A simpler CSWPPP, consisting of a checklist (short form) and a site plan can be used for the sites with land disturbing activities totaling less than 7,000 sf and grading less than 100 cy.	Clearing and Grading Development Standards
EROSION AND SEDIMENTATION CONTROL - MINIMUM REQUIREMENT 2	Clearing and Grading and erosion and sedimentation control (ESC) drawings are required for this permit application.	BCC 23.76.090 and Clearing and Grading Development Standards

TREE PROTECTION	Significant trees that are scheduled for retention must be protected during construction.	Clearing & Grading Development Standards
CLEARING AND GRADING LIMITS	Clearing & Grading limits must be presented in the clearing & grading permit application. The limits should encompass the entire project (including utilities and frontage improvements).	Clearing & Grading Development Standards
CONSTRUCTION SEQUENCE	A construction sequence is required on the ESC drawing. The sequence should include all erosion control and construction milestones.	Clearing & Grading Development Standards
RAINY SEASON RESTRICTIONS	The project site is subject to rainy season restrictions. Specific approval from the Development Services Department is required to begin or continue clearing & grading activities during the rainy season (Oct.1 through Apr. 30).	BCC 23.76.093
TURBIDITY MONITORING PLAN	Turbidity monitoring and pH is required for this project. A monitoring plan must be submitted with the Clearing & Grading permit application.	Clearing and Grading Development Standards
POST CONSTRUCTION SOILS	For sites that must comply with Minimum Requirement #5, as set forth in BCC 24.06.065, all soils in disturbed areas that have not been covered by impervious surface, incorporated into a drainage facility or engineered as structural fill or slope must be amended with organic matter. Amended soils must meet the specifications of BMP T5.13, as a part of permanent site stabilization.	Clearing and Grading Development Standards

E. Fire Department

Sean Nichols, 425-452-2926, snichols@bellevuewa.gov

1. No comments.

F. Building Division

Violeta Tihova, 425-452-4259, vtihova@bellevuewa.gov

APPLICABLE CODES	The following are the current applicable codes: 2012 International Building Code (IBC) 2012 International Mechanical Code (IMC) 2012 Uniform Plumbing Code (UPC) 2008 National Electric Code (NEC) City of Bellevue Construction Codes, Title 23	**2015 editions** of the construction codes are **effective July 1, 2016**. Permit applications received after Thursday, June 30, 2016 must comply with the 2015 Washington State Building, Plumbing, Energy and Mechanical Codes as amended and adopted by the city of Bellevue.
PERMIT	Wireless Communication Facilities permit (CD) will be required. Building plan review will be required. Permit submittal requirements can be found at http://www.bellevuewa.gov/pdf/PCD/sr_wireless.pdf	City of Bellevue Construction Code 23.05.090 exempts from permit communication towers **owned by public utilities**. It

		appears that proposed tower will not fall under this exemption.
CODE ANALYSIS	**Building code data shall be provided on the architectural plans including:** • Building area • Occupancy • Type of construction	
ACCESSIBILITY	Utility buildings are exempt per IBC 1103.2.5.	
ENERGY	Unless the building falls under the exceptions per WSEC C101.5.2, a completed energy code worksheet for the building envelope needs to be submitted with the building permit.	WSEC 2012 Commercial Provisions
GEOTECH REPORT	A geotechnical report must be submitted with the building permit application.	IBC 1803
GENERATOR	NFPA 110 Section 7.2 requires EPS room to be separated by 2 hr construction. EPSS equipment is permitted to be install in the EPS room. No other equipment, except those serving the space, shall be permitted. NFPA 110 Section 6.1.3 requires ATS switch to be in a separate enclosure or compartment.	NFPA 110
STRUCTURAL ENGINEERING	Engineering calculations and Structural Plans for the tower, shelter and tank shall be submitted with the permit application. A WABO approved special inspection agency should be assigned to performed the required special inspections.	

Additional Comments

The information provided in this letter is an assessment of your proposal based on the information provided by you at our meeting. This information and direction is applicable for six months or until the Codes, standards or policies of the City are amended, whichever occurs first. Please be aware that this correspondence is not intended as a formal development review, but simply as informal feedback about potential development opportunities at the subject site.

Fees and permit application packets are available at the permit counter in the Permit Center on the main floor of City Hall or online at: *www.bellevuewa.gov*

Sincerely,

Carol Hamlin

Carol Hamlin
Senior Planner

Cc via email: City staff noted above

BACKGROUND INFORMATION

Property Owner:	Bellevue Fire Department		
Address:	766 Bellevue Way SE		
City/State/Zip:	Bellevue, WA 98004	Phone:	
Applicant:	King County Department of Information Technology		
Address:	401 5th Ave, 6th Floor		
City/State/Zip:	Seattle, WA 98104	Phone:	206.263.7846
Agent:	Odelia Pacific Corporation - Sarah Telschow		
Address:	1215 4th Ave Suite 1900		
City/State/Zip:	Seattle, WA 98161	Phone:	206.979.6268

Name of Proposed Project: King County PSERN - Bellevue Station #9

Location of Project:	Bellevue, Washington						
Address:	12412 Newcastle Way						
Quarter:	NE	Section:	28	Township:	24	Range:	5
Tax Parcel Number(s):	195182-0080						

Give an accurate, brief description of the proposal's scope and nature:

1. General description:

   The applicant, King County PSERN, proposes to construct a new emergency communications facility at 12412 Newcastle Way, Newcastle, Washington (Parcel Number 195182-0080). King County PSERN is proposing to construct a new 170' tower with associated equipment in support of upgrading the current system.

2. Acreage of site: *1.61 acres*

3. Number of dwelling units/buildings to be demolished: *None*

4. Number of dwelling units/buildings to be constructed: *None*

5. Square footage of buildings to be demolished: *None*

6. Square footage of buildings to be constructed: *312 square feet (total project area - 4,793.75 square feet).*

7. Quantity of earth movement (in cubic yards): *10 cubic yards of cut and 250 cubic yards of fill (260 cubic yards total).*

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion is unlikely. However, Best Management Practices (BMP's) for erosion control will be implemented during construction. *Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.*

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

King County PSERN is proposing approximately 2,925.00 square feet of new impervious surfaces. The percent of site to be covered with new impervious surfaces will be less than five percent (5%).

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

All standard erosion control methods will be utilized to reduce or control erosion, or other impacts to the earth. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

During construction, there will be very minor dust and emissions associated with construction machinery/vehicles. There are no significant emissions associated with project operation.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

King County PSERN and its agents are not aware of any off-site sources of emissions or odor that would affect this proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

All standard measures to reduce and/or control emissions during construction will be utilized. These measures may include the regular use of watering vehicles to attenuate dust particles on-site and proper maintenance of all vehicles to limit emissions. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

3. Water

a. Surface:

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The nearest surface water body is Lake Boren, which is over 3,000 feet from the site.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

This project will not require any work over, in, or adjacent to (within 200 feet) of any waters.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

This project will not fill and/or dredge material from surface water/wetlands.

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

This project will not require surface water withdrawals or diversions.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

This project does not lie within a 100-year floodplain. Please see the FEMA Map in the SEPA Exhibits for more detailed information.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

This proposal does not involve any discharges of waste materials to surface waters.

b. Ground:

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn and/or water discharged to the groundwater.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals ...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste materials will be discharged into the ground from septic tanks or other sources.

c. Water Runoff (including storm water):

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The project will not alter or impact the existing storm drainage system. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

This type project does not generate waste materials. Therefore, it is very unlikely that waste materials would enter the ground or surface waters, however all preventive measures will be taken. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

At this time, there are no proposed measures to reduce or control surface water, groundwater, and runoff. Please see the Storm Drainage Report and Sheet C-1.1, C-2.1, and C-3.1 for more detailed information.

4. Plants

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other
X evergreen tree: fir, cedar, pine, other
X shrubs
X grass
__ pasture
__ crop or grain
__ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__ water plants: water lily, eelgrass, milfoil, other
__ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Twenty-three trees will be removed. Please see Sheet A-1 and Arborist letter regarding tree removal for more detailed information.

c. List threatened or endangered species known to be on or near the site.

No threatened and/or endangered plant species are known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

A landscaping plan has been proposed for this site. A twenty-foot (20') landscape buffer to the north and east. Please see Sheet L-1 for more detailed information.

5. Animals

a. Underline any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:_____
mammals: deer, bear, elk, beaver, other:_____
fish: bass, salmon, trout, herring, shellfish, other:_____

b. List any threatened or endangered species known to be on or near the site.

No threatened and/or endangered animal species are known to be on or near the site.

c. Is the site part of a migration route? If so, explain.

King County PSERN and its agents are not aware of a migration route near the site.

d. Proposed measures to preserve or enhance wildlife, if any:

At this time, there are no proposed measures to preserve or enhance wildlife.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electric power will be utilized to operate the antennas and associated electrical equipment.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The subject proposal will not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

At this time, there are no energy conservation features included in the plans of this proposal.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No such hazards have been identified with other similar installations.

(1) Describe special emergency services that might be required.

No special emergency services will be required for this proposal.

(2) Proposed measures to reduce or control environmental health hazards, if any:

At this time, there have been no measures proposed to reduce or control environmental health hazards.

b. Noise

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment operation, other)?

There is not any existing noise in the area that would affect this project.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from site.

There will be minor short-term noise associated with the construction phase of the project. There will be no new significant noise associated with operation of the project.

(3) Proposed measures to reduce or control noise impacts, if any:

King County PSERN will comply with all state and local ordinances regarding noise.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The subject property is used by the Bellevue Fire Department Station #9. The adjacent properties accommodate residential uses and a Seattle City Light (SCL) electrical transmission easement.

b. Has the site been used for agriculture? If so, describe.

This property has not been used for agriculture.

c. Describe any structures on the site.

There is an existing Fire Station building.

d. Will any structures be demolished? If so, what?

No structures will be demolished.

e. What is the current zoning classification of the site?

The site is zoned R-5 by the City of Bellevue. Please see the Zoning Map in the SEPA Exhibits for more detailed information.

f. What is the current comprehensive plan designation of the site?

The City of Bellevue has deemed this area Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable to this project.

f. Has any part of the site been classified as an "environmentally critical" area? If so, specify.

King County PSERN and its agents are not aware of the subject area for the proposal being classified as "environmentally sensitive".

i. Approximately how many people would reside or work in the completed project?

The tower is unmanned. One (1) to two (2) employees are on-site for an average of four (4) hours of monthly maintenance checks. This check is typically for preventive maintenance purposes. In the event of a problem, a crew is dispatched to the site immediately.

j. Approximately how many people would the completed project displace?

This project will not displace any people.

k. Proposed measures to avoid or reduce displacement impacts, if any:

This project will not displace any people. Therefore, no measures are needed to avoid or reduce displacement impacts.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The tower and all proposed and future antenna/attachments shall be painted Sherwin Williams Rock Garden (SW6195) using a non-reflective finish. Please see the enclosed tower color sample for more detailed information. The equipment building and fencing will be painted to match the fire station. Please see the photo simulations for more detailed information.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No units will be provided by this project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No units will be eliminated by this project.

c. Proposed measures to reduce or control housing impacts, if any:

This project will not impact housing. Therefore, no measures are needed to reduce or control housing impacts.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The proposed tower will be one hundred seventy feet (170') in height.

b. What views in the immediate vicinity would be altered or obstructed?

The site will be visible. However, the proposed location of the facility will be screened from view by existing trees and proposed additional landscaping. The tower will not impede views of any significant viewscapes such as the lake, mountain views, and/or expansive views. Please see the photo simulations for more detailed information.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The tower and all proposed and future antenna/attachments shall be painted Sherwin Williams Rock Garden (SW6195) using a non-reflective finish. The equipment building and fencing will be painted to match the fire station. Additionally, existing and proposed landscaping will provide additional measures to reduce and/or control aesthetic impacts to neighbors.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Generally, this proposal will not produce any light and/or glare.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The proposed tower will not require Federal Aviation Administration (FAA) lighting and has been deemed by the FAA to not be an aviation safety hazard. Please see the submitted FAA determination.

c. What existing off-site sources of light or glare may affect your proposal?

There are no existing off-site sources of light or glare that will affect this proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

Generally, this proposal will not produce any light and/or glare impacts. Therefore, no measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

There is a trail to the east that is over 1,000 feet away and Hazelwood Park approximately 2,000 feet away.

b. Would the proposed project displace any existing recreational uses? If so, describe.

This project would not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

This project would not displace any existing recreational uses. Therefore, no measures are needed to reduce or control recreation opportunities.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

King County PSERN and its agents are not aware of any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the project. The Washington Information System for Architectural & Archaeological Records Data (WISAARD) was reviewed and no historic properties including properties listed on the Heritage Barn Register, Washington Heritage Register (State Register), and the National Register of Historic Places were noted near the subject property.

b. Generally, describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

King County PSERN and its agents are not aware of any landmarks, or evidence of historical, archaeological, scientific, or cultural importance to be on or next to the project.

c. Proposed measures to reduce or control impacts, if any:

King County PSERN's facility will not impact historical and/or cultural areas. Therefore, no additional measures are necessary.

14. Transportation

a. Identify public streets and highways serving the site, and describe the proposed access to the existing street system. Show on site plans, if any.

The project is located off Newcastle Way. (Please see Vicinity Map Exhibit.)

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Not applicable to this project.

c. How many parking spaces would the completed project have? How many would the project eliminate?

On-site parking has been provided.

c. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

This proposal will not require any new roads or streets.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

This is an unmanned facility and will not require the use of water, rail or air transportation.

d. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The facility will be unmanned. One (1) to two (2) maintenance visits per month is expected.

g. Proposed measures to reduce or control transportation impacts, if any.

There are no traffic impacts associated with these types of facilities as they are unmanned and require infrequent maintenance, therefore no measures are needed to reduce or control transportation impacts.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

This project will not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

This project will not result in an increased need for public services, therefore no measures are needed to reduce or control direct impacts on public services.

16. Utilities

a. Underline utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in immediate vicinity which might be needed.

Telephone service will be provided by the local telephone company. Electrical power will be provided by the local power provider. Water, sewer and natural gas are not required for this project.

Signature

The above answers are true to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Sarah Telschow, AICP

Digitally signed by Sarah Telschow, AICP
DN: cn=Sarah Telschow, AICP, o=Odelia Pacific Corporation, ou, email=stelschow@odelia.com, c=US
Date: 2017.02.10 11:48:19 -08'00'

Signature

02/10/17

Date

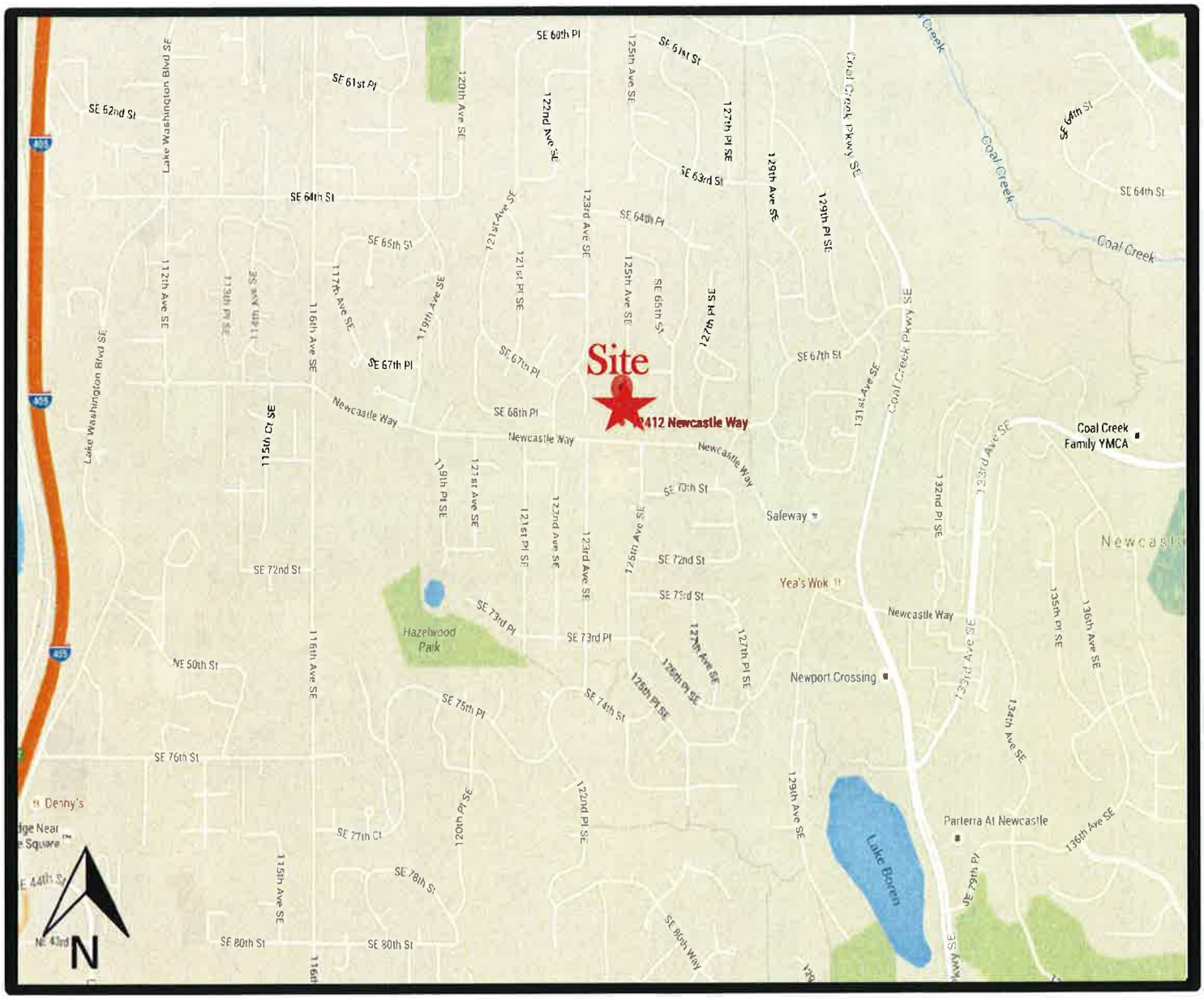
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e) Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	
Multi-Family Unit in Large Building	0		33	357	766	
Multi-Family Unit in Small Building	0		54	681	766	
Mobile Home	0		41	475	709	
Education		0.0	39	646	361	
Food Sales		0.0	39	1,541	282	
Food Service		0.0	39	1,994	561	
Health Care Inpatient		0.0	39	1,938	582	
Health Care Outpatient		0.0	39	737	571	
Lodging		0.0	39	777	117	
Retail (Other Than Mall)		0.0	39	577	247	
Office		0.0	39	723	588	
Public Assembly		0.0	39	733	150	
Public Order and Safety		0.0	39	899	374	
Religious Worship		0.0	39	339	129	
Service		0.0	39	599	266	
Warehouse and Storage		0.0	39	352	181	
Other		4.8	39	355	0	
Vacant		0.0	39	162	47	
Pavement		1.00				

VACINITY MAP

King County PSERN - Bellevue Station #9

12412 Newcastle Way Bellevue, WA 98006

Parcel No. 1951820080



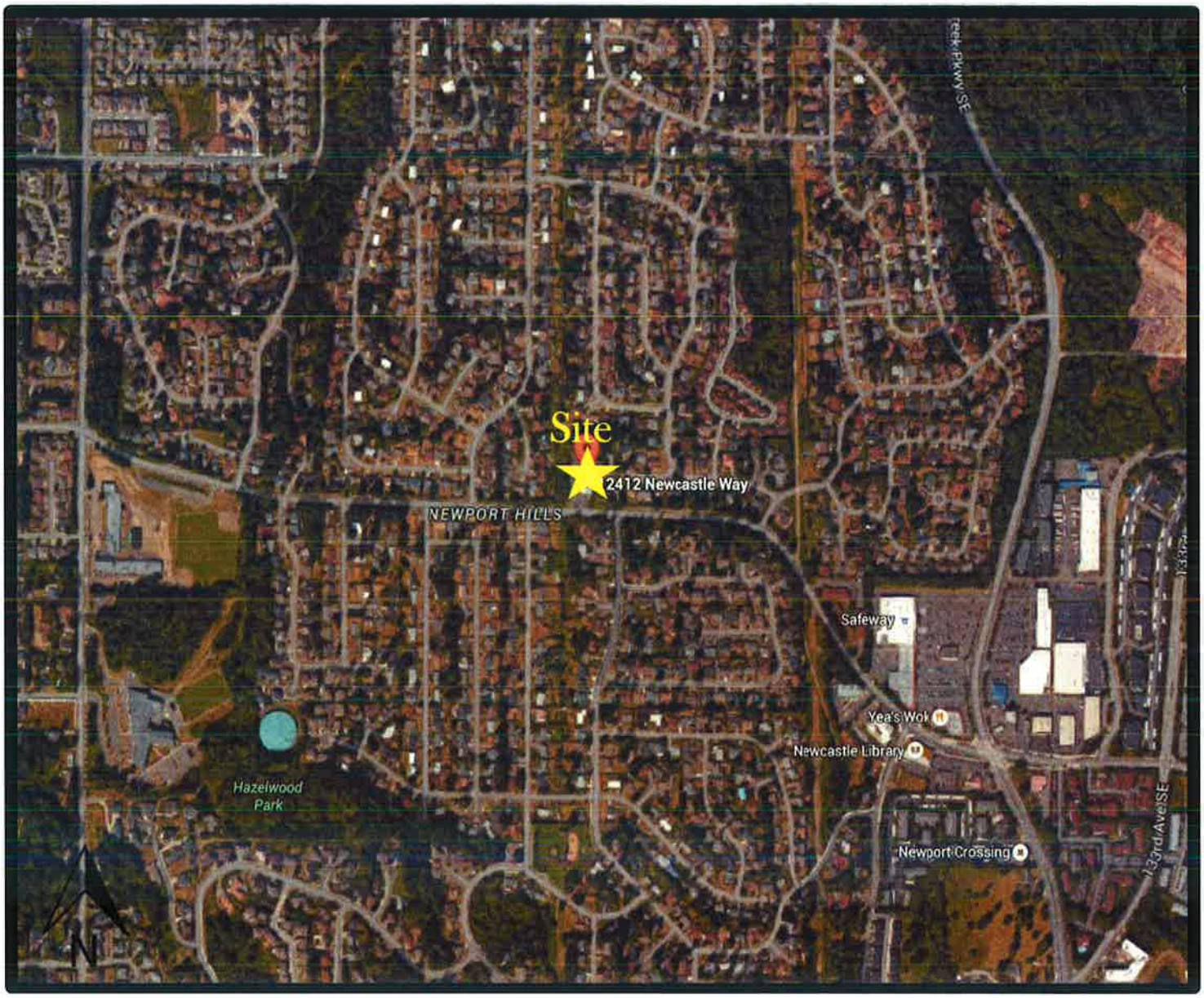
King County PSERN
Bellevue Station #9
SEPA Checklist Exhibit

AERIAL MAP

King County PSERN - Bellevue Station #9

12412 Newcastle Way Bellevue, WA 98006

Parcel No. 1951820080

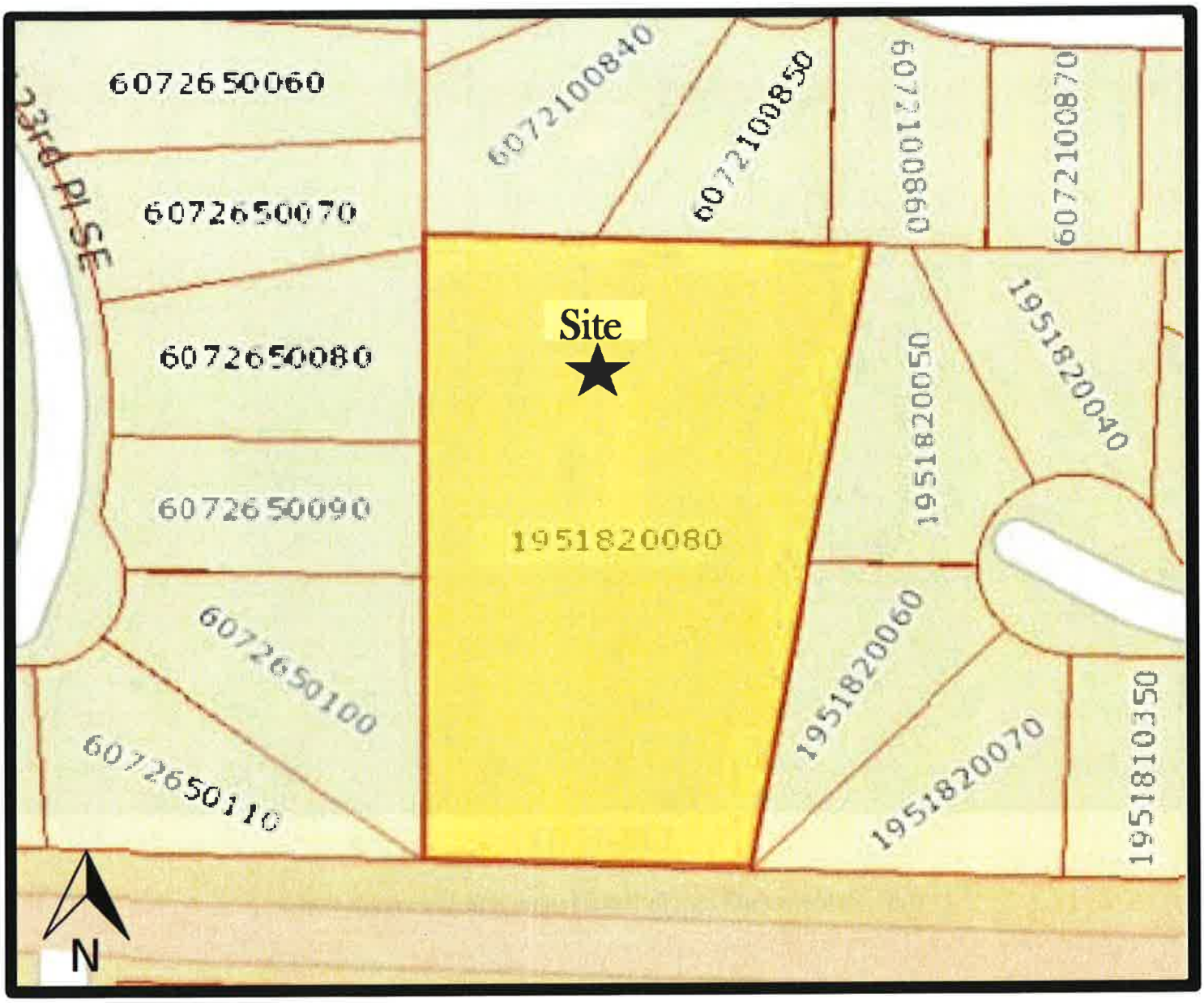


PARCEL MAP

King County PSERN - Bellevue Station #9

12412 Newcastle Way Bellevue, WA 98006

Parcel No. 1951820080

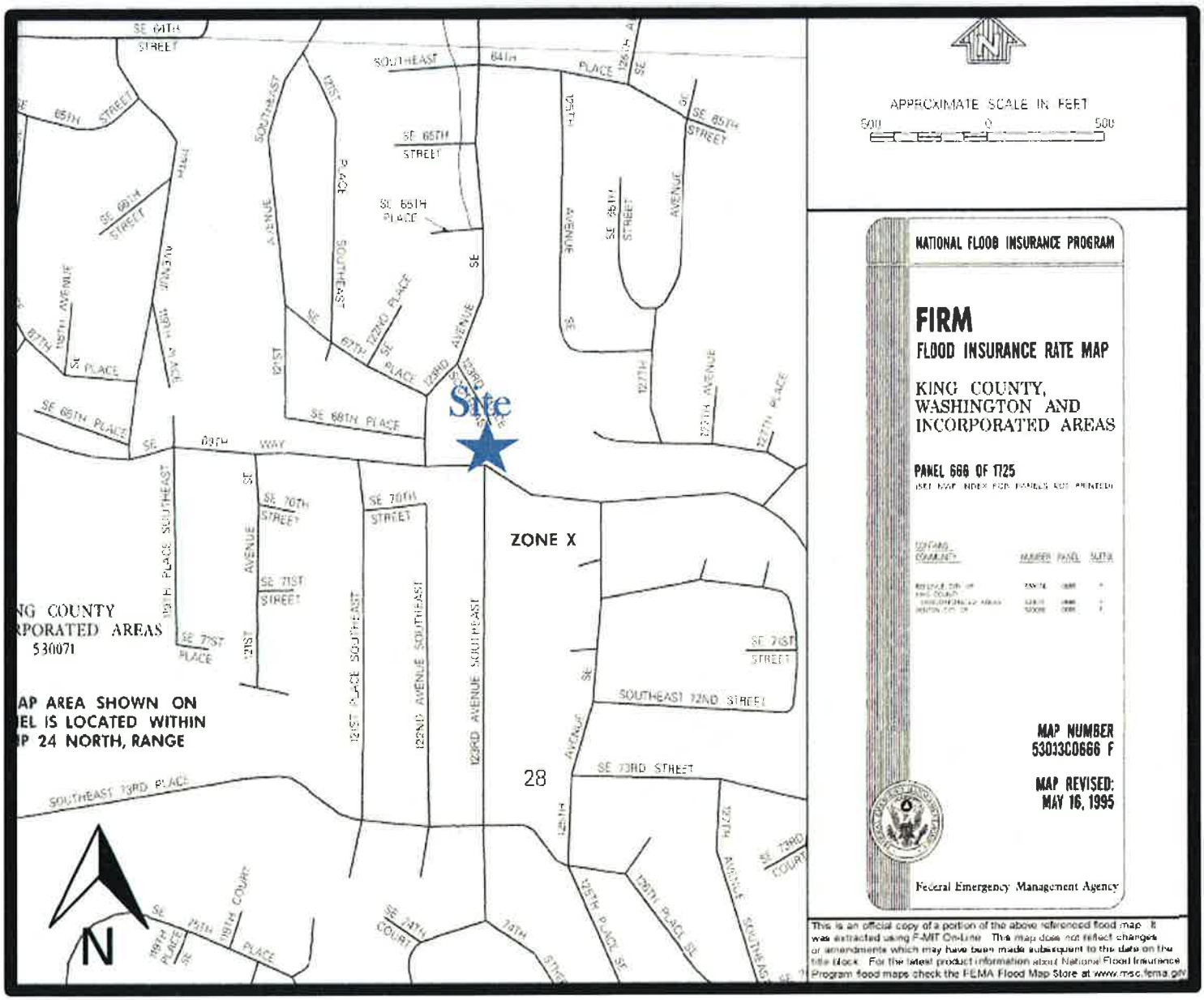


SOIL MAP

LEGEND

AgC – Alderwood Gravelly Sand Loam, 8 to 15 percent slopes

FEMA MAP



LEGEND

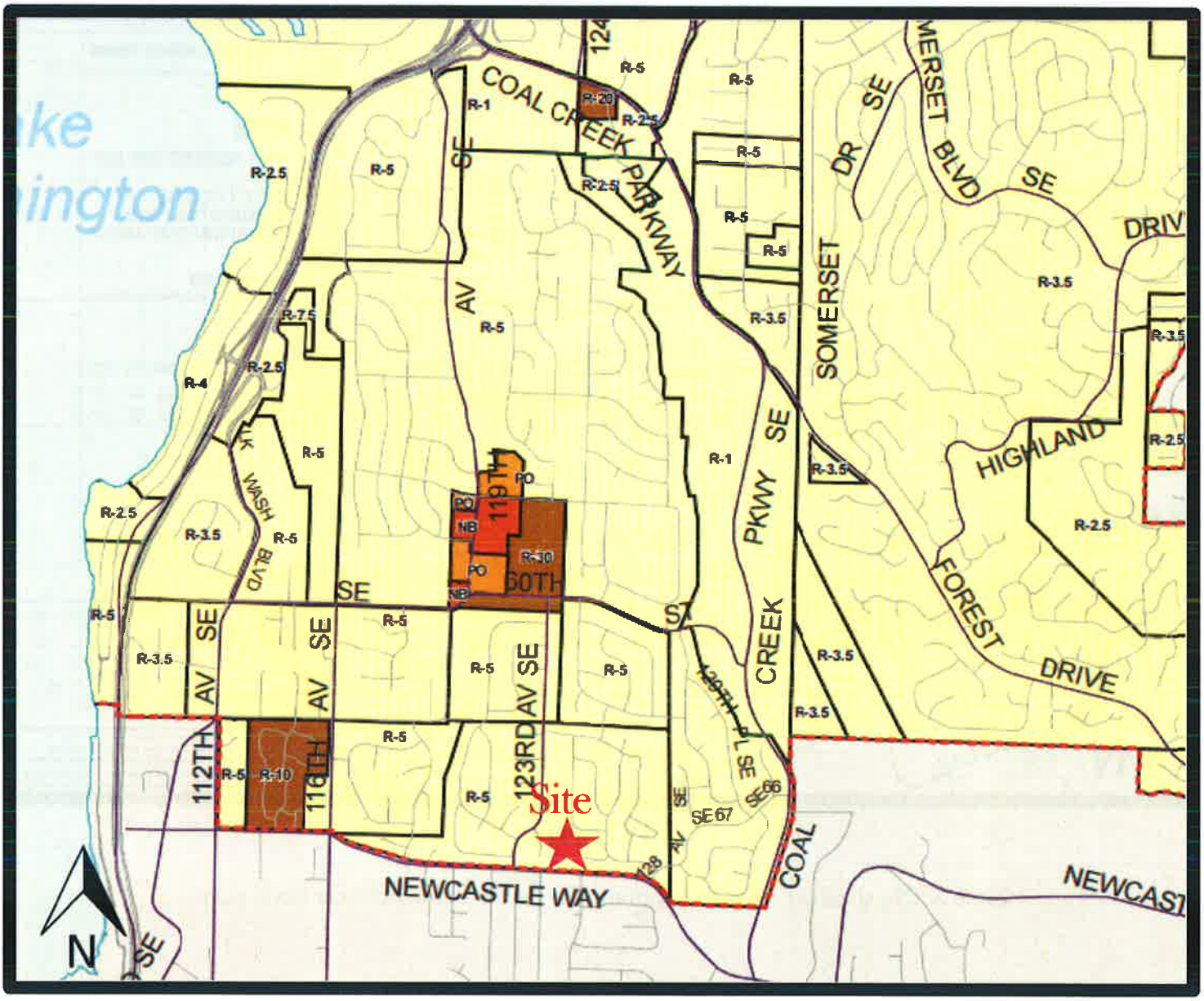
Zone X (No shading) - Areas determined to be out of the 500-year flood plain

ZONING MAP

King County PSERN - Bellevue Station #9

12412 Newcastle Way Bellevue, WA 98006

Parcel No. 1951820080



LEGEND

R-5 Single-Family Residential

Andrew H. Thatcher
www.rfthatcher.com

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

Site Address:
12412 Newcastle Way
Bellevue, WA 98006

Site Name:
Puget Sound Emergency Radio Network
Bellevue Station 9

Prepared for:
Odelia Pacific Corp.

February 2, 2017

Prepared By:
Andrew H. Thatcher, MSHP, CHP

Andrew H. Thatcher
www.rfthatcher.com

Introduction

This report details the results of the ground level analysis of the emissions created by the antennas located on a Puget Sound Emergency Radio Network (PSERN) Bellevue Station 9 site at 12412 Newcastle Way Bellevue WA 98006. In addition to the contributions from the proposed PSERN antennas, the analysis will include the contributions from a Sprint base station located on a nearby Seattle City Light transmission and a T-Mobile base station located about 660' away on Newcastle Way.

Summary of Findings

Based on a calculation specified by the Federal Communication Commission, the maximum level of public exposure to RF signal from the proposed antennas will be a fraction of FCC exposure limits. Specifically, the maximum ground level predicted exposure is 0.023 mW/cm² or 2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123 Ave SE and Newcastle Way. The maximum contribution from the proposed PSERN site is 0.0027 mW/cm².

Technical Data

This report is based on engineering data for the project provided by S. Telschow of Odelia Pacific Corp. No other RF transmitting facility is within 2,000 feet of the proposed facility. The proposed facility consists of a RFI Wireless CC807 series antennas transmitting at 90' in height and a pair of microwave transmitters transmitting in different directions at heights of 165' and 160'. The antennas are the Commscope VHLP3-11W-6WH/A (160') and the Commscope HPX4-107-P3A/B at 165'. Note that the input power used for the RFI antenna was the 500 W maximum input power recommended by the manufacturer with a coax line loss of 1.7 dB included. The input power for the microwave antennas was assumed to be 1 W with the respective gains included in the EIRP calculations.

Sprint data for their Clearwire site near 12412 Newcastle Way on the Seattle City Light was provided by S. Gerdts, RF engineer for Sprint on 2/2/2017. The existing antenna is a Kathrein KAT87DEGXXPOL and operates at 2600 MHz. Data for this older antenna is no longer available so an antenna with similar propagation characteristics was selected (Commscope DBXLH-8585B-VTM). The T-Mobile antenna is located at the corner of 123rd Ave SE and Newcastle Way. T-Mobile data was provided by F. Morton, RF Engineer for T-Mobile on 2/1/2017. The T-Mobile antenna used is a TMBXX-6516-R2M and operates at the 2100 MHz and 1900 MHz frequencies. Details on the power levels used and antenna height is provided in Table 1.

Basis of Calculations

Equation 6 of OET Bulletin 65[1] is used as the basis for the calculations as it considers a truly upper limit prediction of power density in an outdoor environment in which 100% of incoming

[1] Federal Communications Commission Office of Engineering and Technology. Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. OET Bulletin 65. 1997.

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radiation is assumed to reflect off a ground surface, resulting in a doubling of the predicted field strength and a four fold increase in power density. The signal levels inside buildings will be substantially lower than those calculated using the FCC model because of the substantial absorption of RF energy by building materials.

The calculation used the formula from OET Bulletin 65:

$$S = [EIRP] / [\pi \bullet D^2]$$

WHERE:
S = Power density (mW/cm²)
EIRP = Effective isotropic radiated power (mW).
D = Hypotenuse distance (cm)

The EIRP varies with direction with respect to the main beam due to the antenna beam pattern. For the calculations presented here, the beam pattern was obtained from the manufacturer of the antenna. In instances where the exact radiation pattern envelope was not available, professional judgment was used and a suitable replacement antenna's characteristics were substituted.

Ground Level Exposures

Table 1 shows the calculated Maximum Permissible Exposure (MPE) at 6' above ground level assuming all antennas operating at 100% and complete ground reflection. Note that only a single antenna from the proposed PSERN site can contribute to exposure at a given location and, as noted in the table below, the contribution from a microwave dish to a person at ground level is very low. The predicted maximum exposure is 0.021 mW/cm² or 2.3% of the FCC general public exposure limit. This location is about 60' away from the existing T-Mobile at the corner of 123rd Ave SE and Newcastle Way as the signal from the T-Mobile site dominates the background for the area. The maximum contribution from the PSERN antennas is 0.0027 mW/cm² approximately 60' from the proposed tower. Table 1 also provides the combined input power for each frequency band.

Table 1: Calculated Ground Level Power Density

Site Name:	PSERN Bellevue Station					
Location	Azimuth ~350 degrees					
Carrier Type	Worst Case ERP (watts)	Worst Case ERP (dBm)	Antenna Height (ft)	Maximum outdoor exposure (with ground reflection) (mW/cm²)	% of Standard	General Population Exposure Limit (mW/cm²)
RFI 800 MHz Collinear Ant	2048	63.11	90	2.45E-03	0.46%	0.533
Commscope VHLP3-11W-6WH/A	1221	60.87	160	4.65E-07	0.00%	1.000
Sprint 2600 MHz	604	57.81	108	9.11E-05	0.01%	1.000
T-Mobile 2100 MHz	3666	65.64	50	1.23E-02	1.23%	1.000
T-Mobile 1900 MHz	3666	65.64	50	5.76E-03	0.58%	1.000
			Total	2.06E-02	**2.28%**	

Discussion

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

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

For further information The Federal Communications Commission (FCC) maintains a World Wide Web site at http://www.fcc.gov. A general information sheet about possible health and safety issues regarding radiofrequency energy is at: http://www.fcc.gov/oet/rfsafety/cellpcs.html.

Conclusions/Recommendations

The maximum ground level predicted exposure is 0.023 mW/cm² or 2.3% of the FCC general public exposure limit at a location ~60 feet (horizontally) from the T-Mobile base station located on a utility pole at the corner of 123 Ave SE and Newcastle Way. The maximum contribution from the proposed PSERN site is 0.0027 mW/cm².

Certification

I hereby certify the following:

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

Regards,

Andrew H. Thatcher, MSHP, CHP

valmont
STRUCTURES

February 6, 2017

City of Bellevue
450 110th Ave. NE
P.O. Box 90012
Bellevue, WA 98009

Subject: **170-ft Monopole - Likelihood of Catching Fire**
Site Name: Bellevue Station, WA
Valmont Order No.: 324543

The purpose of this letter is to dispell any concerns that the local jurisdiction and/or the public may have about the tapered steel monopole captioned in the subject line catching fire.

The MSDS for the steel used in the fabrication of our monopoles lists the flash point as N/A, the auto ignition temperature as N/A, and the upper & lower flammable limits in air as N/A; also that there are no fire and/or explosion hazards. Therefore the steel monopole, with steel having a melting point of 2,750° F, does not have a flash point temperature that would cause it to ignite.

The MSDS for zinc, that is used to galvanize our steel monopoles lists the melting point of zinc at 787° F and states that there is no fire hazard for solid metal.

Due to the non-flammability of the steel and zinc, the monopole itself presents no risk of catching fire under normal operating circumstances.

We hope these comments address the issues that you might encounter relative to the flammability of our monopole structures. If you have additional questions or comments please call me at (503)-589-6626.

Sincerely,

Nathan Ross, EIT
Associate Engineer

FEB 06 2017

JEFFREY E. GRASSMAN
STATE OF WASHINGTON
33983
REGISTERED
PROFESSIONAL ENGINEER

Report

Swedish Council for
Working Life and
Social Research

Research during the last ten years

RADIOFREQUENCY ELECTROMAGNETIC FIELDS

– Risk of disease and ill health

From public meeting 11/10/16

from public meeting in Ne

Executive Summary

The focus of this report is electromagnetic fields of the type that occur in connection with mobile telephony, so called radio frequency (RF) fields and the possibility that exposure to such fields poses a risk of disease or ill health. The purpose is to describe what was known ten years ago, what we have learned during the past decade, and where we stand today.

TEN YEARS AGO

The mechanism of interaction between RF fields and the human body was established long ago and is increased temperature of exposed tissue (compare microwave ovens). Methods for measurements of the fields in the air were developed early but the data on distribution of the absorbed energy in the human body was still restricted. Data regarding sources and levels of exposure to the population was limited because systematic measurements had not been conducted. A considerable number of provocation studies on exposure to fields of lower frequencies (related to electric power and computer screens) had already been conducted and had not found any evidence of an association to symptoms (headache, vertigo, dizziness, concentration difficulties, insomnia) but the corresponding information about RF fields and occurrence of symptoms was scarce. Few and methodologically limited epidemiological studies had been conducted on RF field exposure and cancer.

WHAT WAS LEARNED DURING THE PAST TEN YEARS

Extensive research on various aspects of RF fields has been conducted during the last ten years and the knowledge database has increased considerably. Simulation models have improved our knowledge about how the fields and the energy are distributed in the body. Mobile, so called, exposimeters have been developed for use in epidemiological studies. Many more measurements have been conducted to increase our knowledge about sources and level of exposure to the population.

More than 15 provocation studies (single or double blind) have been conducted on symptoms attributed to exposure to RF fields. These studies have not been able to demonstrate that people experience symptoms or sensations more often when the fields are turned on than when they are turned off. One longitudinal study has looked at frequency of symptoms in relation to environmental exposure and this study found no association between exposure and symptoms.

A considerable number of studies on cancer, and in particular brain tumor, were presented. As a consequence there exist now very useful data including methodological results that can be used in the interpretation of this research. With a small number of exceptions the available results are all negative and taken together with new methodological understandings the overall interpretation is that these do not provide support for an association between mobile telephony and brain tumor risk. In addition, national cancer statistics are very useful sources of information because mobile phone usage has increased so quickly. Had mobile phone use and brain cancer risk been associated it would have been visible as an increasing trend in national cancer statistics. But brain cancer rates are not increasing.

WHERE WE STAND TODAY

We now know much more about measurements and absorption of RF fields and also about sources of exposure to the population and levels of exposure. A considerable number of provocation studies on RF exposure and

symptoms have been unable to show any association. Overall, the data on brain tumor and mobile telephony do not support an effect of mobile phone use on tumor risk, in particular when taken together with national cancer trend statistics throughout the world.

Research on mobile telephony and health started without a biologically or epidemiologically based hypothesis about possible health risks. Instead the inducement was an unspecific concern related to a new and rapidly spreading technology. Extensive research for more than a decade has not detected anything new regarding interaction mechanisms between radiofrequency fields and the human body and has found no evidence for health risks below current exposure guidelines. While absolute certainty can never be achieved, nothing has appeared to suggest that the since long established interaction mechanism of heating would not suffice as basis for health protection.

Health Protection Agency

Health Effects from Radiofrequency Electromagnetic Fields

Report of the independent Advisory Group on Non-ionising Radiation

2.1.4.1 Far-field and near-field characteristics

Roughly speaking, distances within about one-sixth of a wavelength ($\lambda/2\pi$) from the source define the reactive near-field region, while distances greater than $2D^2/\lambda$ (where D is the largest dimension of the antenna) define the far-field region. Since D is usually comparable in size to λ (or larger), $2D^2/\lambda$ is roughly comparable to λ (or greater). Distances between $\lambda/2\pi$ and $2\ D^2/\lambda$ form a transition region in which radiative field components dominate, but the angular distribution of radiation about the source changes with distance. This is known as the radiating near-field region. Since wavelength is inversely proportional to frequency, it varies considerably, from 10 km to a few millimetres over the range of radiofrequencies considered here (100 kHz – 300 GHz). Antennas with a high degree of gain, eg dish antennas, have large radiating near-field regions around them. For frequencies above 300 MHz (or 1 m wavelength) human exposure more usually occurs in the far-field region. A near-field exposure occurs when approaching very close to the source – in particular, for example, with mobile phones and body-mounted devices. This is not the case at lower frequencies.

As already noted, the power density of an electromagnetic wave, S, is equal to the product of the electric and magnetic fields, $S = E\,H$. Since $E = 377H$ beyond the reactive near-field region (assuming the quantities are all expressed in SI units), this becomes:

$$S = E^2/377 = 377H^2 \quad (\mathrm{W\,m^{-2}})$$

Hence $E = 19\sqrt{S}$ $(\mathrm{V\,m^{-1}})$ and $H = 0.052\sqrt{S}$ $(\mathrm{A\,m^{-1}})$

Table 2.1 gives the far-field values of electric field strength and magnetic field strength for power densities from 0.1 to 100 $\mathrm{W\,m^{-2}}$.

The field structure in the reactive near-field region is more complex than that in the far-field region. Generally, the electric and magnetic fields are not at right angles to each other and they do not reach their largest values at the same points in space, ie they are out of phase. Hence, the simple relation between S, E and H given in Table 2.1 is not obeyed and calculations of energy absorption in tissue in this region are more complicated than in the far-field region.

TABLE 2.1 Examples of far-field (plane-wave) relationships

Power density ($\mathrm{W\,m^{-2}}$)	Electric field strength ($\mathrm{V\,m^{-1}}$)	Magnetic field strength ($\mathrm{A\,m^{-1}}$)
0.1	6.1	0.016
1.0	20	0.052
10	61	0.16
50	140	0.36
100	200	0.51

2.1.5 Exposure to RF fields

People are exposed both at home and at work to electric and magnetic fields arising from a wide range of sources that use RF electrical energy. It should be noted that even at the highest frequency of the range, 300 GHz, the energy quantum, $h\,f$, where h is Planck's constant and f is frequency, is still around three orders of magnitude too small to cause ionisation in matter. This region of the spectrum, together with optical frequencies, is therefore referred to as non-ionising.

In contrast to ionising and ultraviolet radiations, where natural sources contribute the greater proportion of the exposure to the population, man-made sources tend to dominate exposure to time-varying electromagnetic fields over the spectrum shown in Figure 2.1. Over parts of the frequency spectrum, such as those used for electrical power and broadcasting, man-made fields are many thousands of times greater than natural fields arising from either the sun or the Earth (see Section 2.4.1). In recent decades the use of electrical energy has increased substantially for telecommunications purposes and it is clear that exposure of the population in general has increased.

Everyone is exposed continually to low level RF fields from transmitters used for broadcast television and radio, and for mobile communications. Many individuals will also be exposed to low level fields from microwave communications links, radar, and from domestic products, such as microwave ovens, televisions and display screen equipment. Higher exposures can arise for short periods when people are very close to sources such as mobile phone handsets, portable radio antennas and RF security equipment. Some of the sources of electromagnetic fields and the estimated levels to which people are exposed, both at work and elsewhere, are shown in Table 2.2, and details are given in Section 2.4.

Depending on the frequency, output power and the distance from the RF source, direct or indirect coupling into the human body can occur. The result of this coupling can be the induction of fields and, consequently, currents inside the body, or a rise in local or whole-body temperature. A more detailed explanation of the interaction between RF fields and the human body is given in Section 2.2.

For exposure assessment purposes, both physical quantities of the electromagnetic fields (E, H and S) and dosimetric quantities (induced current density or rise in temperature, see Section 2.2.1) are considered. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) provides basic restriction and reference level values based on both physical and dosimetric quantities (see Appendix B). ICNIRP recommends that these restrictions should not be exceeded if the population's health is to be protected from non-ionising radiation.

2.1.6 Measurement of electromagnetic fields

As mentioned earlier, RF sources give rise to electric and magnetic fields and these fields in turn can induce currents or raise temperature inside the human body. It is therefore important to assess the strength of the fields in order to protect the body from harmful effects. The physical quantities (E and H, and to some extent the induced current) can be directly measured outside the body, while the dosimetric quantities (induced current density or rise in temperature) are mainly assessed by indirect means inside the body. Here the methods used to measure electric and magnetic fields outside the human body are explained. Dosimetric quantities are critically assessed in Section 2.3.

Comments on the Bioinitiative Report

- **Comment**: The Bioinitiative Report (BIR) looked at over 1800 scientific studies and found that damage to DNA can occur at low levels and also recommends a precautionary limit of 0.1 $\mu W/cm^2$.

Response: There are no replicated studies that show genetic damage from radiofrequency exposure at levels less than the levels necessary to elicit a thermal response. The BIR proposed a precautionary limit of 0.1 $\mu W/cm^2$. This limit is essentially based on a study by Kundi and Hutter[1] that has nothing to do with genetic damage. The Kundi and Hutter study is similar in results of a 2003 study by Zwamborn et al which focused on well being and cognitive function. However, both of these papers are at odds with the results of over 46 double blind provocation studies with a total of almost 1,200 participants. In summary, the participant's symptoms occurred whether they were exposed or not and certainly has nothing to do with exposures as low as 0.1 $\mu W/cm^2$. See Attachment 1 for more information on well being and electromagnetic hypersensitivity studies.

RF energy such as that used in cellular communication is at least 1 million times too low to directly break chemical bonds or disrupt macromolecules such as DNA. Included as Attachment 2 is a summary of animal studies from the Health Council of the Netherlands from 2014 regarding mobile phones and cancer. Other reviews are more direct, the Swedish Council on Working Life and Social Research[2] recently completed a ten year review on the subject and concluded the following:

> Research on mobile telephony and health started without a biologically or epidemiologically based hypothesis about possible health risks. Instead the inducement was an unspecific concern related to a new and rapidly spreading technology. Extensive research for more than a decade has not detected anything new regarding interaction mechanisms between radiofrequency fields and the human body and has found no evidence for health risks below current exposure guidelines. While absolute certainty can never be achieved, nothing has appeared to suggest that the since long established interaction mechanism of heating would not suffice as basis for health protection.

- **Comment**: Research has shown that when mice were subjected to continued microwave exposure at level 0.168 $\mu W/cm^2$ to 1.053 $\mu W/cm^2$ by the 5th generation of exposure irreversible sterility occurred.

Response: This statement refers to a study of Magras & Zenos in 1997 citing irreversible infertility in mice after 5 generations of exposure to RFR from an "antenna park". These authors compared mouse fertility in breeding pairs kept in an antenna park with those kept in the laboratory. In studies such as these, it is important to ensure that the mice under study are under the same exposure conditions as those in the control group. It is also equally important that the researchers handling the mice are not aware (blinded) as to which group is being exposed. Comparing the results of a group of mice in an RF antenna matrix to those in the laboratory under

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[1] Kundi M and Hutter HP. Mobile phone base stations - Effects on wellbeing and health. Pathophysiology. 16(2009), 123-135.

[2] http://forte.se/en/wp-content/uploads/sites/2/2015/11/10-y-rf-report.pdf. Accessed 3/12/16

different conditions negates all results from the study as environmental factors could easily explain the results. The lack of adequate controls means that their conclusion that the infertility was due to RF exposure is simply speculative. There exist a number of studies that examine effects on reproduction of animals (Tas et al 2013[3], Falzone et al 2008[4] and Falzone et al 2010[5]). SCENIHR[6] 2015 concludes that their overall assessment found no indication of an effect of RF fields on reproduction and development while commenting that there exist a number of poorly performed studies that lack adequate dosimetry to allow interpretation of the results.

Copies of tables found in BIR 2012 that display the author, exposure level, and the reported biological effects. Included below are a number of examples of the reason why these cited studies were simply poorly performed or not indicative of any effect, either positive or negative.

- The submittal includes an excerpt from the BIR 2012 that provides reported symptoms at impossibly low exposure levels and further links them with a stated study. I have previously provided two examples where the authors (Hutter, Kundi, and Zwamborn 2003) cite evidence of decreased feeling of well being yet the overwhelming evidence is that well performed double blind studies have not been able to show any adverse effects related to well being from the exposures.

- The Study by Magras and Xenos in 1997, discussed above, is another example of such a cited study.

- Hocking 1996 and Hocking 2004. This paper's conclusions is that RFR caused a two fold decrease in leukemia in children and RFR decreased survival in children with leukemia.

  Discussion: Hocking[7] and colleagues compared municipalities "near TV towers" to those further away. No RF energy exposures were actually measured, no other sources of exposure to RF are taken into account, and the study is based on only a single metropolitan area. The authors reported an elevated incidence of total leukemia and childhood leukemia, but no increase

[3] Tas M et al. Long term effects of 900 MHz radiofrequency radiation emitted from mobile phones on testicular tissue and epididymal semen quality. Electromagn Biol Med. 2013.
[4] Falzone N et al. In vitro effect of pulsed 900 MHz GSM radiation on mitochondrial membrane potential and motility of human spermatozoa. Bioelectromagnetics, 29(4), 268-76. 2008
[5] Falzone N et al. Mobile phone radiation does not induce pro-apoptosis effects in human spermatozoa. Radiat Res, 174(2), 169-76. 2010.
[6] Scientific Committee on Emerging and Newly Identified Health Risks. Potential health effects of exposure to electromagnetic fields (EMF). 2015 http://ec.europa.eu/health/scientific_committees/emerging/docs/scenihr_o_041.pdf. Accessed 3/13/2016.
[7] B Hocking et al: Cancer incidence and mortality and proximity to TV towers. Med J Austral 165:601-605, 1996.

in total brain tumor incidence or childhood brain tumor incidence. In 2003, they also reported decreased survival in these childhood leukemia cases[8].

McKenzie[9] and colleagues repeated the Hocking study. They looked at the same area, and at the same time period; but they made more precise estimates of the exposure to RF energy that people got in various areas. They found increased childhood leukemia in one area near the TV antennas, but not in other similar areas near the same TV antennas, and they found no significant correlation between RF exposure and the rate of childhood leukemia. The increased incidence reported by Hocking et al was found to have been based on data from a single area, and to have resulted largely from cases diagnosed before 24-hr TV transmission was introduced at most of the stations[10].

- Dolk 1997, this study found RFR associated with a doubling of leukemia in adults.

  Discussion: As a backdrop, Dolk[11] and colleagues investigated a reported leukemia and lymphoma cluster near a high-power FM/TV broadcast antenna at Sutton Coldfield in the UK. They found that the incidence of adult leukemia and skin cancer was elevated within 2 km of the antenna, and that the incidence of these cancers decreased with distance. No associations at all were seen for brain cancer, male or female breast cancer, lymphoma or any other type of cancer.
  Because of the above finding, Dolk[12] and colleagues extended their study to 20 other high-power FM/TV broadcast antennas in the UK. Cancers examined were adult leukemia, skin melanoma and bladder cancer, and childhood leukemia and brain cancer. No elevations of cancer incidence were found near the antennas, and no declines in cancer incidence with distance were seen. This large study does not support the results found in the much smaller studies by the same authors at Sutton Coldfield or by Hocking et al in Australia. Further, in a follow-up to the first 1997 Dolk et al study, Cooper[13] et al reported that more recent cancer incidence data did not support the association of distance and adult leukemia incidence reported at Sutton Coldfield.

- Phillips 1998, This study found RFR induced DNA damage in cells.

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[8] Summary provided by Dr. John Moulder, Medical College of Wisconsin.
[9] DR McKenzie et al: Childhood incidence of acute lymphoblastic leukemia and exposure to broadcast radiation in Sydney -- a second look. Aust New Zealand J Public Health 22:360-367, 1998.
[10] Summary provided by Dr. John Moulder, Medical College of Wisconsin.
[11] H Dolk et al: Cancer incidence near radio and television transmitters in Great Britain I. Sutton Coldfield Transmitter. Amer J Epidem 145:1-9, 1997.
[12] H Dolk et al: Cancer incidence near radio and television transmitters in Great Britain. II. All high power transmitters. Amer J Epidem 145:10-17, 1997.
[13] D Cooper, K Hemmings et al: Re: "Cancer incidence near radio and television transmitters in Great Britain. I. Sutton Coldfield transmitter; II. All high power transmitters". Am J Epidem 153:202-204, 2001.

Discussion: When one actually reviews the paper by Phillips one finds that the RF exposure increased DNA damage in 3 of 12 exposure regimens but decreased DNA damage in 4 of the other 9 regimens so the Phillips study found no overall effect and no pattern. The work of Phillips is often cited as evidence of damage to cells from RF exposure. The summary of this paper can be found in the World Health Organization EMF database[14] and is noted for the deficiencies in the study and that the study could not be replicated. To cite this as an example of effects is not appropriate.

- Dutta 1989, this paper found RFR caused calcium efflux in cells.

  Discussion: Keep in mind that this is a biological effect, not an adverse health effect. The actual effects reported by Dutta were small and found in only 6 of the 19 exposure regimens. The increased effects were not related to exposure intensity or frequency and could certainly be statistical artifact associated with a multiple comparison effect. It is unclear, even if these results were valid, that they have any significance for health.

- Salford 1994 and 2003, these papers identified effects of pathological leakage of the blood-brain barrier (BBB) following RF exposure.

  Discussion: These findings are controversial, both due to methodological deficiencies[15] and because BBB effects are not observed unless due to thermal exposures, and dozens of studies to date support this conclusion. A summary of three independent research groups failed to confirm the Salford and colleagues findings is summarized below[16]:

> Firstly, McQuade et al (2009) used a similar transverse electromagnetic transmission line (TEM) exposure cell and similar exposure parameters to those used by Salford and colleagues. Rats were exposed for 30 minutes to continuous and pulsed 915 MHz fields over a wide range of SARs. However, no increase in albumin extravasation was found in the brain at any intensity.
>
> Next, Masuda et al (2009) examined the effects of exposure for 2 hours to pulsed 915 MHz fields at up to 2.0 W kg^{-1}. The effects on albumin leakage and on the appearance of dark neurons were evaluated 14 and 50 days after exposure. Using improved staining techniques, no evidence of increased albumin extravasation was found in the brain, nor was the incidence of dark neurons significantly increased.
>
> Finally, Poulletier de Gannes et al (2009a) also used improved staining techniques to identify albumin leakage and the presence of dark neurons 14 or 50 days after head-only exposure of rats to a GSM signal. In addition, a more specific marker for neuronal degeneration was used, and apoptosis was measured. No evidence of increased albumin extravasation, neuronal degeneration, numbers of dark neurons or apoptosis was found in any of 12 selected regions of the brain. The lack of effect on albumin leakage is shown in Figure 4.1.

[14] http://apps.who.int/peh-emf/research/database/emfstudies/viewstudy.cfm?ID=44

[15] RCE-20. UK HPA Health Effects RF Electromagnetic Fields. Deficiencies noted include the use of rats from wildly different ages and the failure to acclimate the rats to the exposure system prior to testing. http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317133827077. Accessed 03/13/2016.

[16] RCE-20. UK HPA. Ibid. Note that Figure 4.1 was not included in this summary.

Conclusion

It is interesting that the BIR 2012 report was recently published and somehow managed to not discuss the subsequent papers that refuted the original findings nor did the BIR spend the time and review the actual papers to determine if the findings were in fact valid. I openly question the motives of the BIR authors in intentionally deceiving the public regarding the hazards of RF energy.

Respectfully Submitted,

Andrew H. Thatcher, MSHP, CHP

Attachment 1: Well Being and Electromagnetic Hypersensitivity

The most comprehensive review on the subject of Electromagnetic Hypersensitivity (EHS) has been performed by Dr. James Rubin and colleagues. In 2005, Rubin, Munshi and Wessely[17] reviewed the published studies related to Electromagnetic Hypersensitivity (EHS). Overall, 31 double blind[18] experiments were identified which tested 725 participants. 24 studies found no difference between the exposure and sham conditions. Of the remaining seven, two of the groups failed to replicate their own results while two other groups found opposite effects (better/worse mood). The other three results appeared to be statistical artifacts.

In 2010, Rubin and colleagues updated their 2005 review[19]. Fifteen new double blind studies were reviewed bringing the total to 46 double blind provocation studies with a total of 1175 participants. These studies directly analyzed whether RF fields are responsible for triggering various symptoms. Despite the conviction of the participants that RF/EMF exposure cause the acute symptoms, the studies were not able to replicate the findings. In short, the participant's symptoms occurred whether they were exposed or not. Many studies have identified the possibility that an adverse effect is caused by the belief that the exposure is harmful[20].

The Health Council of the Netherlands[21] has this to say on the symptoms experienced by individuals:

> Both in the living environment and in the laboratory, studies have been performed into a possible link between exposure to electromagnetic fields and the occurrence of symptoms. Several of these studies were not properly designed and cannot be used for the analysis. From the good quality scientific data emerges the picture that there is no causal relationship between exposure to radiofrequency electromagnetic fields and the occurrence of symptoms. However, there is a relationship between symptoms and the *assumption* of being exposed and therefore most likely with the risk perception. Nevertheless, the symptoms do exist and require a solution.

The World Health Organization (WHO) has issued a fact sheet on this subject. The overall conclusion is that while there is little doubt that the individuals are experiencing symptoms, 60 Hz power frequency fields or RF energies are not the cause. WHO fact sheet #296 is on EHS.

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[17] Rubin, J.G. Munshi, J.D. and Wessely, S. Electromagnetic Hypersensitivity: A systematic Review of Provocation Studies. Psychosomatic Medicine 67: 224-232. 2005.

[18] Double blind experiments are superior to single blind experiments as neither the participant nor the researcher knows who is being exposed and thereby avoids the introduction of bias from an expectation of the results due to the exposure.

[19] Rubin, J.G. Nieto-Hernandez, R. and Wessely. Idiopathic environmental intolerance attributed to electromagnetic fields (formerly 'electromagnetic hypersensitivity'): An updated systematic review of the provocation studies. Bioelectromagnetics. Vol 31(1) pp:1-11. 2010.

[20] http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf

[21] http://www.gezondheidsraad.nl/sites/default/files/200902.pdf

Attachment 2: Radiofrequency Exposure and Cancer Potential

Health Council of the Netherlands. Mobile phones and cancer: Part 2. Animal studies on carcinogenesis.
The Hague: Health Council of the Netherlands, 2014; publication no. 2014/22.[22]

Summary

Systematic search

The systematic literature search performed by the Committee revealed a substantial body of 54 animal studies on the carcinogenesis of exposure to RF fields. In 23 studies the effect of exposure to RF EMF alone has been investigated. A variety of animal models and tumour types has been used, as well as a number of different types of RF signals, although the focus has been on the types of signals used in modern mobile telecommunication. Exposure has been from several weeks up to two years, and the follow-up time generally life-long. In addition, 24 studies investigated the modulating effects of RF exposure on carcinogenesis induced by various well-known carcinogenic compounds, and another seven studies on the effect of RF exposure on the growth of implanted tumours. These data cover a wide range of experimental situations and may thus provide a reasonably well insight into the effects of RF exposure on carcinogenesis in rodents.

No effect in most studies.

The analysis of the quality of the studies, as reflected in the possibility that the internal or external validity of the studies could be affected, showed that most of the studies are of adequate design. However, in seven studies various issues resulted in a negative appraisal and these studies were consequently excluded from the overall analysis. Of the remaining 47 studies, five showed an increase in the incidence of several types of tumours. Four of these were closely linked and performed by the same research group. They used rather high exposure levels and could not exclude thermal effects. The fifth study found an increased incidence of chemically-induced lung tumours, but lacked a proper control group. The authors consider it to be a preliminary study that needs to be replicated. The Committee has given it a low weight in the overall analysis. A further three studies found a decreased rate of tumour growth in RF EMF exposed animals. There is no logical explanation for this, and therefore these are considered to be chance results. This might also be the case for the positive associations observed in the studies described above. In the majority of the studies, however,39 in total, describing experiments on a range of tumour types and in different species, no effect on carcinogenesis has been observed.

Conclusions

This has led the Committee to conclude that, on the basis of the results of the animal studies presented in this systematic review, it is highly unlikely that long-term continuous or repeated exposure to RF EMF may have initiating or promoting effects on the development of cancer.

[22]http://www.gezondheidsraad.nl/sites/default/files/mobile_phones_and_cancer_part_2_animal_studies_on_carcinogenesis.pdf. Accessed 3/12/16.

Epidemiological Studies and RF Base Stations

A summary of related studies to this subject is as follows:

- 1992: Selvin and colleagues[1] investigated the occurrence of cases of leukemia, brain cancer, and lymphatic cancer in children under 21 years of age in an area around a large microwave tower located to the southwest of the center of San Francisco. They used three analytical approaches to investigate a possible association between the electromagnetic radiation from the tower and the occurrence of cancer. Their results showed that cancer occurrence was random. In other words, no pattern emerged that suggested an association between the tower and the occurrence of cancer. The weaknesses of this study were that no measurements of exposure were taken, and other factors that could influence the occurrence of cancer were not considered[2].

- 1994: Maskarinec, G, and colleagues[3] report a cluster of twelve cases of leukemia occurring in children in Waianae Coast in Oahu, Hawaii in the years 1979-1990. The population had expressed concerns about radio towers from a nearby military installation. The radio waves were transmitted at 23.4KHz. In a case control study, each case was matched with 4 controls for age and sex. Risk factors examined included parents' occupations, x-ray exposure, domestic smoking, family and medical histories, and distance of the children's residence locations to the radio towers. The odds ratio found was 2.0 for having lived within 2.6 miles of the installation but this OR was not statistically significant due to the low numbers used in the study. Exposure to radiofrequencies was not adequately assessed, and other possible risk factors, e.g. chemical exposure, were not included in the investigation. The authors state that since 1985 the incidence of leukaemia in the area has returned to an expected pattern of approximately one case every 2 years. This paper demonstrates the difficulty of interpreting a cluster of cases of a disease[4].

- 1996 and 2004: Hocking[5] and colleagues compared municipalities "near TV towers" to those further away. No RF energy exposures were actually measured, no other sources of exposure to RF are taken into account, and the study is based on only a single metropolitan area. The authors reported an elevated incidence of total leukemia and childhood leukemia, but no increase in total brain tumor incidence or childhood brain tumor incidence. In 2003, they also reported decreased survival in these childhood leukemia cases[6].

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[1] Selvin S, Schulman J, and Merrill DW. Distance and risk measures for the analysis of spatial data: A study of childhood cancers. Social Science in Medicine 7:769-777. 1992.
[2] Summary provided by the University of Ottawa. http://www.rfcom.ca/epi/pop.shtml
[3] Maskarinec G, Cooper J, and Swygert L. Investigation of increased incidence of childhood leukemia near radio towers in Hawaii: Preliminary observations. Journal of Env. Pathology, Toxicology and Oncology. 13:33-37. 1994
[4] Summary provided by the University of Ottawa. http://www.rfcom.ca/epi/pop.shtml
[5] B Hocking et al: Cancer incidence and mortality and proximity to TV towers. Med J Austral 165:601-605, 1996.
[6] Summary provided by Dr. John Moulder, Medical College of Wisconsin.

- 1998: McKenzie[7] and colleagues repeated the Hocking study. They looked at the same area, and at the same time period; but they made more precise estimates of the exposure to RF energy that people got in various areas. They found increased childhood leukemia in one area near the TV antennas, but not in other similar areas near the same TV antennas, and they found no significant correlation between RF exposure and the rate of childhood leukemia. The increased incidence reported by Hocking et al was found to have been based on data from a single area, and to have resulted largely from cases diagnosed before 24-hr TV transmission was introduced at most of the stations[8].

- 1997: Dolk[9] and colleagues investigated a reported leukemia and lymphoma cluster near a high-power FM/TV broadcast antenna at Sutton Coldfield in the UK. They found that the incidence of adult leukemia and skin cancer was elevated within 2 km of the antenna, and that the incidence of these cancers decreased with distance. No associations at all were seen for brain cancer, male or female breast cancer, lymphoma or any other type of cancer.
- 1997: Because of the above finding, Dolk[10] and colleagues extended their study to 20 other high-power FM/TV broadcast antennas in the UK. Cancers examined were adult leukemia, skin melanoma and bladder cancer, and childhood leukemia and brain cancer. No elevations of cancer incidence were found near the antennas, and no declines in cancer incidence with distance were seen. This large study does not support the results found in the much smaller studies by the same authors at Sutton Coldfield or by Hocking et al in Australia.

- 2001: In a follow-up to the first 1997 Dolk et al study, Cooper[11] et al reported that more recent cancer incidence data did not support the association of distance and adult leukemia incidence reported at Sutton Coldfield.

- 2002: Michelozzi[12] et al reported that the incidence of childhood leukemia was elevated within 6 km of Vatican Radio (31 transmitters at 4-44 kHz and 0.5-1.6 MHz, with power of up to 600,000 W). The authors also report elevated leukemia in adult men residing near the transmitters, but not in adult women. Interpretation of this reported cancer cluster is limited by the small numbers and by the use of distance as a surrogate of exposure (i.e. no direct exposure measurements). For example, only 8 childhood leukemia cases occurred during a 12 year period.

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[7] DR McKenzie et al: Childhood incidence of acute lymphoblastic leukemia and exposure to broadcast radiation in Sydney -- a second look. Aust New Zealand J Public Health 22:360-367, 1998.
[8] Summary provided by Dr. John Moulder, Medical College of Wisconsin.
[9] H Dolk et al: Cancer incidence near radio and television transmitters in Great Britain I. Sutton Coldfield Transmitter. Amer J Epidem 145:1-9, 1997.
[10] H Dolk et al: Cancer incidence near radio and television transmitters in Great Britain. II. All high power transmitters. Amer J Epidem 145:10-17, 1997.
[11] D Cooper, K Hemmings et al: Re: "Cancer incidence near radio and television transmitters in Great Britain. I. Sutton Coldfield transmitter; II. All high power transmitters". Am J Epidem 153:202-204, 2001.
[12]) P Michelozzi, A Capon et al: Adult and childhood leukemia near a high-power radio station in Rome, Italy. Amer J Epidemiol 155:1096-1103, 2002.

- 2004: Park[13] et al reported that overall cancer death rates were slightly elevated among people who died in "administrative units" that contained AM radio broadcast antennas. The overall association is weak and is seen only in males. No specific types of cancer are elevated, and there is no trend toward increased cancer death rates with increasing broadcast power. The authors note that "In the Korean culture, most people tend to return to their hometown when they die"; so that the "administrative units" where people die will frequently not reflect where they lived (and what they were exposed to) before they developed cancer.

- This significant statement by Park et al of the Korean culture would serve to limit the potential benefit of ecological studies as no direct exposure relationship could easily be determined for individuals without extensive retrospective follow-up.

- 2003: Ha[14] et al compares the cancer incidence of groups exposed to low power versus high power RF fields. The control in this instance (50 kW and less) are the exposures we are (in the U.S. and Europe) interested in. The authors do call for an individual study (case control or nested case control study) to further analyze the association between exposure and cancer.

- 2007: Ha[15] et al analyzed cancer incidence from AM broadcast towers in adults and children living in Korea (those living within 1.2 miles). Tower transmitted power was between 100 to 500 kW. The initial studies (2003) reported one area with a significant increase in leukemia and another area showing a significant increase in brain tumor as compared to the control areas. However, when all 10 areas were analyzed together there was no overall increase in leukemia or brain tumor incidence. Collectively, the overall cancer mortality was significantly higher and this is similar to the results of Park and the possible complication of Korean culture.

  On a follow up study by Ha of children and leukemia, the group first found a correlation with all types of leukemia. However, when re-analyzed with predicted field strength instead of distance, no association found (OR = 0.83).

- 2004. Wolf et al[16]. People (n=622) living in proximity to a mobile phone cell site in Netanya, Isreal (began operation in July 1996) and attending a cancer clinic were compared with control populations registering in a neighboring clinic in Netanya as well as the entire population cancer rate in Netanya. Eight cases in the experimental area were diagnosed during the study period between July 1997-June 1998 - all different types of cancer (ovarian, breast lung, hodgkins, Osteoid osteoma, and hypernephroma). The authors report a statistically significant association between residential proximity to the mobile phone base station site and cancer incidence. The problems with this study are numerous. First, the cancers identified were of multiple types. The cellular base station

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[13] SK Park, M Ha et al: Ecological study on residences in the vicinity of AM radio broadcasting towers and cancer death: preliminary observations in Korea. Int J Occup Environ Health 77:387-394, 2004.
[14] M Ha et al: Incidence of cancer in the vicinity of Korean AM radio transmitters. Arch Environ Health. 2003 Dec:; 58(12): 756-62.
[15] Ha M et al; Radiofrequency radiation exposure from AM radio transmitters and childhood leukemia and brain cancer. American Journal of Epidem. June 2007.
[16] Wolf R et al. Increased Incidence of Cancer Near a Cell Phone Transmitter Station. Int J Cancer Prev. 2004, 1:1-12.

was in operation for only a year prior to the start of the study meaning that the cancer latency period was less than 2 years, no adult cancers have a latency that short. The controls were not adequately matched nor was there adequate control for confounding variables. Cellular base stations are located throughout cities, were other radiofrequency exposures addressed and adequately controlled?

- 2004. Eger et al[17]. Residential proximity to mobile phone base stations was correlated with total cancer incidence. The authors report that preliminary data (1000 individuals) suggests a correlation between general cancer onset and incidence and time living near a mobile phone base station tower. A radius of 400 meters was chosen as the cut-off for the high exposed group with an average distance to buildings within this circle of 266 meters. The average distance to buildings outside the circle was 1076 meters (low exposed group). The transmitter site used for the study has had one antenna operating since September 1993 at 32 watts per channel at a frequency of ~935 MHz (GSM signal), and in 1997 an additional transmitter was installed on the tower by another operator. Exposure was calculated assuming free space characteristics. The authors report that for the period of 1999 to 2004, a correlation between high exposure and general cancer incidence was observed (OR = 3.38; 95% CI = 1.39 - 8.25). Absolutely zero measurements were made for this study so no other sources of RF exposure were taken into consideration. Without measurements, relying solely on calculations, particularly in a city, greatly overestimates the actual exposure due to shielding, etc. The author's table 7 shows the comparison of tumors found (11 different cancer endpoints) to the expected number for a given population. With the exception of breast cancer, all results were equal to or less than expected. Further, when one reviews the trends over time, the overall cancer incidence rate remains unchanged. Finally, only rudimentary consideration for adequately matching of controls.

- 2008: Merzenich[18] et al conducted a case control study of electromagnetic fields and childhood leukemia in West Germany. Total towers were 16 AM and 8 FM transmitters. Cases were ages 0 to 14 diagnosed between 1984 and 2003. The analysis included 1,959 cases and 5,848 controls. Considering total RF-EMF, the OR for all types of leukemia was 0.86 (0.67-1.11). The OR for all types of leukemia was 1.04 (0.65, 1.67) among children living within 2 km of a transmitter compared with those living at a distance.

- 2010: Elliott et al[19] conducted a case control study of mother's exposure to radiofrequency from proximity to mobile phone base stations during pregnancy. 1397 cases and 5588 controls in Great Britain. Outcome measures included cancers of the brain and central nervous system, leukemia, lymphomas (non Hodgkins) and all cancers combined. There was no association between risk of early childhood cancers and estimates of the mother's exposure to mobile phone base stations during pregnancy. In this study distance was used as a surrogate for exposure and as the exposure would vary greatly within a fixed distance. Distance is a poor indicator of actual exposure.

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[17] Eger H et al. EINFLUSS DER RÄUMLICHEN NÄHE VON MOBILFUNKSENDEANLAGEN AUF DIE KREBSINZIDENZ. Umwelt-Medizin-Gesellschaft , 2004.

[18] Merzenich, H. Schmiedel, S, Bennack, S., Bruggemeyer H. Philipp J. Blettner M, and Schuz J. Childhood leukemia in relation to radio frequency electromagnetic fields in the vicinity of TV and radio broadcast transmitters. Am J. Epi. Vol 168: 1169-1178, 2008.

[19] Elliott, P. Toledano, M.B. Bennett, J. Beale, L., de Hoogh, K., Best, N., Briggs, D.J. Mobile phone base stations and early childhood cancers: case control study. BMJ 2010;340:c3077 doi:10.1136/bmj.c3077.

- 2012: Li et al[20]. Population based case control study in Taiwan considered child ages 15 years or less admitted from 2003 to 2007 for all neoplasms (including leukemia and brain neoplasm cases). Annual summarized power for each of 71,185 mobile phone base stations in service from 1988 to 2007 then computed the annual power density per mobile phone base station per township. A slightly elevated but not statistically significant risk was observed for leukemia and brain neoplasms (RR = 1.13, RR = 1.23).
- 2014: Hauri et al[21]. A time to event analysis including children under age 16 living in Switzerland in year 2000. Follow-up lasted until 2008. RF exposure from broadcast transmitters was modeled. Based on 997 cancer cases, adjusted hazard radios were 1.03 (95% CI: 0.75, 1.43) for all cancers, 0.55 (95% CI: 0.26, 1.19), and 1.68 (95% CI: 0.98, 2.91) for childhood central nervous system tumors. Results of the incidence density analysis based on 4,246 cancers were similar for all types of cancer and leukemia but did not indicate a CNS tumor risk (incidence rate ratio 1.03 (95% CI: 0.73, 1.46). This large census based cohort study did not suggest an association between predicted RF exposure from broadcasting and childhood leukemia. The results for CNS tumors were less consistent but did not suggest an association.

  A second analysis by the same group was an incidence density cohort analysis with 4,246 cancer cases obtained from the Swiss Childhood Cancer Registry from 1998 to 2008. The analysis showed a somewhat higher risk for CNS-tumors for the time period 1985-1995 with a Hazard ratio (HR) of 1.6 (95% CI 0.98-2.61). However, for the later period of 1996-2008 the CNS-tumors showed a reduced risk of 0.75 (95% CI 0.45-1.23). The HR over the entire time period was 1.03, indicating no effect.

- Santini et al[22], 2003. Study of the health of people living in the vicinity of mobile phone base stations. This is not a "study" but a survey using a questionnaire. The survey volunteers were self selected with the questions focusing on symptoms such as nausea, loss of appetite, visual disturbances, loss of memory, dizziness, headaches, sleep disruption, skin problems, etc. At no time were measurements made of the various sources of radiofrequency (RF) and or magnetic fields (60 Hz sources). In short, the "study" is nothing more than a group of self selected individuals who attribute feelings of ill health to proximity to exposure to various RF sources. In a large city, small RF emitters such as those from cellular providers may not be the primary source of RF exposure as FM and TV stations as considerable distances from the individual can also significantly contribute to exposure.
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[20] Li CY,Liu CC, Chang YH, Chou LP, Ko MC. A population-based case control study of radiofrequency exposure in relation to childhood neoplasm. Sci Total Environ. 2012, 435-436: 472-8.

[21] Hauri dd, Spycher B, Huss A, Zimmermann F, Grotzer M, von der Weid N, Spoerri A, Kuehni CE, Roosli M, Swiss National Cohort, Swiss Paediatric Oncology Group. Exposure to radio-frequency electromagnetic fields from broadcast transmitters and risk of childhood cancer: a census based cohort study. Am J. Epidemiology. 179(7): 843-851. 2014.

[22] http://www.emrpolicy.org/science/research/docs/santini_ebm_2003.pdf Accessed 5/12/16.

Electromagnetic Hypersensitivity

The most comprehensive review on the subject of Electromagnetic Hypersensitivity (EHS) has been performed by Dr. James Rubin and colleagues. In 2005, Rubin, Munshi and Wessely[1] reviewed the published studies related to Electromagnetic Hypersensitivity (EHS). Overall, 31 double blind[2] experiments were identified which tested 725 participants. 24 studies found no difference between the exposure and sham conditions. Of the remaining seven, two of the groups failed to replicate their own results while two other groups found opposite effects (better/worse mood). The other three results appeared to be statistical artifacts.

In 2010, Rubin and colleagues updated their 2005 review[3]. Fifteen new double blind studies were reviewed bringing the total to 46 double blind provocation studies with a total of 1175 participants. These studies directly analyzed whether RF fields are responsible for triggering various symptoms. Despite the conviction of the participants that RF/EMF exposure cause the acute symptoms, the studies were not able to replicate the findings. In short, the participant's symptoms occurred whether they were exposed or not. Many studies have identified the possibility that an adverse effect is caused by the belief that the exposure is harmful[4].

The Health Council of the Netherlands[5] has this to say on the symptoms experienced by individuals:

> Both in the living environment and in the laboratory, studies have been performed into a possible link between exposure to electromagnetic fields and the occurrence of symptoms. Several of these studies were not properly designed and cannot be used for the analysis. From the good quality scientific data emerges the picture that there is no causal relationship between exposure to radiofrequency electromagnetic fields and the occurrence of symptoms. However, there is a relationship between symptoms and the *assumption* of being exposed and therefore most likely with the risk perception. Nevertheless, the symptoms do exist and require a solution.

The World Health Organization (WHO) has issued a fact sheet on this subject. The overall conclusion is that while there is little doubt that the individuals are experiencing symptoms, 60 Hz power frequency fields or RF energies are not the cause. WHO fact sheet #296 is on EHS.

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[1] Rubin, J.G. Munshi, J.D. and Wessely, S. Electromagnetic Hypersensitivity: A systematic Review of Provocation Studies. Psychosomatic Medicine 67: 224-232. 2005.

[2] Double blind experiments are superior to single blind experiments as neither the participant nor the researcher knows who is being exposed and thereby avoids the introduction of bias from an expectation of the results due to the exposure.

[3] Rubin, J.G. Nieto-Hernandez, R. and Wessely. Idiopathic environmental intolerance attributed to electromagnetic fields (formerly 'electromagnetic hypersensitivity'): An updated systematic review of the provocation studies. Bioelectromagnetics. Vol 31(1) pp:1-11. 2010.

[4] http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf

[5] http://www.gezondheidsraad.nl/sites/default/files/200902.pdf

Andrew H. Thatcher, MSHP, CHP
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CG ENGINEERING

civil & structural
engineering & planning

STRUCTURAL CALCULATIONS

PSERN - Bellevue Station 9

12412 Newcastle Way
Bellevue, WA 98006

7/12/2016

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Edmonds, WA 98020
Phone: (425) 778-8500
Fax: (425) 778-5536

CG Project No.: 16015.902

Project Location
Bellevue Station 9
12412 Newcastle Way
Bellevue, WA 98006

Project Description
New PSERN 40'X40' telecommunications compound with an equipment shelter and a diesel storage tank, both require a concrete foundation design. An 8'-0" tall sound attenuating wood privacy fence will also be designed with a post in pier foundation. An ice bridge post in pier foundation also is to be designed.

Scope of Work
Provide stamped and signed structural calculations and construction documents in accordance with current building code.

Basis of Design

Roof Loads

	Snow	60.5 psf (per mfr)
	Live	150 psf (per mfr)
Floor Loads	Live	200 psf (per mfr)
Equipment Shelter	Dead	80000 lbs
Diesel Storage Tank	Dead	18000 lbs
Allowable Soil Bearing		3000 psf
Lateral Bearing Pressure		350 psf

See Tetra Tech Geotech report # 114-570974

Lateral Loads

Seismic: V = Wp* [Sds / (R/Ie)] = .946 / (4 / 1.5) = 0.355 * Wp
Sds = 0.946
Ie = 1.5
Wp = Seismic dead load of the structure

Wind: F = Ps * Af = (lamda) * Kzt * Ps30 * Af = 1.00 * 1.0 * 21.0 psf * Af = 21.00 * Af
115 MPH wind, 0-5 degree roof slope, Exp. B, Risk Cat. III
h = 10.5 ft

USGS Design Maps Summary Report

User-Specified Input

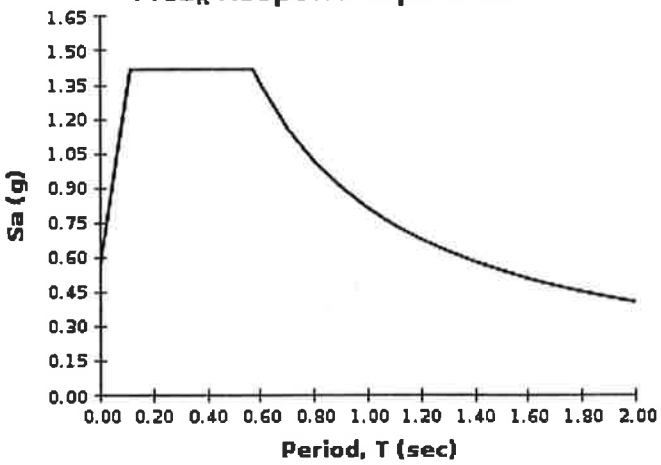
Report Title	Bellevue Station 9 Mon March 14, 2016 22:12:12 UTC
Building Code Reference Document	2012 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	47.541°N, 122.17508°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

USGS-Provided Output

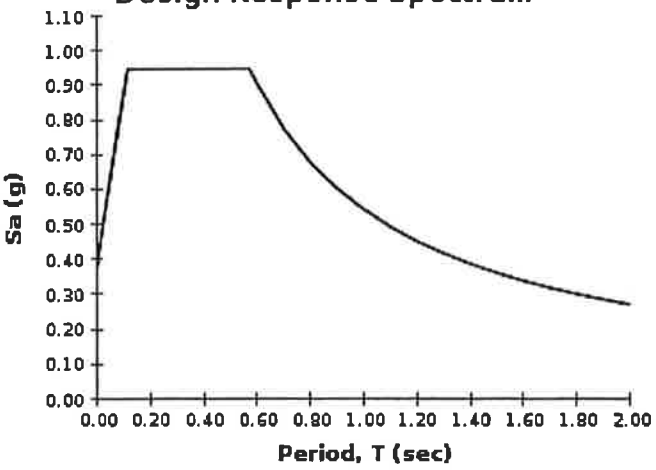
S_S =	1.419 g	S_{MS} =	1.419 g	S_{DS} =	0.946 g	$F_a = 1.0$
S_1 =	0.541 g	S_{M1} =	0.811 g	S_{D1} =	0.541 g	$F_v = 1.5$

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

MCE_R Response Spectrum



Design Response Spectrum



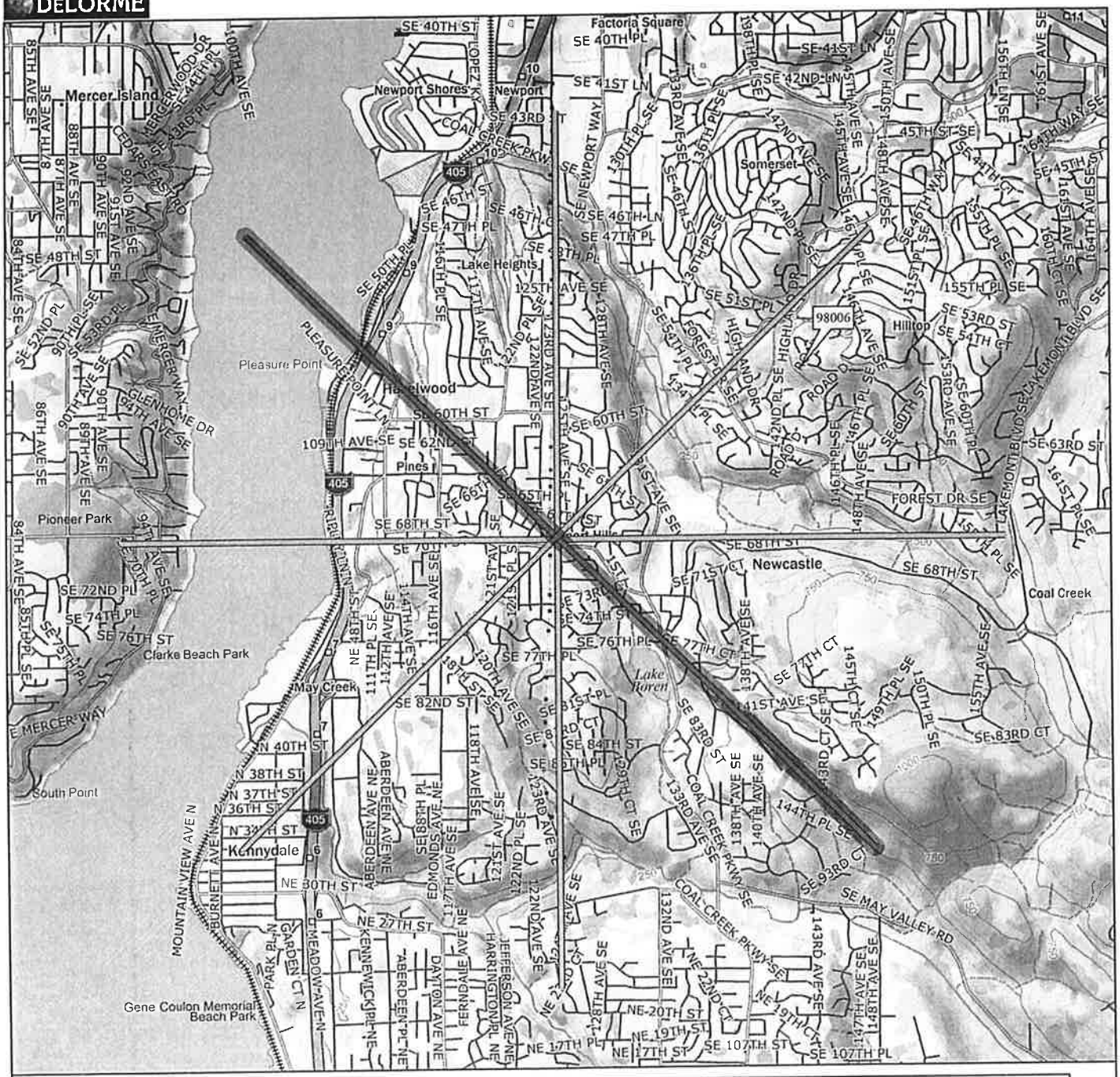
Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the

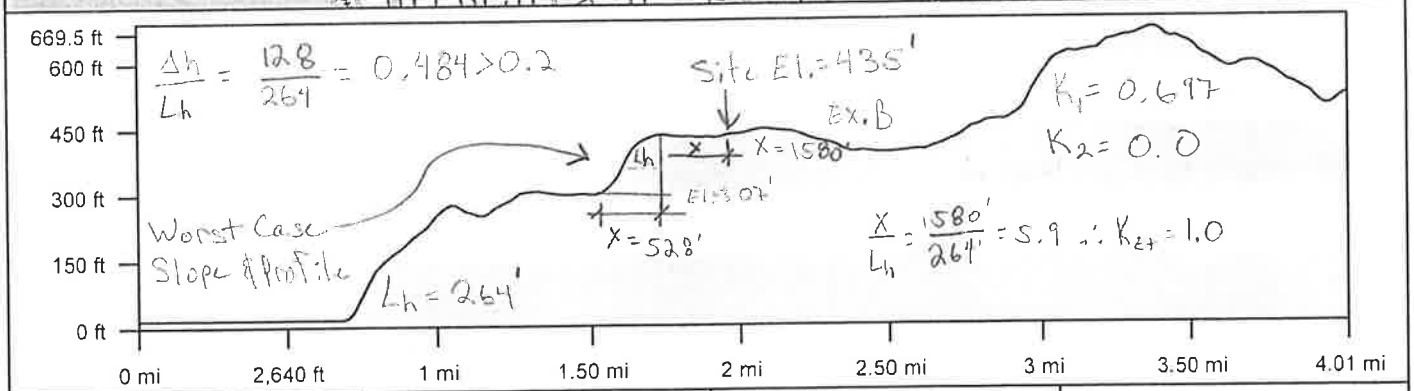
2

Seismic Design			2015 IBC	ASCE 7-10
Risk Category	Type III		Table 1604.5	Table 1.5-1
Seismic Importance Factor	I_E= 1.50			Table 1.5-2
Site Class	S.C.= D	(Assumed)	Section 1613.3.2	Table 20.3-1
0.2s Spectral Response	S_S= 1.419		Figure 1613.3.1(1-6)	Figure 22-1
1.0s Spectral Response	S_1= 0.541		Figure 1613.3.1(1-6)	Figure 22-2
	(Source: http://geohazards.usgs.gov/designmaps/us/application.php)			
Site Coefficient (short period)	F_a= 1		Table 1613.3.3(1)	Table 11.4-1
Site Coefficient (1.0 second)	F_v= 1.5		Table 1613.3.3(2)	Table 11.4-2
$S_{MS}=F_a*S_s$	S_{MS}= 1.419		Section 1613.3.3	Section 11.4.3
$S_{M1}=F_v*S_1$	S_{M1}= 0.8115		Section 1613.3.3	Section 11.4.3
$S_{DS}=2/3*S_{MS}$	**S_{DS}= 0.946**		Section 1613.3.4	Section 11.4.4
$S_{D1}=2/3*S_{M1}$	S_{D1}= 0.541		Section 1613.3.4	Section 11.4.4
Seismic Design Category	**SDC= D**		Table 1613.3.3(1-2)	Section 11.6
Lateral Resisting System	Ordinary reinforced concrete shear walls			
Response Modification Coeff.	R= 4.00			Table 12.2-1
System Overstrength Factor	Ω_0=			Table 12.2-1
Deflection Amplification Factor	C_d=			Table 12.2-1
Horizontal Irregularities	---	NA		Table 12.3-1
Vertical Irregularities	---	NA		Table 12.3-2
Analysis Procedure	---	ELF		Table 12.6-1
Equivalent Lateral Force Design				Section 12.8
Structure Type for Period	All Other Structural Systems			Table 12.8-2
Building Period Coefficient	C_t= 0.02			Table 12.8-2
Building Period Coefficient	x= 0.75			Table 12.8-2
Building Height	h_n= 10.5			
Building Period, $T_a=C_t h_n^x$	T_a= 0.117			Section 12.8.2.1
$C_s=S_{DS}/(R/I_E)$	C_S= 0.355			Eqn. 12.8-2
Max $C_s=S_{D1}/(T*R/I_E)$	Max C_S= 1.739			Eqn. 12.8-3
Min. $C_s=0.044*S_{DS}*I_E$	Min. C_S= 0.062			Eqn. 12.8-5
Min. $Cs=0.5*S_1/(R/I_E)$, SDC E&F	Min. C_S= N.A.			Eqn. 12.8-6
Seismic Response Coeff., C_S	**C_S= 0.355**			Section 12.8.1.1

ENGINEERING
250 4th Ave South
Suite 200
Edmonds, WA 98020

Description	By	Date
Seismic Summary EQUIPMENT SHELTER	PDT	7/11/2016
	Checked	Date
	Scale NTS	Sheet No. 3
Project: Bellevue Station 9	Job No. 16015.902.2	





Lin Dist: 4.0 mi	Terr Dist: 4.0 mi	Elev Gain: 500.9 ft	Avg Grade: 5
Climb Elev: 797.3 ft	Desc Elev: 296.4 ft	Max. Elev: 669.5 ft	Min. Elev: 16.2 ft
Climb Dist: 2.1 mi	Desc Dist: 1.3 mi		

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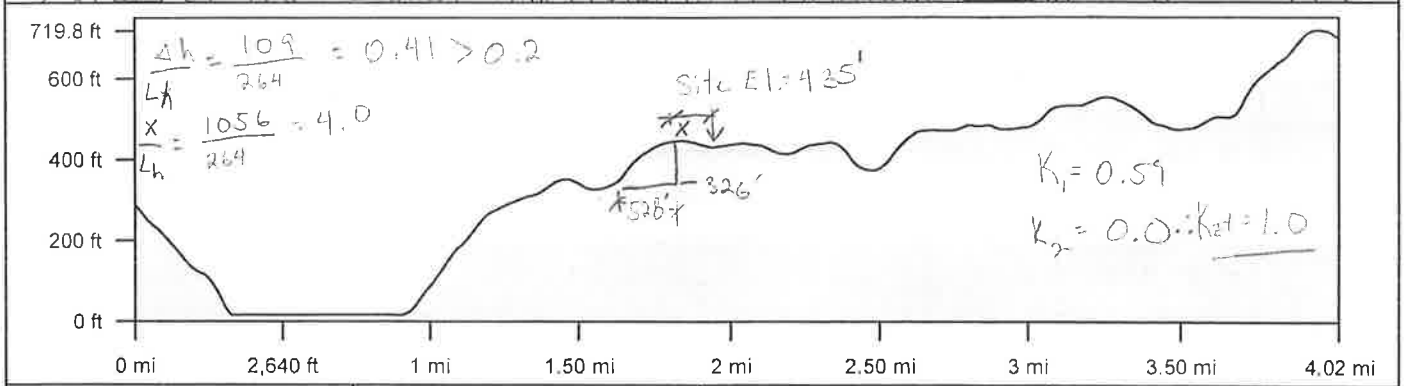
TN

MN (16.8°E)

Scale 1 : 43,750

1" = 3,645.8 ft Data Zoom 12-2



Lin Dist: 4.0 mi	Terr Dist: 4.0 mi	Elev Gain: 413.2 ft	Avg Grade: 6
Climb Elev: 937.3 ft	Desc Elev: 524.1 ft	Max. Elev: 719.8 ft	Min. Elev: 15.5 ft
Climb Dist: 2.2 mi	Desc Dist: 1.3 mi		

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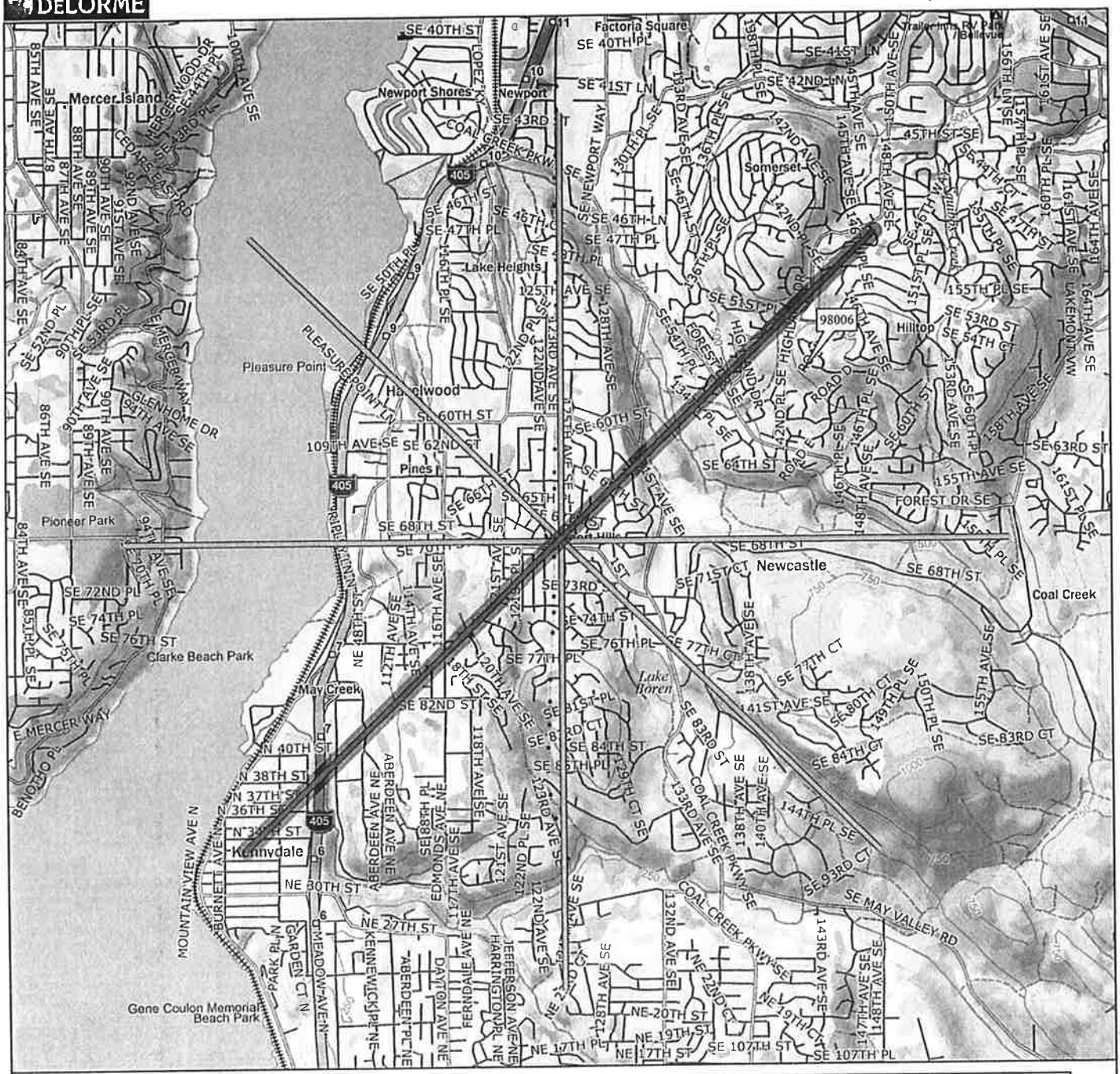
TN

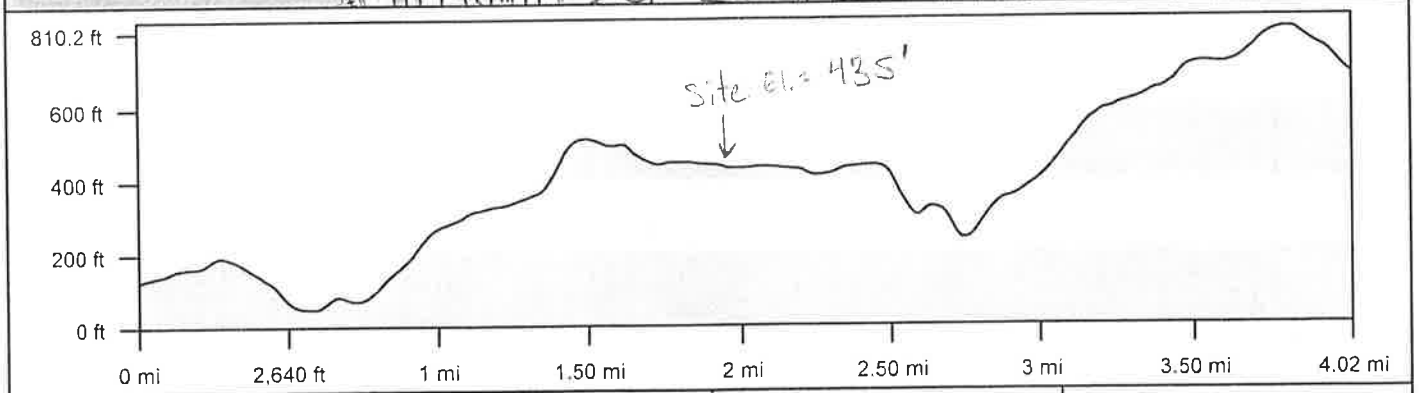
Scale 1 : 62,500

1" = 5,208.3 ft

Data Zoom 11-6

5





Lin Dist: 4.0 mi	Terr Dist: 4.0 mi	Elev Gain: 560.7 ft	Avg Grade: 8
Climb Elev: 1,187.4 ft	Desc Elev: 626.8 ft	Max. Elev: 810.2 ft	Min. Elev: 47.9 ft
Climb Dist: 2.5 mi	Desc Dist: 1.5 mi		

Data use subject to license.

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TN

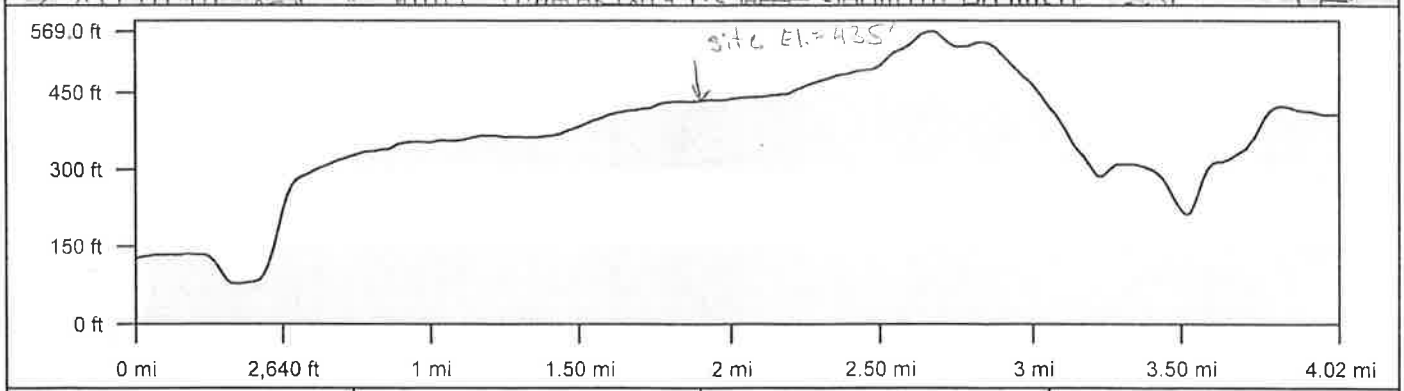
MN (15.8°E)

Scale 1 : 43,750

1" = 3,645.8 ft

Data Zoom 12-2

6



Lin Dist: 4.0 mi	Terr Dist: 4.0 mi	Elev Gain: 279.2 ft	Avg Grade: 5
Climb Elev: 751.5 ft	Desc Elev: 472.3 ft	Max. Elev: 569.0 ft	Min. Elev: 77.5 ft
Climb Dist: 2.6 mi	Desc Dist: 1.4 mi		

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TN

MN (16.6°E)

Scale 1 : 62,500

1" = 5,208.3 ft

Data Zoom 11-6

4

Lateral Forces

Wind - Per ASCE Ch. 28.5 ENCLOSED SIMPLE DIAPHRAGM

$h = 10.5'$
$V = 115$ mph
Exp. Cat. B
Risk Cat. III
$K_h = 0.85$
$K_{zt} = 1.0$
$K_d = 0.85$

$p_s = \lambda K_{zt} p_{s30} = (1.0)(1.0)(21.0 psf)$ - Eq. 28.6-1
(21.0 psf ↑ zone A)

$= 21.0$ psf

Snow Load $P_g = 60$ PSF per mfr, Flat roof, ref. ASCE 7-10

C_e (per table 7-2) $= 1.0$, $C_t = 1.2$, $I_s = 1.2$

$P_f = 0.7 C_e C_t I_s P_g = 0.7(1.0)(1.2)(1.2)(60 PSF) = 60.5$ PSF

$P_f = 60.5$ PSF > Min City Regmt $= 25$ PSF
↑ see print out

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		Checked	Date
		Scale	Sheet No.: 8
	Project: Bellevue Station 9	Job No.: 16015.902	

International Residential Code (IRC)

Table R301.2(1)

Climatic and Geographic Design Criteria

3/20/07

The city may require additional information as needed. If you have any questions concerning your application submittal, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

The provisions of the 2003 IRC for one- and two-family dwellings apply to the construction, alteration, and enlargement of:

- detached one- and two-family dwellings and multiple single-family dwellings (townhouses*) not more than three stories in height with a separate means of egress, and
- their accessory structures.

When a building or structure falls within the limitations of R301, the criteria noted in Table R301.2(1) must be used for design of the building or structure.

Buildings and structures must be constructed to safely support all loads (including dead loads, live loads, roof loads, flood loads, snow loads, wind loads, and seismic loads) as prescribed in the 2003 IRC. Design and construction must result in a system that provides a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation.

*A townhouse is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides. Townhouses not more than three stories in height with a separate means of egress fall under the provisions of the IRC. Accessory structures fall under the provisions of the IRC—under the code(s) applicable to the main structure that they are accessory to.

TABLE R301.2(1)

ROOF & GROUND SNOW LOAD	WIND SPEED (mph)	SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP	ICE SHIELD UNDER-LAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP
			Weathering	Frost-line depth	Termite	Decay					
25 psf	85 mph	D2	Moderate	12"	Slight to Moderate	Slight to Moderate	22 °F	No	March 12, 1974 entry into National Flood Insurance Program. Current maps dated November 9, 1999	170	51 °F

Equipment Shelter Foundation Design

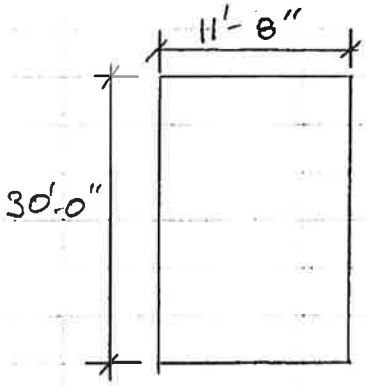
Building Wt. = 80^K + $0.1(80^K)$ + 10^K + 2.5^K = 100.5^K
(Shelter) (misc. DL) (HVAC) (Generator)

Snow Load = 60.5psf

Roof Live Load = 150psf

Roof Area = 30' × 12' = 360 sf

Floor Live Load = 200psf



PLAN

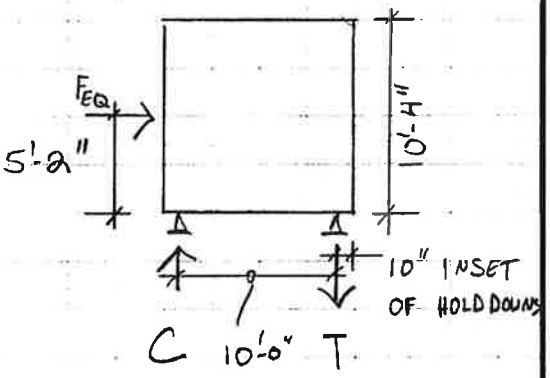
$F_{EQ} = 0.355 \times 88^K_{DL} = 31.2^K_{ULT.}$ ← Governs

$F_{WIND} = (10.3' \times 30') \times 21.0\,psf = 6.5^K_{ULT.}$

$P_D = 100.5^K$

$P_S = 360\,sf \times 60.5\,psf = 21.8^K$

$P_{L_{ROOF}} = 360\,sf \times 150\,psf = 54^K$



Elevation

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		Checked	Date
		Scale	Sheet No.: 9
	Project: Bellevue Station 9	Job No.: 16015.902	

Equipment Shelter
Foundation Design

Check Uplift: $M_{OT} = 31.2^K \times \frac{10.33}{2} \times 0.7 = 113\ K\text{-FT}$ (ASD)

$T/C = 113\ K\text{-FT} / 10\ FT = 11.3^K$ (← E_v Below)

$M_R = (.6 - .14\ S_{DS})(\text{Shelter wt})(\frac{\text{width}}{2})$

$= (.6 - .14 \times .946)(80^K)(\frac{10'}{2}) = 187\ K\text{-FT}$

$M_R > M_{OT}$ ∴ No Uplift $F.S. = \frac{M_R}{M_{OT}} = \frac{187}{113} = 1.66 > 1.5$ ✓

Max Compression

$D + L_R/2 = (100.5^K + 54.0^K)/2 = 77.3^K$

$(1 + .105\ S_{DS})\frac{D}{2} + 0.75\ E_v + .75\frac{L_R}{2} = \frac{110.5}{2} + 5.7^K + \frac{40.5^K}{2} = 81.2^K$ ← Governs

$(1 + .14\ S_{DS})\ D/2 + 0.7\ E = \frac{114^K}{2} + 11.3^K = 68.3^K$

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Description	By	Date
Equip. Shelter Fdn	PDT	3/15/16
	Checked	Date
	Scale	Sheet No.
Project	Job No.	10
Bellevue Station 9	16015.902	

Foundation Bearing Pressure

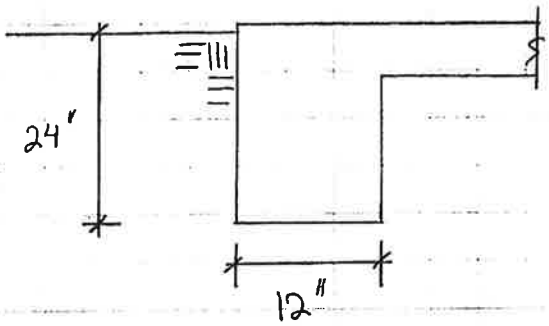
3000 psf allowable per geo tech.

$\sigma_{NET} = 3000\ psf - 150pcf(2')$

$= 2700\ psf$

1/3 increase for wind / seismic

$= 3600\ psf$



Thicken Edge Slab Section

$\sigma_{TOT} = 81.2^K / (1' \times 30') = 2710\ psf$

$\sigma_{TOT} = 2710 < \sigma_{ALLOW} = 3600$ ✓

Sliding Resistance

$\mu = 0.45$ - per Geotech, use 1/3 increase for sliding

$Resistance = 0.6D \times \mu \times 1.33 = 0.6(80.0^K)\,0.45(1.33) = 28.8^K$

↑ JUST BUILDING WEIGHT ∴ conservative

$F_{RESIST} = 28.8^K > 0.7\,F_{EQ} = 21.8^K$ (OK)

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		Checked	Date
		Scale	Sheet No. 11
	Project: Bellevue Station 9	Job No. 16015.902	

Equipment
Shelter Foundation

As, min per ACI 7.6.1.1

$A_s = 0.0018(12" \times 24") = 0.52 in^2 \Rightarrow$ Use (4)#4 bars, $A_s = 0.8 in^2$

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		Checked	Date
		Scale	Sheet No. 12
	Project Bellevue Station 9	Job No. 16015,902	

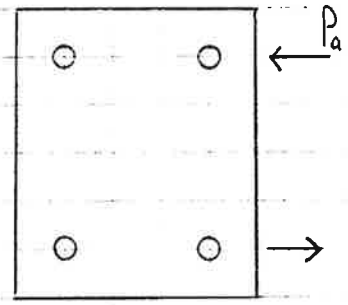
Equip. Building Fdn Anchorage

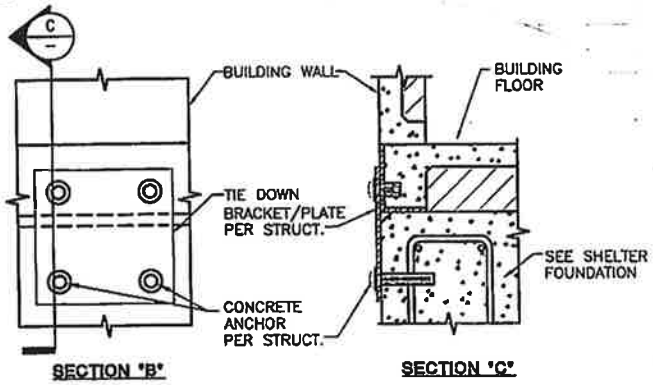
$F_{EQ} = 31.2^{K}_{ULT}, 21.8^{K}_{ASD}$

Per arch. detail, there are (4) anchorage points, w/ (2) anchors each point.

Plate Check - check shear

Plate Force = $\frac{21.8^{K}}{4} = 5.5^{K}$





NOTES:

1. TIE DOWN BRACKET/PLATE BY SHELTER MANUFACTURER.
2. SEE STRUCTURAL DETAILS FOR ATTACHMENT TO CONC. SLAB.

4 SHELTER ATTACHMENT DETAIL
NOT TO SCALE

$F_u = 58$ KSI $F_y = 36$ KSI,

Assume: PL 8" x 12" x 1/4", $A_g = 8" \times 1/4" = 2 si$, $A_n = [8" - [2(1/16 + 3/8)]] \times 1/4" = 1.78 si$

$.4 F_y A_g \leq .3 F_u A_n \Rightarrow .4(36ksi)(2si) \leq .3(58ksi)(1.78si) \Rightarrow$

$28.8^{K} \leq 30.9^{K} \Rightarrow$ Use 28.8^{K} max shear strength

Try a PL 6 x 8 x 1/4 @ (4) places, min.

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		Scale	Sheet No.: 13
	Project: Bellevue Station 9	Job No.: 16015.902	

Plate Check - Cont'd.

$V_u = 5.5^K$

$A_g = 6" \times 1/4" = 1.5 \text{ si}$, $A_n = [6" - 2(1/16 + 3/8)] \times 1/4" = 1.28 \text{ si}$

$0.4(36 \text{ ksi})(1.5 \text{ si}) \leq 0.3(58 \text{ ksi})(1.28 \text{ si}) \Rightarrow 21.6^K \leq 22.3^K$

$\frac{V_n}{\Omega} = \frac{21.6^K}{1.67} = 12.9^K > V_a = 5.5^K$ ✓

PL 6 x 8 x 1/4 Good in Shear

Plate Anchorage

$V_u = 31.2^K_{ULT} / 4$ anchor points $= 7.8^K$

Use (2) KBTZ - SS 304 3/4"ø w/ 4.75" embed,
see Hilti print out

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		Checked	Date
		Scale	Sheet No.: 14
	Project: Bellevue Station 9	Job No.: 16015.902	

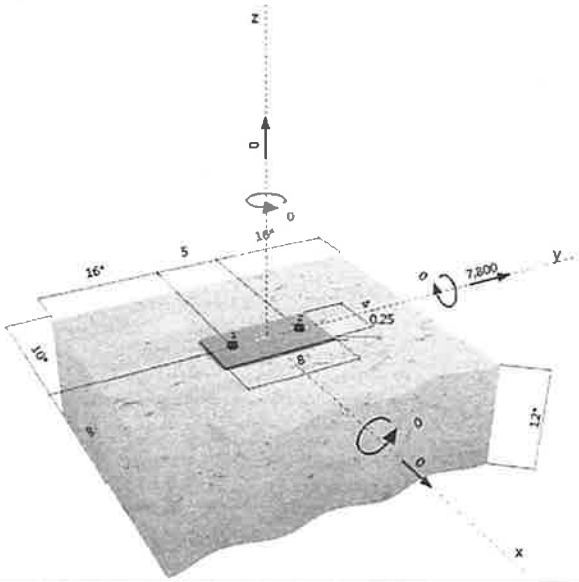
Company:	CG Engineering	Page:	1
Specifier:	Peter Tassani	Project:	Bellevue Station 9
Address:	250 4th Ave S Suite 200	Sub-Project I Pos. No.:	
Phone I Fax:	425 778 8500 |	Date:	7/11/2016
E-Mail:	petert@cgengineering.com		

Specifier's comments:

1 Input data

Anchor type and diameter:	Kwik Bolt TZ - SS 304 3/4 (4 3/4)
Effective embedment depth:	$h_{ef,act}$ = 4.750 in., h_{nom} = 5.563 in.
Material:	AISI 304
Evaluation Service Report:	ESR-1917
Issued I Valid:	2/22/2016 | 5/1/2017
Proof:	Design method ACI 318-14 / Mech.
Stand-off installation:	e_b = 0.000 in. (no stand-off); t = 0.250 in
Anchor plate:	l_x x l_y x t = 4.000 in. x 8.000 in. x 0.250 in.; (Recommended plate thickness: not calculated
Profile:	no profile
Base material:	cracked concrete, 2500, f_c' = 2500 psi; h = 12.000 in.
Installation:	**hammer drilled hole, Installation condition: Dry**
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: none or < No. 4 bar

Geometry [in.] & Loading [lb, in.lb]



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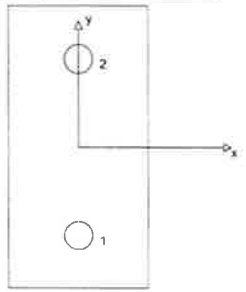
E-Mail:	petert@cgengineering.com		

2 Load case/Resulting anchor forces

Load case: Design loads



Anchor reactions [lb]
Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	0	3900	0	3900
2	0	3900	0	3900

max. concrete compressive strain: - [‰]
max. concrete compressive stress: - [psi]
resulting tension force in (x/y)=(0.000/0.000): 0 [lb]
resulting compression force in (x/y)=(0.000/0.000): 0 [lb]

3 Tension load

	Load N_{ua} [lb]	Capacity ϕN_n [lb]	Utilization $\beta_N = N_{ua}/\phi N_n$	Status
Steel Strength*	N/A	N/A	N/A	N/A
Pullout Strength*	N/A	N/A	N/A	N/A
Concrete Breakout Strength**	N/A	N/A	N/A	N/A

* anchor having the highest loading **anchor group (anchors in tension)

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4 Shear load

	Load V_{ua} [lb]	Capacity ϕV_n [lb]	Utilization $\beta_V = V_{ua}/\phi V_n$	Status
Steel Strength*	3900	10212	39	OK
Steel failure (with lever arm)*	N/A	N/A	N/A	N/A
Pryout Strength**	7800	16842	47	OK
Concrete edge failure in direction y+**	7800	8117	97	OK

* anchor having the highest loading **anchor group (relevant anchors)

4.1 Steel Strength

V_{sa} = ESR value — refer to ICC-ES ESR-1917
$\phi V_{steel} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

Variables

$A_{se,V}$ [in.²]	f_{uta} [psi]
0.24	101500

Calculations

V_{sa} [lb]
15711

Results

V_{sa} [lb]	ϕ_{steel}	ϕV_{sa} [lb]	V_{ua} [lb]
15711	0.650	10212	3900

4.2 Pryout Strength

$V_{cpg} = k_{cp}\left[\left(\frac{A_{Nc}}{A_{Nco}}\right)\psi_{ec,N}\psi_{ed,N}\psi_{c,N}\psi_{cp,N}N_b\right]$ — ACI 318-14 Eq. (17.5.3.1b)

$\phi V_{cpg} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

A_{Nc} = see ACI 318-14, Section 17.4.2.1, Fig. R 17.4.2.1(b)

$A_{Nco} = 9 h_{ef}^2$ — ACI 318-14 Eq. (17.4.2.1c)

$\psi_{ec,N} = \left(\frac{1}{1+\frac{2 e'_N}{3 h_{ef}}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.4)

$\psi_{ed,N} = 0.7 + 0.3\left(\frac{c_{a,min}}{1.5 h_{ef}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.5b)

$\psi_{cp,N} = MAX\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5 h_{ef}}{c_{ac}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.7b)

$N_b = k_c \lambda_a \sqrt{f'_c}\, h_{ef}^{1.5}$ — ACI 318-14 Eq. (17.4.2.2a)

Variables

k_{cp}	h_{ef} [in.]	$c_{a1,N}$ [in.]	$c_{a2,N}$ [in.]	$c_{a,max}$ [in.]
2	4.750	0.000	0.000	10.000

$\psi_{c,N}$	c_{ac} [in.]	k_c	λ_a	f'_c [psi]
1.000	9.000	17	1.000	2500

Calculations

A_{Nc} [in.²]	A_{Nco} [in.²]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
274.31	203.06	1.000	1.000	1.000	1.000	8800

Results

V_{cpg} [lb]	$\phi_{concrete}$	ϕV_{cpg} [lb]	V_{ua} [lb]
23774	0.700	16642	7800

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4.3 Concrete edge failure in direction y+

$V_{cbg} = \left(\frac{A_{Vc}}{A_{Vco}}\right)\psi_{ec,V}\psi_{ed,V}\psi_{c,V}\psi_{h,V}\psi_{parallel,V}V_b$ — ACI 318-14 Eq. (17.5.2.1b)

$\phi V_{cbg} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

A_{Vc} = see ACI 318-14, Section 17.5.2.1, Fig. R 17.5.2.1(b)

$A_{Vco} = 4.5 c_{a1}^2$ — ACI 318-14 Eq. (17.5.2.1c)

$\psi_{ec,V} = \left(\frac{1}{1+\frac{2e'_V}{3c_{a1}}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.5.2.5)

$\psi_{ed,V} = 0.7 + 0.3\left(\frac{c_{a2}}{1.5c_{a1}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.5.2.6b)

$\psi_{h,V} = \sqrt{\frac{1.5c_{a1}}{h_a}} \geq 1.0$ — ACI 318-14 Eq. (17.5.2.8)

$V_b = \left(7\left(\frac{l_e}{d_a}\right)^{0.2}\sqrt{d_a}\right)\lambda_a\sqrt{f'_c}\,c_{a1}^{1.5}$ — ACI 318-14 Eq. (17.5.2.2a)

Variables

c_{a1} [in.]	c_{a2} [in.]	c_{ov} [in.]	$\psi_{c,V}$	h_a [in.]
16.000	10.000	0.000	1.000	12.000

l_e [in.]	λ_a	d_a [in.]	f'_c [psi]	$\psi_{parallel,V}$
4.750	1.000	0.750	2500	1.000

Calculations

A_{Vc} [in.²]	A_{Vco} [in.²]	$\psi_{ec,V}$	$\psi_{ed,V}$	$\psi_{h,V}$	V_b [lb]
408.00	1152.00	1.000	0.825	1.414	26051

Results

V_{cbg} [lb]	$\phi_{concrete}$	ϕV_{cbg} [lb]	V_{ua} [lb]
11595	0.700	8117	7800

5 Warnings

- Load re-distributions on the anchors due to elastic deformations of the anchor plate are not considered. The anchor plate is assumed to be sufficiently stiff, in order not to be deformed when subjected to the loading! Input data and results must be checked for agreement with the existing conditions and for plausibility!
- Condition A applies when supplementary reinforcement is used. The Φ factor is increased for non-steel Design Strengths except Pullout Strength and Pryout strength. Condition B applies when supplementary reinforcement is not used and for Pullout Strength and Pryout Strength. Refer to your local standard.
- Refer to the manufacturer's product literature for cleaning and installation instructions.
- Checking the transfer of loads into the base material and the shear resistance are required in accordance with ACI 318 or the relevant standard!
- Hilti post-installed anchors shall be installed in accordance with the Hilti Manufacturer's Printed Installation Instructions (MPII). Reference ACI 318-14, Section 17.8.1.

Fastening meets the design criteria!

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Specifier:	Peter Tassani	Project:	Bellevue Station 9
Address:	250 4th Ave S Suite 200	Sub-Project I Pos. No.:	
Phone I Fax:	425.778.8500 |	Date:	7/11/2018
E-Mail:	petert@cgengineering.com		

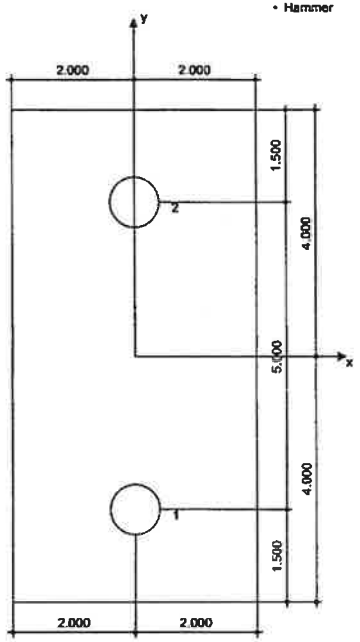
6 Installation data

Anchor plate, steel: -
Profile: no profile
Hole diameter in the fixture: d_f = 0.813 in.
Plate thickness (input): 0.250 in.
Recommended plate thickness: not calculated
Drilling method: Hammer drilled
Cleaning: Manual cleaning of the drilled hole according to instructions for use is required.

Anchor type and diameter: Kwik Bolt TZ - SS 304 3/4 (4 3/4)
Installation torque: 1320.002 in.lb
Hole diameter in the base material: 0.750 in.
Hole depth in the base material: 5.750 in.
Minimum thickness of the base material: 8.000 in.

6.1 Recommended accessories

Drilling	Cleaning	Setting
• Suitable Rotary Hammer	• Manual blow-out pump	• Torque wrench
• Properly sized drill bit		• Hammer



Coordinates Anchor in.

Anchor	x	y	c_x	$c_{x,2}$	c_y	c_{cr}
1	0.000	-2.500	10.000	-	16.000	21.000
2	0.000	2.500	10.000	-	21.000	16.000

Company:	CG Engineering	Page:	6
Specifier:	Peter Tassani	Project:	Bellevue Station 9
Address:	250 4th Ave S Suite 200	Sub-Project I Pos. No.:	
Phone I Fax:	425.778.8500 |	Date:	7/11/2018
E-Mail:	petert@cgengineering.com		

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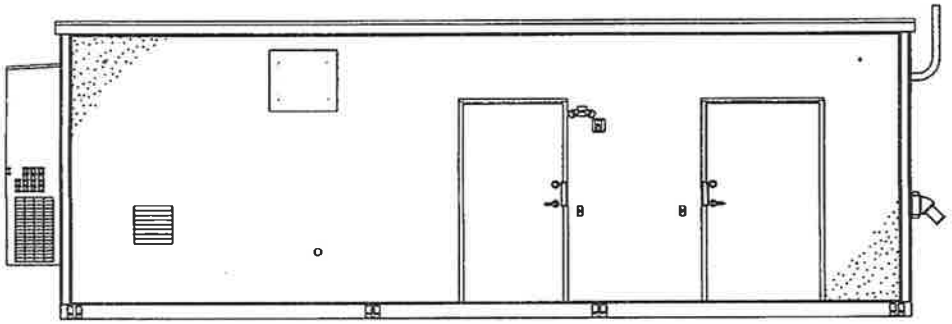
KING COUNTY, WA
11'-8" X 30'-0" SHELTER



TO BE BUILT AT THE: THERMOBOND
ELKHART PLANT
58120 COUNTY ROAD 3
ELKHART, IN 46517
PHONE: (574) 295-1214

DRAWING INDEX

SHEET	DESCRIPTION	REV 1	REV 2	REV 3	REV 4	REV 5	REV 6
C	COVER						
C2	MATERIALS LIST						
A1	FLOOR PLAN						
A2	ELEVATIONS						
E	ELECTRICAL SCHEMATIC						
E1	ALARM DIAGRAM						
E2	GROUNDING LAYOUT						
E2.1	GROUNDING DETAILS						
E3	ELECTRICAL UPGRADE OPTIONS						
S4	CROSS SECTION						
T2	INSTALL DETAILS						

RELEASE DATES

STATUS	RELEASED TO	BY	DATE

STATUS -> PA = PRELIMINARY REVIEW A = APPROVAL
RELEASED -> F=FINAL R=REVISED PR=PRODUCTION C=CUSTOMER S=STATE/THIRD PARTY

REVISIONS

REV	DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			
7			

WASHINGTON

OCCUPANT LOAD: 0
CONSTRUCTION TYPE: VB
USE GROUP: U

CODES:

2012 INTERNATIONAL BUILDING CODE WITH STATE AMENDMENTS
2012 INTERNATIONAL MECHANICAL CODE WITH STATE AMENDMENTS
2014 NATIONAL ELECTRICAL CODE WITH STATE AMENDMENTS
2012 WASHINGTON STATE ENERGY CODE

SPECIAL CONDITIONS / LIMITATIONS

1. THIS STRUCTURE IS NOT DESIGNED FOR INSTALLATION IN A FLOOD HAZARD AREA.
2. THIS STRUCTURE IS NOT DESIGNED FOR HUMAN OCCUPANCY EXCEPT FOR SHORT TYPE PERIODS FOR EQUIPMENT MAINTENANCE.
3. THERMOBOND WILL NOT BE RESPONSIBLE FOR INSTALLATION OF ANY SPRINKLER SYSTEM, WHICH MAY BE REQUIRED BY LOCAL BUILDING OFFICIAL.
4. THERMOBOND WILL NOT BE RESPONSIBLE FOR ANY ANTENNA INSTALLATION ASSOCIATED WITH THIS BUILDING.
5. THIS BUILDING SHALL NOT BE LOCATED AT A SITE THAT EXCEEDS THE LISTED DESIGN LOADS.
7. IF BATTERIES W/ AN ELECTROLYTE CAPACITY OF MORE THAN 50 GAL. ARE TO BE INSTALLED IN THIS BUILDING, ONE OF THE FOLLOWING MUST BE INSTALLED BY OTHERS ON SITE.
   a. AN EXHAUST FAN W/ A HYDROGEN LIMIT SWITCH SO THAT TO LIMIT THE HYDROGEN TO 1% OF THE TOTAL VOLUME OF THE ROOM.
   b. CONTINUOUS VENTILATION SHALL BE PROVIDED AT A RATE NOT LESS THAN 1 CU.FT. PER MINUTE PER SQ.FT. OF FLOOR AREA OF THE ROOM.

DESIGN LOADS

OCCUPANCY TYPE (RISK CAT.)= IV
FLOOR LIVE LOAD: 300 psf
ROOF LIVE LOAD: 150 psf

Pf = (0.7) * (Ce) * (I) * (Ct) * (Pg)

EXPOSURE FACTOR	Ce = 1.0
IMPORTANCE FACTOR	I = 1.20
THERMAL FACTOR	Ct = 1.0
GROUND SNOW LOAD	Pg = 60

WIND DESIGN

WIND SPEED: 150 MPH 3 SECOND GUST
EXPOSURE: D
α = 3/5
GCpi = ± 0.18 (FOR ASCE 7)

SHIPPING WEIGHT: 83,000 LBS
BUILDING FOOT PRINT: 350 SQ. FT

STAMPS AND SEALS

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THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN. 46517
Phone: 800-423-2559, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER
COVER

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

DATE: 4/21/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE = 2006: NONE
SHEET: C1

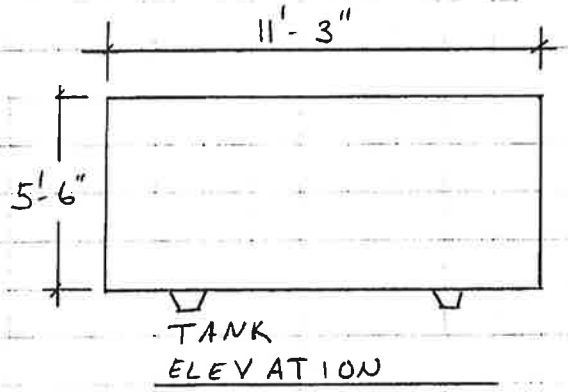
Diesel Storage Tank Foundation Design

Empty Tank Wt = 18 kips + 1.8^{K} (misc) = 19.8^{K}

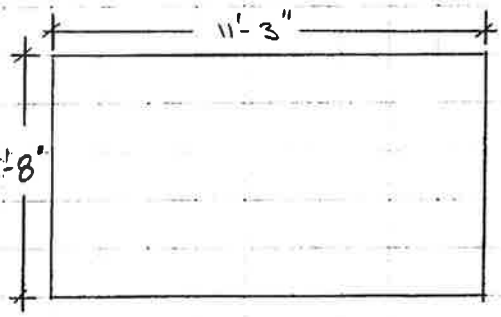
Fuel Wt = 1000 gal. x 7.5 #/gal

= 7.5 kips

Total Wt = 27.3 kips



TANK ELEVATION



TANK PLAN

Wind $_{ULT.}$ = (21.0 psf)(11.25' x 8.0')

= 1.9^{K} < Worst case wind is still less than EQ below

Seismic - Ref. ASCE Ch. 15.7.6.1.a - Tank and Vessels

Ref. procedure of section 15.4.2

$V = 0.30 S_{DS} W I_e$ (EQ. 15.4-5)

$S_{DS} = 0.946$, $I_e = 1.5$

$V_{ULT} = 0.30(0.946)(27.3^{K})(1.5) = 11.6^{K}$ < Governs

C.G ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020 425.778.8500 www.cgengineering.com	Description: Diesel Tank Fdn Design	By: PDT	Date: 3/14/16
		Checked	Date
		Scale	Sheet No.: 19
	Project: Bellevue Station 9	Job No.: 16015.902.2	

Tank Foundation

Soil Bearing - 3 KSF Allowable

$P_a = 27.3^K + 150\ pcf\ (.5' \times 11.25' \times 5.67') = 32.1^K = Q$

conc. self weight

$V_a = 11.6^K \times 0.7_{ASD} = 8.12$, $M_a = \frac{ft}{2} \times V_a = \frac{5.5'}{2} \times 8.12^K = 22.33 K\text{-}Ft$

$e = \frac{M}{Q} = \frac{22.3\ K\text{-}FT}{32.1\ K} = 0.69 ft$, $B = 5.67'$, $L = 11.25'$

$\frac{B}{6} = 0.945 > e$ ∴ e is within the kern

$q_{max} = \frac{Q}{BL}\left(1 + \frac{6e}{B}\right) = \frac{32.1^K}{(5.67' \times 11.25')}\left[1 + \left(\frac{6 \times 0.7'}{5.67'}\right)\right] = 0.503\left[1.74\right] \Rightarrow$

$= 0.875\ ksf < 3\ ksf$ ∴ Soil bearing is good

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		Checked	Date
		Scale	Sheet No.: 20
	Project: Bellevue Station 9	Job No.: 16015.902	

Tank Foundation – Cont'd.

Sliding - $\mu = 0.45$, use 1/3 increase

$F_{EQ} = 11.6^{K} \times .7_{\text{ASD Factor}} = 8.12^{K}$

$F_R = .6_{\text{ASD Factor}} \times D \times .45 \times 4/3 = .6 \times 22.8^{K}_{\text{tank+ Conc.}} \times .45 \times 4/3 = 8.2^{K}$

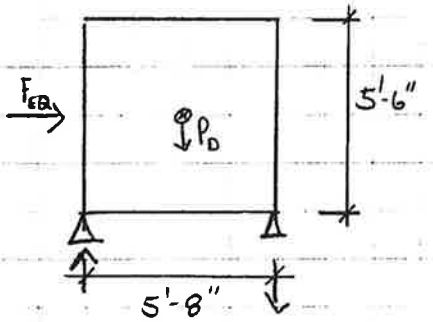
$F_R = 8.2^{K} > F_{EQ} = 8.1^{K}$ (OK)

Overturning Checks

$M_{OT} = F_{EQ} \times {}^{H}/_{2} = (.7)_{\text{ASD}} 11.6^{K} \times 2.75^{FT} = 22.3^{K\text{-}FT}$

$M_R = P_D \times {}^{D}/_{2} = (.6)_{\text{ASD}} (18^{K})(2.8^{Ft}) = 30.2^{K\text{-}FT}$

$\frac{M_R}{M_{OT}} = \frac{30.2}{22.3} = 1.35 > 1.0$ (OK)



No net uplift ∴ just supply slide restraints.

Use an 8" matt Foundation w/ #4's @ 12" O.C. E.W. Centered.

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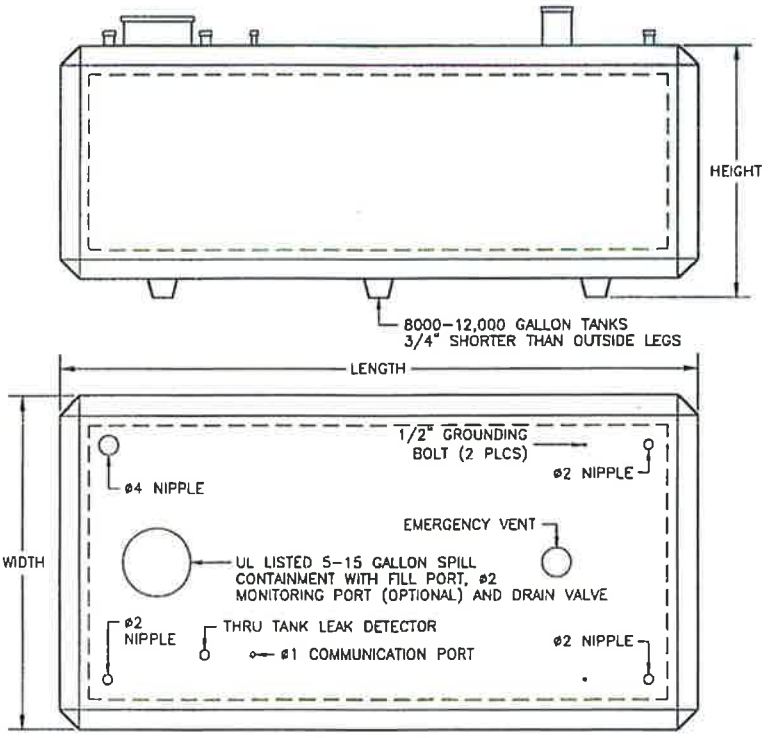
		Checked	Date
		Scale	Sheet No.: 21
	Project: Bellevue Station 9	Job No.: 16015.902	

Figure No. 2
Tank Weights and Dimensions *
Single Primary Tank



SIZE	LENGTH	WIDTH	HEIGHT	WEIGHT
125	4' – 1"	4' – 1"	3' – 11"	6,000
250	7' – 8"	3' – 9"	3' – 3"	8,000
500	11' – 0"	4' – 6"	3' – 4"	12,000
1000	11' – 0"	5' – 8"	4' – 4"	18,000
2000	11' – 3"	8' – 0"	5' – 6"	30,000
3000 LP (Low Profile)	11' – 3"	8' – 0"	7' – 3"	35,500
4000 LP (Low Profile)	17' – 7"	8' – 0"	6' – 5"	45,000
4000 DW	12' – 2"	8' – 0"	8' – 9"	40,000
5200 G (General)	15' – 6"	8' – 0"	8' – 9"	47,000
6000	17' – 7"	8' – 0"	8' – 9"	59,000
8000	23' – 1"	8' – 0"	8' – 9"	72,000
10000	28' – 7"	8' – 0"	8' – 9"	87,500
12000	34' – 1"	8' – 0"	8' – 9"	101,000

- The above sizes are typical, however some plants may not offer all tank sizes listed above. For additional sizes, or specific needs in your area, refer to your Convault® distributor/salesman.
- Double-wall steel tanks are optional and external dimensions are identical to single wall tank.
- Nipple layout and designs vary according to customer needs.

* NOTE: These are nominal weights of the tanks. Check with your distributor/salesperson for accurate weights.

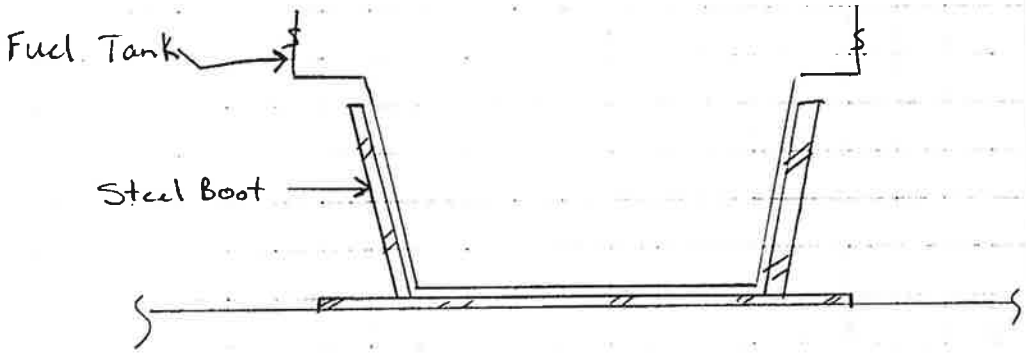
Diesel Tank Anchorage

Base shear = 11.6 $^{K}_{ULT}$ = V_u, $V_a = 11.6 \times .7_{ASD} = 8.12^{K}$

The tank is anchored at (4) points.

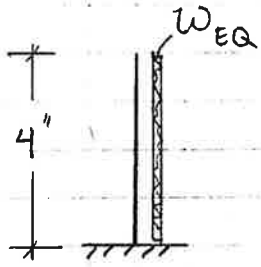
$V_a = 8.12^{K} / 4 = 2.0^{K}$

The tank legs will sit in a steel boot which will be anchored to the slab.



SECTION

Cantilevered plate resists the sliding force.



$M_a = wl^2/2 = \left(\frac{2.0^{K}}{4"}\right)(4")^2/2$

$= 4.0$ K-in

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		Checked	Date
		Scale	Sheet No.: 23
	Project: Bellevue Station 9	Job No.: 16015.902	

Diesel Tank Anchorage - cont'd.

$M = 4.0$ k-in

Assume plate is 4" x 10" x 1/4"

$b = 10"$, $d = 1/4"$

$Z_x = bd^2/4 = 10" \times (1/4")^2/4 = 0.15625$ ci

$f_y = 36$ ksi $/ 1.67 = 21.6$ ksi

$f_b = \frac{M_a}{Z_x} = \frac{4.0 \text{ k-in}}{0.15625 \text{ ci}} = 25.6$ ksi $> f_y/\Omega$ ∴ No good

try a 3/8" thick plate

$Z_x = 10" \times (3/8")^2/4 = 0.351$ ci

$f_b = 4.0$ k-in $/ 0.351$ ci $= 11.39$ ksi $< f_y/\Omega = 21.6$ ksi - OK

Plate Weld - Per AISC EQ 8-2b

l = length, in., D = weld size, in sixteenths of an inch

$F_{EXX} = 70$ ksi, $\Omega = 2.00$

$\frac{R_n}{\Omega} = 0.928 D l = 0.928(3)(10) = 27.84^K \gg V_a = 2.0^K$

Concrete Anchors - (2) anchors per boot to resist $V_{ULT} = 2.9^K$

Use (2) KBTZ - SS 304 3/4" w/3 3/4" EMBEDMENT

See HILTI report NOTE: (4) used conservatively

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		Checked	Date
		Scale	Sheet No.: 24
	Project: Bellevue Station 9	Job No.: 16015.902	

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Project: Bellevue Station 9
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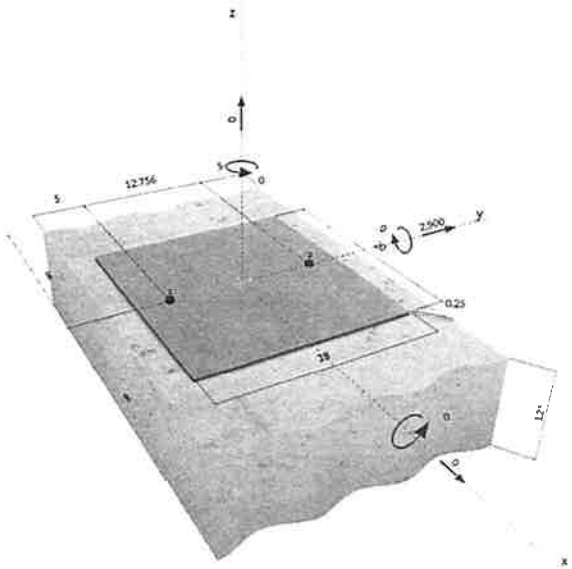
Date: 7/11/2016

Specifier's comments:

1 Input data

Anchor type and diameter:	Kwik Bolt TZ - SS 304 3/4 (3 3/4)
Effective embedment depth:	$h_{ef,act}$ = 3.750 in., h_{nom} = 4 313 in.
Material:	AISI 304
Evaluation Service Report:	ESR-1917
Issued I Valid:	2/22/2016 | 5/1/2017
Proof:	Design method ACI 318-14 / Mech.
Stand-off installation:	e_b = 0 000 in. (no stand-off); t = 0 250 in
Anchor plate:	l_x x l_y x t = 20.000 in. x 18 000 in. x 0.250 in.; (Recommended plate thickness: not calculated
Profile:	no profile
Base material:	cracked concrete, 2500, f_c' = 2500 psi; h = 12.000 in.
Installation:	**hammer drilled hole, installation condition: Dry**
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: none or < No. 4 bar

Geometry [in.] & Loading [lb, in.lb]



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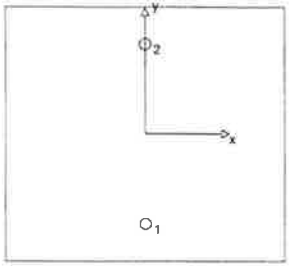
2 Load case/Resulting anchor forces

Load case: Design loads



Anchor reactions [lb]
Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	0	1450	0	1450
2	0	1450	0	1450

max. concrete compressive strain: - [‰]
max. concrete compressive stress: - [psi]
resulting tension force in (x/y)=(0.000/0.000): 0 [lb]
resulting compression force in (x/y)=(0.000/0.000): 0 [lb]

3 Tension load

	Load N_{ua} [lb]	Capacity ϕN_n [lb]	Utilization $\beta_N = N_{ua}/\phi N_n$	Status
Steel Strength*	N/A	N/A	N/A	N/A
Pullout Strength*	N/A	N/A	N/A	N/A
Concrete Breakout Strength**	N/A	N/A	N/A	N/A

* anchor having the highest loading **anchor group (anchors in tension)

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E-Mail:	petert@cgengineering.com		

4 Shear load

	Load V_{ua} [lb]	Capacity ϕV_n [lb]	Utilization $\beta_V = V_{ua}/\phi V_n$	Status
Steel Strength*	1450	10212	15	OK
Steel failure (with lever arm)*	N/A	N/A	N/A	N/A
Pryout Strength**	2900	22276	14	OK
Concrete edge failure in direction y+**	2900	3273	89	OK

* anchor having the highest loading **anchor group (relevant anchors)

4.1 Steel Strength

V_{sa} = ESR value — refer to ICC-ES ESR-1917
ii) $V_{steel} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

Variables

$A_{se,V}$ [in.²]	f_{uta} [psi]
0.24	101500

Calculations

V_{sa} [lb]
15711

Results

V_{sa} [lb]	ϕ_{steel}	ϕV_{sa} [lb]	V_{ua} [lb]
15711	0.650	10212	1450

4.2 Pryout Strength

$V_{cpg} = k_{cp}\left[\left(\frac{A_{Nc}}{A_{Nc0}}\right)\psi_{ec,N}\,\psi_{ed,N}\,\psi_{cN}\,\psi_{cp,N}\,N_b\right]$ — ACI 318-14 Eq. (17.5.3.1b)

$\phi V_{cpg} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

A_{Nc} see ACI 318-14, Section 17.4.2.1, Fig R 17.4.2.1(b)

$A_{Nc0} = 9 h_{ef}^2$ — ACI 318-14 Eq. (17.4.2.1c)

$\psi_{ec,N} = \left(\frac{1}{1+\frac{2\,e'_N}{3\,h_{ef}}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.4)

$\psi_{ed,N} = 0.7 + 0.3\left(\frac{c_{a,min}}{1.5h_{ef}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.5b)

$\psi_{cp,N} = MAX\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5h_{ef}}{c_{ac}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.4.2.7b)

$N_b = k_c\,\lambda_a\sqrt{f'_c}\,h_{ef}^{1.5}$ — ACI 318-14 Eq. (17.4.2.2a)

Variables

k_{cp}	h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]
2	3.750	0.000	0.000	5.000

$\psi_{c,N}$	c_{ac} [in.]	k_c	λ_a	f'_c [psi]
1.000	7.000	24	1.000	2500

Calculations

A_{Nc} [in.²]	A_{Nc0} [in.²]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
239.06	126.56	1.000	1.000	0.967	1.000	9714

Results

V_{cpg} [lb]	$\phi_{concrete}$	ϕV_{cpg} [lb]	V_{ua} [lb]
31823	0.700	22278	2900

PROFIS Anchor (c) 2003-2009 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

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E-Mail:	petert@cgengineering.com		

4.3 Concrete edge failure in direction y+

$V_{cbg} = \left(\frac{A_{Vc}}{A_{Vc0}}\right)\psi_{ec,V}\,\psi_{ed,V}\,\psi_{c,V}\,\psi_{h,V}\,\psi_{parallel,V}\,V_b$ — ACI 318-14 Eq. (17.5.2.1b)

$\phi V_{cbg} \geq V_{ua}$ — ACI 318-14 Table 17.3.1.1

A_{Vc} see ACI 318-14, Section 17.5.2.1, Fig R 17.5.2.1(b)

$A_{Vc0} = 4.5\,c_{a1}^2$ — ACI 318-14 Eq. (17.5.2.1c)

$\psi_{ec,V} = \left(\frac{1}{1+\frac{2e_v}{3c_{a1}}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.5.2.5)

$\psi_{ed,V} = 0.7 + 0.3\left(\frac{c_{a2}}{1.5c_{a1}}\right) \leq 1.0$ — ACI 318-14 Eq. (17.5.2.6b)

$\psi_{h,V} = \sqrt{\frac{1.5c_{a1}}{h_a}} \geq 1.0$ — ACI 318-14 Eq. (17.5.2.8)

$V_b = \left(7\left(\frac{l_e}{d_a}\right)^{0.2}\sqrt{d_a}\right)\lambda_a\sqrt{f'_c}\,c_{a1}^{1.5}$ — ACI 318-14 Eq. (17.5.2.2a)

Variables

c_{a1} [in.]	c_{a2} [in.]	e_{cV} [in.]	$\psi_{c,V}$	h_a [in.]
5.000	-	0.000	1.000	12.000

l_e [in.]	λ_a	d_a [in.]	f'_c [psi]	$\psi_{parallel,V}$
3.750	1.000	0.750	2500	1.000

Calculations

A_{Vc} [in.²]	A_{Vc0} [in.²]	$\psi_{ec,V}$	$\psi_{ed,V}$	$\psi_{h,V}$	V_b [lb]
112.50	112.50	1.000	1.000	1.000	4678

Results

V_{cbg} [lb]	$\phi_{concrete}$	ϕV_{cbg} [lb]	V_{ua} [lb]
4678	0.700	3273	2900

5 Warnings

- Load re-distributions on the anchors due to elastic deformations of the anchor plate are not considered. The anchor plate is assumed to be sufficiently stiff, in order not to be deformed when subjected to the loading! Input data and results must be checked for agreement with the existing conditions and for plausibility!
- Condition A applies when supplementary reinforcement is used. The Φ factor is increased for non-steel Design Strengths except Pullout Strength and Pryout strength. Condition B applies when supplementary reinforcement is not used and for Pullout Strength and Pryout Strength. Refer to your local standard.
- Refer to the manufacturer's product literature for cleaning and installation instructions.
- Checking the transfer of loads into the base material and the shear resistance are required in accordance with ACI 318 or the relevant standard!
- Hilti post-installed anchors shall be installed in accordance with the Hilti Manufacturer's Printed Installation Instructions (MPII). Reference ACI 318-14, Section 17.8.1.

Fastening meets the design criteria!

PROFIS Anchor (c) 2003-2009 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Company:	CG Engineering	Page:	5
Specifier:	Peter Tassani	Project:	Bellevue Station 9
Address:	250 4th Ave S Suite 200	Sub-Project I Pos. No.:	
Phone I Fax:	425.778.8500 I	Date:	7/11/2016
E-Mail:	petert@cgengineering.com		

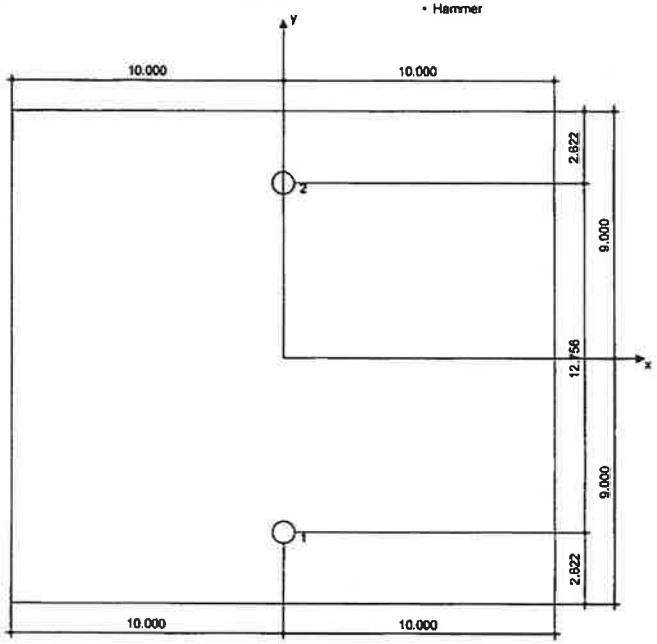
6 Installation data

Anchor plate, steel: -
Profile: no profile
Hole diameter in the fixture: d_f = 0.813 in.
Plate thickness (input): 0.250 in
Recommended plate thickness: not calculated
Drilling method: Hammer drilled
Cleaning: Manual cleaning of the drilled hole according to instructions for use is required.

Anchor type and diameter: Kwik Bolt TZ - SS 304 3/4 (3 3/4)
Installation torque: 1320.002 in.lb
Hole diameter in the base material: 0.750 in.
Hole depth in the base material: 4.500 in.
Minimum thickness of the base material: 8.000 in.

6.1 Recommended accessories

Drilling	Cleaning	Setting
• Suitable Rotary Hammer	• Manual blow-out pump	• Torque wrench
• Properly sized drill bit		• Hammer



Coordinates Anchor in.

Anchor	x	y	c_{-x}	c_{+x}	c_{-y}	c_{+y}
1	0.000	-6.378	-	-	5.000	17.756
2	0.000	6.378	-	-	17.756	5.000

Company:	CG Engineering	Page:	6
Specifier:	Peter Tassani	Project:	Bellevue Station 9
Address:	250 4th Ave S Suite 200	Sub-Project I Pos. No.:	
Phone I Fax:	425.778.8500 I	Date:	7/11/2016
E-Mail:	petert@cgengineering.com		

7 Remarks; Your Cooperation Duties

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- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.

27

Wind Load Calculation for Other Structures

(Reference: 2015 IBC Section 1609 & ASCE 7-10 Chapter 29)

Wind Velocity Pressure:

Average Roof Height of Building, h (ft)	=	10	(Per Architectural Drawings)
Height of Other Structure, z (ft)	=	10	(Per Architectural Drawings)
Basic Wind Speed, V_{3s} (mph)	=	115	(ASCE Figure 26.5-1)
Exposure Category	=	B	(ASCE Section 26.7.3)
Risk Category	=	III	(IBC Table 1.5-1)
Velocity Pressure Coefficient, Kh	=	0.57	(ASCE Section 29.3.1 & Table 29.3-1)
Topographic Factor, K_{zt}	=	1.00	(ASCE Section 26.8.2 & Figure 26.8-1)
Wind Directionality Factor, K_d	=	0.85	(ASCE Section 26.6 & Table 26.6-1)
Velocity Pressure, qh (psf)	=	0.00256KhKztKdV^2	(ASCE Eq. 29.3-1)
	qh =	16.40	psf

Design Wind Load on Other Structures

Horiz Gust Effect/Force Coefficient, (GCr)	=	1.9	(ASCE Section 29.5.1)
Vert Gust Effect/Force Coefficient, (GCr)	=	1.5	(ASCE Section 29.5.1)
Projected Area Normal to the Wind, A_f or A_r (ft^2)	=	A_f or A_r	(Projected Wind Area)
Design Lateral Wind Load, F (lbs)	=	qh(GCr)Af & qh(GCr)Ar	(ASCE Eq. 29.5-2 & 29.5-3)

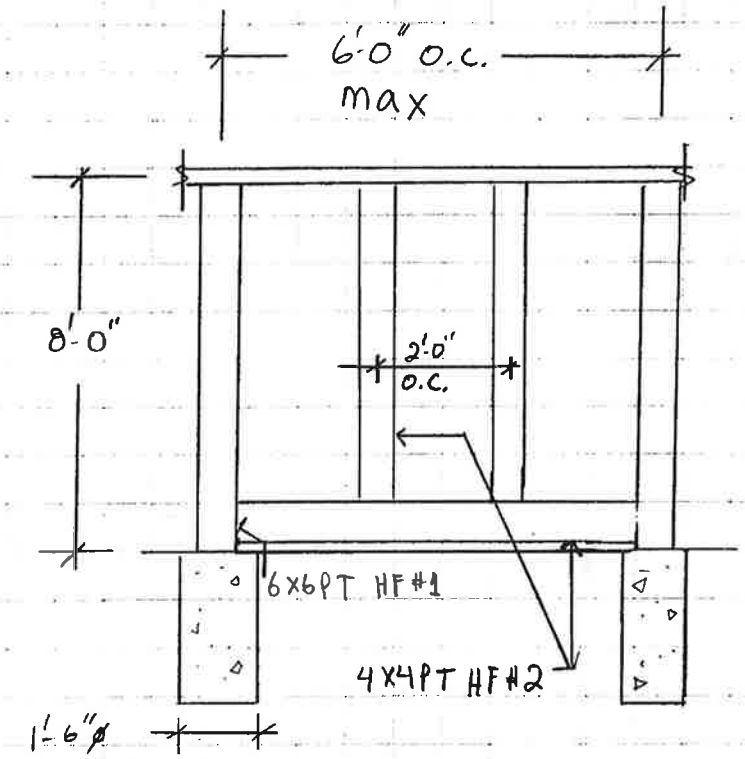
LRFD	Horiz Force, Fh =	31.2	psf x A_f
	Vert Force, Fv =	24.6	psf x Ar
ASD	Horiz Force, Fh =	18.7	psf x A_f
	Vert Force, Fv =	14.8	psf x Ar

K_z or K_h (ASCE Table 29.3-1)

Height Z (ft)	Exposure B	Exposure C	Exposure D
0	0.57	0.85	1.03
15	0.57	0.85	1.03
20	0.62	0.90	1.08
25	0.66	0.94	1.12
30	0.70	0.98	1.16
40	0.76	1.04	1.22
50	0.81	1.09	1.27
60	0.85	1.13	1.31
70	0.89	1.17	1.34
80	0.93	1.21	1.38
90	0.96	1.24	1.40
100	0.99	1.26	1.43
120	1.04	1.31	1.48
140	1.09	1.36	1.52
160	1.13	1.39	1.55
180	1.17	1.43	1.58
200	1.20	1.46	1.61

Fence Design

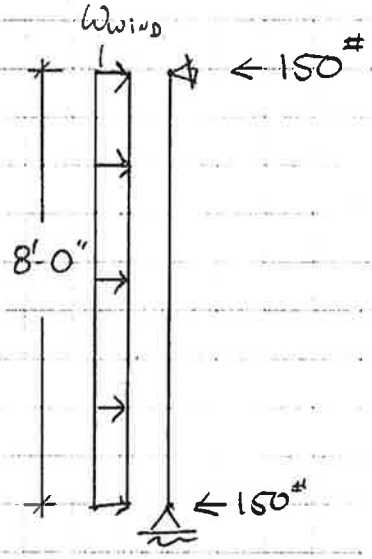
Wind forces will govern over seismic by inspection.



TYP. FENCE SECTION

4x4 PT HF#2

ω_{wind} = 18.7 PSF x 2.0' = 37.4 PLF
(2.0' ↑ spacing)



4x4 PT HF #2 is good for the proposed loads, see WoodWorks

Simpson A34 T&B good for 415# each.

Rx = 150# | A34 Good | See print out

FBD

CG ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020 425.778.8500 www.cgengineering.com	Description: Fence Design	By: PDT	Date: 3/14/16
		Checked	Date
		Scale	Sheet No.: 29
	Project: Bellevue Station 9	Job No.: 16015.902	

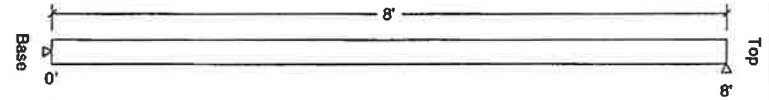
WoodWorks®	COMPANY	PROJECT
	Mar. 18, 2016 10:09	4x4

Design Check Calculation Sheet
WoodWorks Sizer 10.42

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
Load1	Wind	Full UDL				37.4		plf
Self-weight	Dead	Axial				20		lbs

Lateral Reactions (lbs):



Unfactored:			
Dead			
Wind	150		150
Factored:			
L->R	90		90
Load comb	#2		#2

4x4 Fence Member
Lumber Post, Hem-Fir, No.2, 4x4 (3-1/2"x3-1/2")
Support: Non-wood
Total length: 8'; volume = 0.7 cu.ft.;
Pinned base; Load face = width(b); Service: wet; Ke x Lb: 1.0 x 0.0 = 0.0 [ft]; Ke x Ld: 1.0 x 8.0 = 8.0 [ft];

Analysis vs. Allowable Stress and Deflection using NDS 2012 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 11	Fv' = 186	psi	fv/Fv' = 0.06
Bending(+)	fb = 301	Fb' = 1387	psi	fb/Fb' = 0.22
Axial	fc = 2	Fc' = 329	psi	fc/Fc' = 0.01
Axial Bearing	fc = 2	Fc* = 861	psi	fc/Fc* = 0.00
Combined	(axial compression + side load bending)			Eq.3.9-3 = 0.22
Live Defl'n	0.15 = L/645	0.53 = L/180	in	0.28
Total Defl'n	0.15 = L/645	0.53 = L/180	in	0.28

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL/CP	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	150	1.60	0.97	1.00	-	-	-	-	1.00	0.80	2
Fb'+	850	1.60	0.85	1.00	1.000	1.500	1.00	1.00	1.00	0.80	2
Fc'	1300	0.90	0.80	1.00	0.382	1.150	-	-	1.00	0.80	1
Fc'comb	1300	1.60	-	-	0.228	-	-	-	-	-	2
E'	1.3 million	0.90	0.90	1.00	-	-	-	-	1.00	0.95	2
Emin'	0.47 million	0.90	0.90	1.00	-	-	-	-	1.00	0.95	2
Fc*	1300	0.90	0.80	1.00	-	1.150	-	-	1.00	0.80	1

CRITICAL LOAD COMBINATIONS:
Shear : LC #2 = .6D+.6W, V = 90, V design = 90 lbs
Bending(+): LC #2 = .6D+.6W, M = 180 lbs-ft
Deflection: LC #2 = .6D+.6W (live)
LC #2 = .6D+.6W (total)
Axial : LC #1 = D only, P = 20 lbs
Combined : LC #2 = .6D+.6W; (1 - fc/FcE) = 1.00
D=dead L=live S=snow W=wind I=impact Lr=roof live Lc=concentrated E=earthquake
All LC's are listed in the Analysis output
Load combinations: ASCE 7-10 / IBC 2012

CALCULATIONS:
Deflection: EI = 16.3e06 lb-in2
"Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
Total Deflection = 1.00(Dead Load Deflection) + Live Load Deflection.

Design Notes:
1. WoodWorks analysis and design are in accordance with the ICC International Building Code (IBC 2012), the National Design Specification (NDS 2012), and NDS Design Supplement.
2. Please verify that the default deflection limits are appropriate for your application.

3C

LTP4/LTP5/A34/A35 *Framing Angles & Plates*

SIMPSON Strong-Tie

The larger LTP5 spans subfloor at the top of the blocking or rim joist. The embossments enhance performance.

The LTP4 Lateral Tie Plate transfers shear forces for top plate-to-rim joist or blocking connections. Nail holes are spaced to prevent wood splitting for single and double top plate applications. May be installed over plywood sheathing.

The A35 anchor's exclusive bending slot allows instant, accurate field bends for all two- and three-way ties. Balanced, completely reversible design permits the A35 to secure a great variety of connections.

MATERIAL: LTP4/LTP5–20 gauge; all others–18 gauge

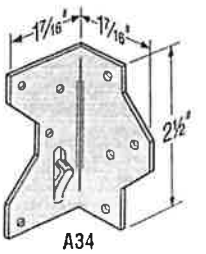
FINISH: Galvanized. Some products available in stainless steel or ZMAX® coating; see Corrosion Information, pages 13-15.

INSTALLATION: • Use all specified fasteners. See General Notes.
• A35–Bend one time only.

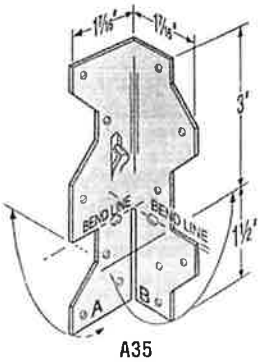
CODES: See page 12 for Code Reference Key Chart.

These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

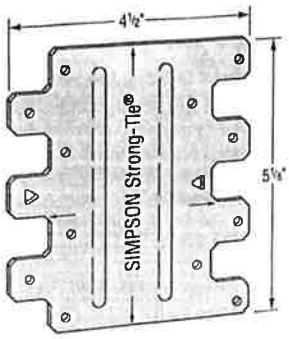
These products are approved for installation with the Strong-Drive® SD Connector screw. See page 27 for more information.



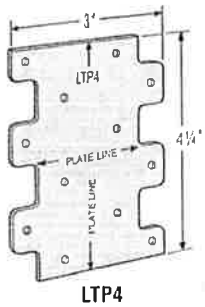
A34



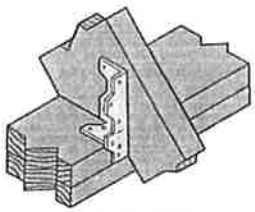
A35

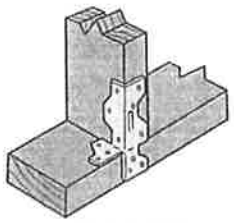


LTP5



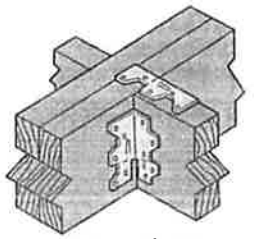
LTP4

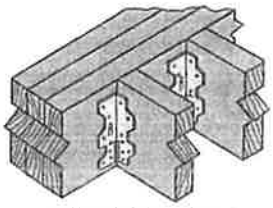

Joists to Plate with A Leg Inside

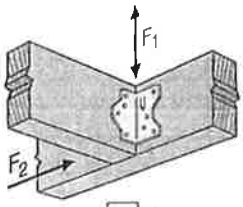

Studs to Plate with B Leg Outside

	Model No.	Type of Connection	Fasteners	Direction of Load	DF/SP Allowable Loads Floor (100)	DF/SP Roof (125)	DF/SP (160)	SPF/HF Allowable Loads Floor (100)	SPF/HF Roof (125)	SPF/HF (160)	Code Ref.
■	A34	1	8-8dx1½	F_1	395	485	515	340	415	445	IP1, L5, L18, F13
				F_2[5]	395	455	455	340	390	390	
◤	A35	2	9-8dx1½	A_1, E	295	365	395	255	315	340	
				C_1	210	210	210	180	180	180	
■		3	12-8dx1½	A_2	295	365	380	255	315	325	
				C_2	295	365	370	255	315	320	
				D	230	230	230	200	200	200	
		4	12-8dx1½	F_1	595	695	695	510	600	600	
				F_2[5]	595	670	670	510	575	575	
■	LTP4	5	12-8dx1½	G	580	670	670	500	570	575	I14, L5, F13
				H	580	600	600	500	515	515	
	LTP5	6	12-8dx1½	G	580	620	620	500	535	535	IP1, L18, F25
				H	545	545	545	470	470	470	

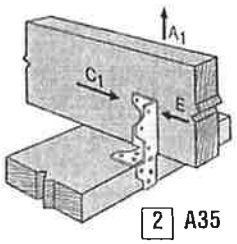
1. Allowable loads are for one anchor. When anchors are installed on each side of the joist, the minimum joist thickness is 3".
2. Some illustrations show connections that could cause cross-grain tension or bending of the wood during loading if not reinforced sufficiently. In this case, mechanical reinforcement should be considered.
3. LTP4 can be installed over ⅜" wood structural panel sheathing with 8dx1½ nails and achieve 0.72 of the listed load, or over ½" and achieve 0.64 of the listed load. 8d commons will achieve 100% load.
4. The LTP5 may be installed over wood structural panel sheathing up to ½" thick using 8dx1½ nails with no reduction in load.
5. Connectors are required on both sides to achieve F_2 loads in both directions.
6. NAILS: 8dx1½ = 0.131" dia. x 1½" long.
See page 22-23 for other nail sizes and information.


Joists to Beams

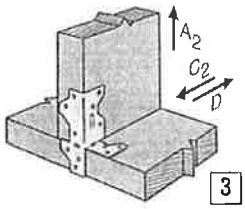

Ceiling Joists to Beam



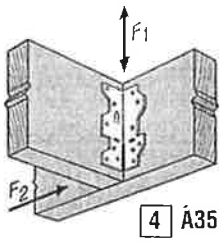
1 A34



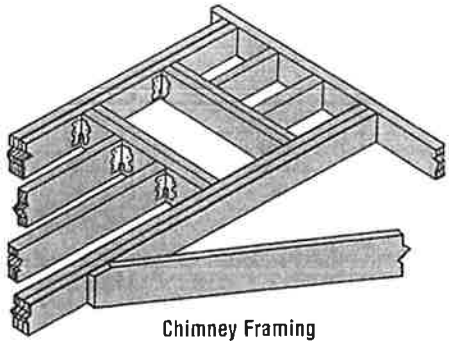
2 A35

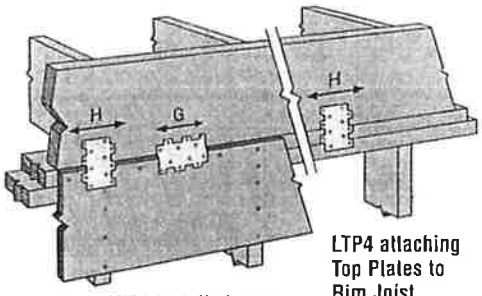


3 A35



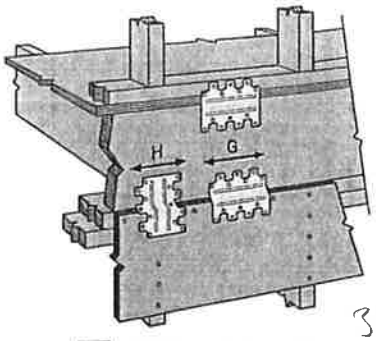
4 A35


Chimney Framing



5 LTP4 Installed over Wood Structural Panel Sheathing

LTP4 attaching Top Plates to Rim Joist



6 LTP5 Installed over Wood Structural Panel Sheathing

31

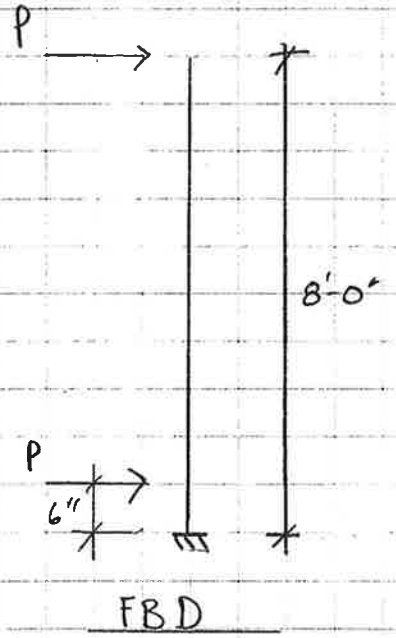
Fence Design

6x6 PT HF#1

Trib. to Post is 6.0 Ft.

$P = 18.7\ PSF \times (6.0\ FT \times 4.0\ FT) = 448^{\#}$

6x6 PT HF #1 is good.
See Wood Works



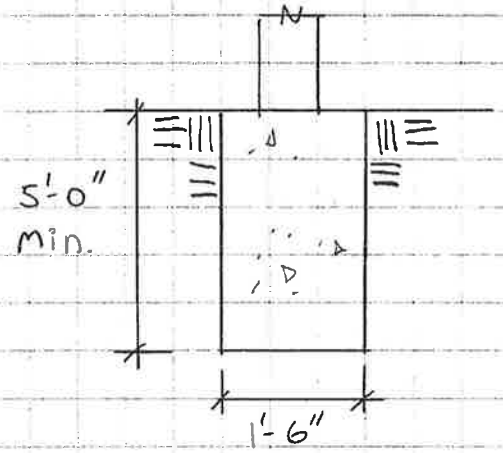
FBD

Fence Post Foundation Design

Resultant Force on Post.

$P = 900^{\#}$ @ 4' from the base.

Use a 1'-6" ø x 5'-0" Deep concrete pier, See spreadsheet.



CG ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020 425.778.8500 www.cgengineering.com	Description: Fence Post	By: PDT	Date: 3/15/16
		Checked	Date
		Scale	Sheet No.: 32
	Project: Bellevue Station 9	Job No.: 16015.902	

WoodWorks®

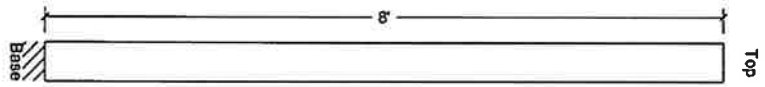
COMPANY	PROJECT
Mar. 23, 2016 14:00	6x6

Design Check Calculation Sheet
WoodWorks Sizer 10.42

Loads:

Load	Type	Distribution	Pattern	Location [ft] Start	End	Magnitude Start	End	Unit
Load2	Wind	Point		0.50		449		lbs
Load3	Wind	Point		8.00		449		lbs
Self-weight	Dead	Axial				50		lbs

Lateral Reactions (lbs):



	0'	8'
Unfactored:		
Dead		
Wind	898	
Factored:		
L->R	539	
Load comb	#2	#1

Fence Post
Timber-soft, Hem-Fir, No.1, 6x6 (5-1/2"x5-1/2")
Support: Non-wood
Total length: 8'; volume = 1.7 cu.ft.; Post and timber;
Fixed base; Free top; Load face = width(b); Service: wet; Ke x Lb: 2.1 x 8.0 = 16.8 [ft]; Ke x Ld: 2.1 x 8.0 = 16.8 [ft];

Analysis vs. Allowable Stress and Deflection using NDS 2012 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 27	Fv' = 179	psi	fv/Fv' = 0.15
Bending(-)	fb = 991	Fb' = 1248	psi	fb/Fb' = 0.79
Axial	fc = 2	Fc' = 206	psi	fc/Fc' = 0.01
Axial Bearing	fc = 2	Fc* = 557	psi	fc/Fc* = 0.00
Combined	(axial compression + side load bending)			Eq.3.9-3 = 0.80
Live Defl'n	0.85 = L/113	0.96 = L/100	in	0.88
Total Defl'n	0.85 = L/113	0.96 = L/100	in	0.88

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL/CP	CF	Cfu	Cr	Cfrt	Ci	LC#
Fv'	140	1.60	1.00	1.00	-	-	-	-	1.00	0.80	2
Fb'-	975	1.60	1.00	1.00	1.000	1.000	1.00	1.00	1.00	0.80	2
Fc'	850	0.90	0.91	1.00	0.370	1.000	-	-	1.00	0.80	1
Fc'comb	850	1.60	-	-	0.220	-	-	-	-	-	2
E'	1.3 million		1.00	1.00	-	-	-	-	1.00	0.95	2
Emin'	0.47 million		1.00	1.00	-	-	-	-	1.00	0.95	2
Fc*	850	0.90	0.91	1.00	-	1.000	-	-	1.00	0.80	1

CRITICAL LOAD COMBINATIONS:
Shear : LC #2 = .6D+.6W, V = 539, V design = 539 lbs
Bending(-): LC #2 = .6D+.6W, M = 2290 lbs-ft
Deflection: LC #2 = .6D+.6W (live)
LC #2 = .6D+.6W (total)
Axial : LC #1 = D only, P = 50 lbs
Combined : LC #2 = .6D+.6W; (1 - fc/FcE) = 0.99
D=dead L=live S=snow W=wind I=impact Lr=roof live Lc=concentrated E=earthquake
All LC's are listed in the Analysis output
Load combinations: ASCE 7-10 / IBC 2012
CALCULATIONS:
Deflection: EI = 99.1e06 lb-in2
"Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
Total Deflection = 1.00(Dead Load Deflection) + Live Load Deflection.

Design Notes:
1. WoodWorks analysis and design are in accordance with the ICC International Building Code (IBC 2012), the National Design Specification (NDS 2012), and NDS Design Supplement.
2. Please verify that the default deflection limits are appropriate for your application.

2015 IBC Pole Foundation Design

Updated 7/11/2014

Input Data:

b =	1.5	ft	diameter of pole
d =	4.27	ft	depth of embedment but not over 12 feet
h =	4	ft	distance from ground surface to point of application of P
P =	900	lbs	applied lateral force
S =	466	$lbs/ft^2/ft$	lateral bearing of depth from Table 1804.2 or soils report (350 pcf ·1.33 increase for wind)

Ssub1 = 663.27333 allowable lateral soil-bearing pressure at a depth of one third the depth of embed

Ssub3 = 1989.82 allowable lateral soil-bearing pressure at the depth of embedment

Non-constrained pole: to be used where no constraint is provided at the ground surface.

A = 2.34P/(S1*b) = 2.12

d = A/2(1+sqrt(1+4.36h/A) = **4.28** Feet

Iterate d above until estimated depth equals calculated depth. Use Goal Seek.

Constrained Pole: to be used where constraint is provided at the ground surface, such as a rigid pavement

d^2 = 4.25Ph/(s3*b) 5.13

d = **2.26** Feet

Iterate d above until estimated depth equals calculated depth. Use Goal Seek.

CG ENGINEERING
250 4th Ave. South
Suite 200
Edmonds, WA 98020

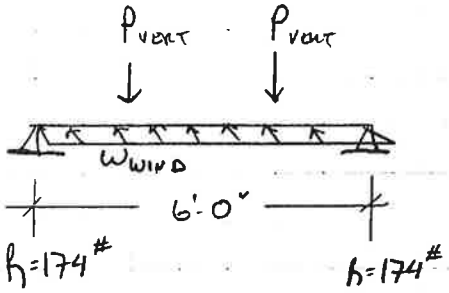
Description		By PDT	Date 7/11/2016
Pole Fdn Design		Checked	Date
		Scale	Sheet No. 34
Project		Job No.	
Bellevue Station 9		16015.902	

Fence Design - cont'd

Bottom Fence Rail - PT 4x4 HF #2

$P_{VERT} = 8' \times 3.8\,plf = 30^{\#}$
4x4 WT

$w_{wind} = 18.7\,psf \times 4' = 75\,plf$
Trib.



PT 4x4 HF #2 is good - See Woodworks

Simpson
HUC44 good for 595# & 395# uplift - See print out

Reaction From Woodworks = 174# in & out of plane.

Rotate hanger 90° from vertical.

395# > 174# ✓

Simpson HUC44 is good for the proposed loads

OR A34 T&B (2 x 415# = 830# > 174# ok)

CG ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020 425.778.8500 www.cgengineering.com	Description: Fence Bottom Rail	By: PDT	Date: 3/18/16
		Checked	Date
		Scale	Sheet No.: 35
	Project: Bellevue Station 9	Job No.: 16015.902	

WoodWorks®

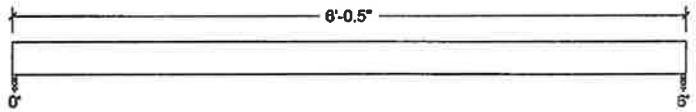
COMPANY	PROJECT
Mar. 18, 2016 10:31	Bottom Fence Rail

Design Check Calculation Sheet
WoodWorks Sizer 10.42

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start	End	Magnitude Start	End	Unit
Load1	Wind	Full UDL				75.0		plf
Load2	Dead	Point		2.02		30		lbs
Load3	Dead	Point		4.02		30		lbs
Self-weight	Dead	Full UDL				2.5		plf

Maximum Reactions (lbs), Bearing Capacities (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	38		38
Wind	227		227
Factored:			
Total	174		174
Bearing:			
Capacity			
Beam	380		380
Support	811		811
Anal/Des			
Beam	0.46		0.46
Support	0.21		0.21
Load comb	#3		#3
Length	0.50*		0.50*
Min req'd	0.50*		0.50*
Cb	1.00		1.00
Cb min	1.00		1.00
Cb support	1.11		1.11
Fcp sup	625		625

*Minimum bearing length setting used: 1/2" for end supports

Bottom Fence Rail
Lumber-soft, Hem-Fir, No.2, 4x4 (3-1/2"x3-1/2")
Supports: All - Timber-soft Beam, D.Fir-L No.2
Total length: 6'-0.5"; volume = 0.5 cu.ft.;
Service: wet; Lateral support: top= at supports, bottom= at supports;

Analysis vs. Allowable Stress and Deflection using NDS 2012 :

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	fv = 19	Fv' = 186	psi	fv/Fv' = 0.10
Bending(+)	fb = 460	Fb' = 1387	psi	fb/Fb' = 0.33
Live Defl'n	0.09 = L/762	0.20 = L/360	in	0.47
Total Defl'n	0.13 = L/561	0.30 = L/240	in	0.43

Additional Data:

FACTORS:	F/E(psi)	CD	CM	Ct	CL	CF	Cfu	Cr	Cfrt	Ci	Cn	LC#
Fv'	150	1.60	0.97	1.00	-	-	-	-	1.00	0.80	1.00	3
Fb'+	850	1.60	0.85	1.00	1.000	1.500	1.00	1.00	1.00	0.80	-	3
Fcp'	405	-	0.67	1.00	-	-	-	-	1.00	1.00	-	-
E'	1.3 million		0.90	1.00	-	-	-	-	1.00	0.95	-	2

CRITICAL LOAD COMBINATIONS:
Shear : LC #3 = D+.6W, V = 173, V design = 158 lbs
Bending(+): LC #3 = D+.6W, M = 274 lbs-ft
Deflection: LC #2 = .6D+.6W (live)
LC #3 = D+.6W (total)
D=dead L=live S=snow W=wind I=impact Lr=roof live Lc=concentrated E=earthquake
All LC's are listed in the Analysis output
Load combinations: ASCE 7-10 / IBC 2012
CALCULATIONS:
Deflection: EI = 16.3e06 lb-in2
"Live" deflection = Deflection from all non-dead loads (live, wind, snow…)
Total Deflection = 1.00(Dead Load Deflection) + Live Load Deflection.

Design Notes:
1. WoodWorks analysis and design are in accordance with the ICC International Building Code (IBC 2012), the National Design Specification (NDS 2012), and NDS Design Supplement.
2. Please verify that the default deflection limits are appropriate for your application.
3. Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.

FACE MOUNT HANGERS – SOLID SAWN LUMBER (DF/SP)

SIMPSON Strong-Tie

The new Joist Hanger Selector software enables you the most optimum product for your project.
The software takes into consideration all the characteristics seen in this catalog. Visit ***www.strongtie.com/software.***

Joist Size	Model No.	Ga	Dimensions (in.) W	H	B	Min/ Max	Fasteners Header	Joist	DF/SP Allowable Loads Uplift (160)	Floor (100)	Snow (115)	Roof (125)	Installed Cost Index (ICI)	Code Ref.
SAWN LUMBER SIZES														
TPL 2x12	LUS210-3	18	4⅝	8⅜16	2	—	8-16d	6-16d	1745	1830	2090	2265	•	160
	HU212-3/HUC212-3	14	4 1⅛16	10⅜16	2½	Min	16-16d	6-10d	1135	2380	2685	2890	•	I7, F6, L17
		14	4 1⅛16	10⅜16	2½	Max	2 2-16d	10-10d	1895	3275	3695	3970	•	
	U210-3	16	4⅝	7¾	2	—	14-16d	6-10d	1110	2015	2285	2465	•	
	HUCQ210-3-SDS	14	2⅜16	9	3	—	12-¼"x2½" SDS	6-¼"x2½" SDS	2510	5460	5560	5560	•	F23
2x14	LUS210	18	1⅜16	7 13⁄16	1¾	—	8-10d	4-10d	1165	1340	1525	1650	Lowest	I7, F6, L17
	LU210	20	1⅜16	7 13⁄16	1¾	—	10-16d	6-10dx1½	850	1390	1585	1715	+11%	
	U210	16	1⅜16	7 13⁄16	2	—	10-16d	6-10dx1½	1110	1440	1635	1685	+53%	
	HU214	14	1⅜16	10⅛	2¼	—	12-16d	6-10dx1½	1135	1785	2015	2165	+88%	
	U214	16	1⅜16	10	2	—	12-16d	8-10dx1½	1115	1730	1960	2115	+147%	
DBL 2x14	U210-2	16	3⅛	8½	2	—	14-16d	6-10d	1110	2015	2285	2465	Lowest	
	LUS214-2	18	3⅛	10 15⁄16	2	—	10-16d	6-16d	1745	2110	2410	2610	+12%	
	HUS212-2/HUSC212-2	14	3⅛	10¾	2	—	10-16d	10-16d	3635	2660	3025	3265	+83%	
	HU212-2/HUC212-2	14	3⅛	10⅜16	2½	Min	16-16d	6-10d	1135	2380	2685	2890	+248%	
		14	3⅛	10⅜16	2½	Max	2 2-16d	10-10d	1895	3275	3695	3970	+265%	
	HU214-2/HUC214-2	14	3⅛	12 13⁄16	2½	Min	18-16d	8-10d	1515	2680	3020	3250	+259%	
		14	3⅛	12 13⁄16	2½	Max	24-16d	12-10d	2015	3570	4030	4335	+276%	
	HUCQ210-2-SDS	14	2⅜16	9	3	—	12-¼"x2½" SDS	6-¼"x2½" SDS	2510	4680	4955	4955	•	F23
TPL 2x14	U210-3	16	4⅝	7¾	2	—	14-16d	6-10d	1110	2015	2285	2465	•	I7, F6, L17
	HU214-3/HUC214-3	14	4 1⅛16	12 1⅛16	2½	Min	18-16d	8-10d	1515	2680	3020	3250	•	
		14	4 1⅛16	12 1⅛16	2½	Max	24-16d	12-10d	2015	3570	4030	4335	•	
	HUCQ210-3-SDS	14	4⅝	9	3	—	12-¼"x2½" SDS	6-¼"x2½" SDS	2510	5460	5560	5560	•	F23
2x16	U214	16	1⅜16	10	2	—	12-16d	8-10dx1½	1115	1730	1960	2115	Lowest	I7, F6, L17
	HU214	14	1⅜16	10⅛	2¼	—	12-16d	6-10dx1½	1135	1785	2015	2165	+130%	
	HU216	14	1⅜16	12 15⁄16	2¼	—	18-16d	8-10dx1½	1515	2680	3020	3250	+130%	160
DBL 2x16	HUS212-2/HUSC212-2	14	3⅛	10¾	2	—	10-16d	10-16d	3635	2660	3025	3265	Lowest	I7, F6, L17
	HU216-2/HUC216-2	14	3⅛	13⅞	2½	Min	20-16d	8-10d	1515	2975	3360	3610	+111%	
		14	3⅛	13⅞	2½	Max	26-16d	12-10d	2015	3870	4365	4695	+120%	
TPL 2x16	HU216-3/HUC216-3	14	4 1⅛16	13⅞	2½	Min	20-16d	8-10d	1515	2975	3360	3610	•	
		14	4 1⅛16	13⅞	2½	Max	26-16d	12-10d	2015	3870	4365	4695	•	
3x4	U34	16	2⅜16	3⅜	2	—	4-16d	2-10dx1½	265	575	655	705	•	I7, F8, L17
	HU34/HUC34	14	2⅜16	3⅜	2½	—	4-16d	2-10dx1½	380	595	670	720	•	I7, F6, L17
3x6	U36	16	2⅜16	5⅜	2	—	8-16d	4-10dx1½	585	1150	1305	1410	•	
	LUS36	18	2⅜16	5¼	2	—	4-16d	4-16d	1165	1030	1180	1280	•	F23
	HU36/HUC36	14	2⅜16	5⅜	2½	—	8-16d	4-10dx1½	610	1190	1345	1445	•	I7, F6, L17
3x8	U36	16	2⅜16	5⅜	2	—	8-16d	4-10dx1½	585	1150	1305	1410	•	
	LUS36	18	2⅜16	5¼	2	—	4-16d	4-16d	1165	1030	1180	1280	•	F23
	HU38/HUC38	14	2⅜16	7⅛	2½	—	10-16d	4-10dx1½	610	1490	1680	1805	•	I7, F6, L17
3x10	U310	16	2⅜16	8⅞	2	—	14-16d	6-10dx1½	1110	2015	2285	2465	•	
	LUS310	18	2⅜16	7¼	2	—	6-16d	4-16d	1165	1315	1500	1625	•	F23
	HU310/HUC310	14	2⅜16	8⅞	2½	—	14-16d	6-10dx1½	915	2085	2350	2530	•	I7, F6, L17
	HUCQ310-SDS	14	2⅜16	9	3	—	8-¼"x2½" SDS	4-¼"x2½" SDS	1370	3120	3590	3900	•	F23
3x12	U310	16	2⅜16	8⅞	2	—	14-16d	6-10dx1½	1110	2015	2285	2465	•	I7, F6, L17
	LUS310	18	2⅜16	7¼	2	—	6-16d	4-16d	1165	1315	1500	1625	•	F23
	HU312/HUC312	14	2⅜16	10⅝	2½	—	16-16d	6-10dx1½	915	2380	2685	2890	•	I7, F6, L17
	HUCQ310-SDS	14	2⅜16	9	3	—	8-¼"x2½" SDS	4-¼"x2½" SDS	1370	3120	3590	3900	•	F23
3x14	U314	16	2⅜16	10½	2	—	16-16d	6-10dx1½	1110	2305	2615	2820	•	F8
	HU314/HUC314	14	2⅜16	12⅜	2½	—	18-16d	8-10dx1½	1515	2680	3020	3250	•	I7, F6, L17
	HUCQ310-SDS	14	2⅜16	9	3	—	8-¼"x2½" SDS	4-¼"x2½" SDS	1370	3120	3590	3900	•	F23
3x16	U314	16	2⅜16	10½	2	—	16-16d	6-10dx1½	1110	2305	2615	2820	•	I7, F6, L17
	HU316/HUC316	14	2⅜16	14⅛	2½	—	20-16d	8-10dx1½	1515	2975	3360	3610	•	
4x4	LUS44	18	3⅜16	3	2	—	4-16d	2-16d	440	800	910	985	Lowest	
	U44	16	3⅜16	2⅞	2	—	4-16d	2-10d	370	575	655	705	+20%	
	HU44/HUC44	14	3⅜16	2⅞	2½	—	4-16d	2-10d	380	595	670	720	+161%	
4x6	LUS46	18	3⅜16	4¾	2	—	4-16d	4-16d	1165	1030	1180	1280	Lowest	
	U46	16	3⅜16	4⅞	2	—	8-16d	4-10d	740	1150	1305	1410	+37%	
	HUS46/HUSC46	14	3⅜16	5	2	—	4-16d	4-16d	1235	1065	1210	1305	+152%	
	HU46/HUC46	14	3⅜16	5 5⁄16	2½	Min	8-16d	4-10d	760	1190	1345	1445	+163%	
		14	3⅜16	5 5⁄16	2½	Max	12-16d	6-10d	1135	1785	2015	2165	+185%	
4x8	LUS46	18	3⅜16	4¾	2	—	4-16d	4-16d	1165	1030	1180	1280	Lowest	I7, F6, L17
	U46	16	3⅜16	4⅞	2	—	8-16d	4-10d	740	1150	1305	1410	+37%	
	LUS48	18	3⅜16	6¾	2	—	6-16d	4-16d	1165	1315	1500	1625	+40%	
	HUS48/HUSC48	14	3⅜16	6 15⁄16	2	—	6-16d	6-16d	1550	1595	1815	1960	+203%	
	HU48/HUC48	14	3⅜16	6 13⁄16	2½	Min	10-16d	4-10d	760	1490	1680	1805	+213%	
		14	3⅜16	6 13⁄16	2½	Max	14-16d	6-10d	1135	2085	2350	2530	+235%	

See footnotes on page 79.

CODES: See page 12 for Code Reference Key Chart.

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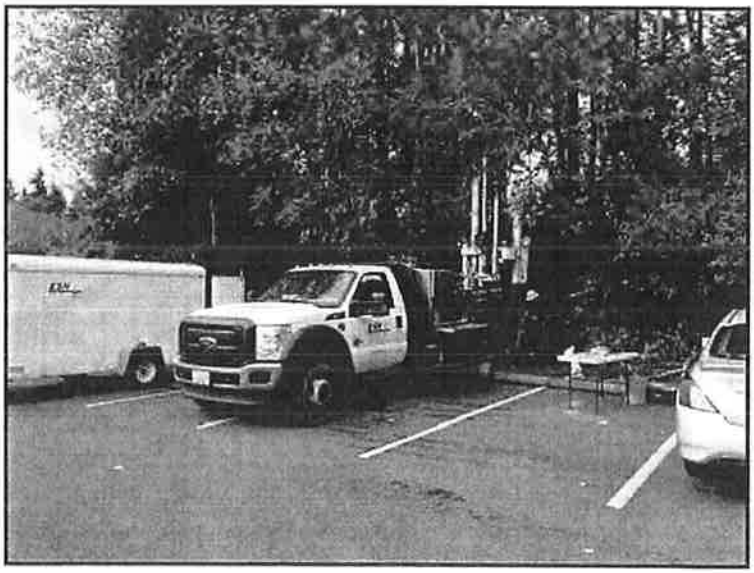
TETRA TECH

Report of

Geotechnical Investigation

PSERN – Communications Towers
Bellevue Station 9
Bellevue, Washington



November 2015

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TETRA TECH

November 16, 2015

Mr. Mark Riley
Vice President
Odelia Pacific Corporation
1215 4th Avenue, Suite 1900
Seattle, WA 98161

SUBJECT: Geotechnical Investigation
PSERN – Bellevue Station 9
Issaquah, Washington
Tetra Tech Project No. 114-570974

Dear Mr. Riley:

Tetra Tech has performed a foundation investigation of the soil conditions at the proposed communications tower site 'Bellevue Station 9' located in Bellevue, Washington.

This report presents the geotechnical investigation and the foundation design recommendations. It is important that Tetra Tech provide consultation and review during the design phase, and field observation and testing services during construction, to ensure complete implementation of the geotechnical design recommendations.

If you have any questions, please contact myself or Marco Fellin at 406-543-3045.

Respectfully submitted,

TETRA TECH

Jeremy Dierking, P.E.
Project Geotechnical Engineer

Enclosure: 1 copy

2525 Palmer Street, Suite 2, Missoula, MT 59808
Tel 406.543.3045 Fax 406.543.3088 www.tetratech.com

Mat Foundation

The natural poorly-graded gravel with silt and sand is capable of supporting the anticipated vertical compression and shear loads, and as is typical for self-supporting towers the critical load conditions are uplift and overturning.

A single mat foundation bearing on the natural poorly-graded gravel with silt and sand or a zone of engineered gravel fill extending to the natural gravel is recommended to support the tower's structural loads and provide resistance for overturning moments. The mat should be proportioned for a maximum bearing pressure of 3 kips per square foot (ksf) under transient load conditions. Based on the theory of elastic settlement, assuming a 20-foot by 20-foot square concrete mat foundation and a bearing pressure of 3 ksf, the estimated total settlement for a mat supported on the natural silty to clayey sand with gravel or engineered gravel fill will be less than 2 inches. The zone of engineered gravel fill should extend a minimum of 3 feet beyond the edges of the mat foundation.

The depth of foundation embedment to resist overturning moments will control the foundation depth. For a mat to fail from overturning loads, it must rotate about some point at the base. Resistance to overturning is provided by the bearing pressure across the base of the mat, combined with the weight of the mat and the weight of any soil above the mat. Under static conditions, the tower loads are relatively light. For the critical loading condition, which occurs due to wind and ice loads, the overturning moment for the tower will be relatively large.

The location of the resultant on the base of the mat caused by the overturning moment (rather than the allowable toe pressure) will probably control the size of the foundation. For transient loads (e.g., wind, ice and earthquake), it is permissible to allow the base resultant to be located within the middle half of the mat. As long as the resultant of the bearing pressure is located within the middle half of the mat, the factor of safety is equal to or greater than 1.5 against overturning. If the resultant falls outside this area, the factor of safety is less than 1.5, which is less than the normally acceptable minimum safety factor for this kind of structure.

The lateral resistance of a mat foundation is controlled by a combination of sliding resistance between the mat and the foundation materials, and the lateral pressure against the side of the footing. Criteria are presented below for determining the lateral resistance of mat foundations. The design and construction criteria presented below should be observed for a mat foundation system. Construction details should be considered when preparing project documents.

1. In preparation for construction of the mat foundation, the subgrade at foundation elevation should be moisture conditioned to within 2 percent of optimum, graded level, and compacted in accordance with Item 2 in Site Grading.

2. Support the tower structural loads with a concrete mat founded on the poorly-graded gravel with silt and sand or a zone of engineered gravel fill designed for a maximum allowable bearing pressure of 3 ksf to resist the design overturning moment. It should be sized so that the factor of safety against overturning is at least 1.5.

3. Lateral loads of a mat foundation will be resisted by a combination of sliding resistance of the mat and the foundation materials and the lateral bearing pressure against the side of the mat. Resistance to sliding can be calculated based on a coefficient of friction 0.45 for the natural gravel or engineered gravel fill and a lateral bearing pressure of 350 pounds per square foot.

4. The mat footing should be placed a minimum of 48 inches below grade for frost protection.

5. The ultimate overturning resistance can be calculated using the full weight of the mat plus the weight of any material enclosed in the prism of soil above the mat. For estimating purposes, it should be assumed that the soil prism extends outward and upward from the top corners of the mat at an angle of 30 degrees from vertical. The unit weight of soil backfill within the prism should be calculated using a unit weight of 120 pounds per cubic foot provided the cover is compacted to at least 95 percent of the maximum dry density determined by ASTM Method D698.

6. A representative of the geotechnical engineer should observe all mat excavations prior to placement of concrete forms.

Drilled Piers

With the use of a drilled pier foundation system, loads are supported by individual piers. Loads applied to the piers are transmitted to the bearing strata partially through skin friction which develops on the sides of the pier and partially through end bearing. Drilled piers have the advantage of providing high supporting capacity with a relatively small amount of movement.

Due to the site congestion, a drilled pier foundation system will reduce the footprint of the tower foundation system, support the tower axial loads, and resist the uplift and overturning forces induced by the tower. The drilled pier foundation system should be sized so that the uplift force due to overturning does not exceed the dead weight of the pier plus the frictional resistance between the pier and the soil.

Care should be taken that drilled pier shafts are constructed straight sided and not oversized at their top. Mushroomed drilled pier tops can provide a bearing surface for freezing soils to exert uplift force on the piers causing potential unwanted movements.

The following design and construction recommendations should be observed for drilled pier foundation systems for the proposed structures.

1. Drilled piers should be designed based on the allowable end bearing and allowable skin friction values in the table below. Skin friction should be neglected in the upper 5 feet of overburden soils.

Depth (ft)	Soil Type	End Bearing Pressure (psf)	Skin Friction (psf)
6	ML	0	200
8	SC-CM	0	250
12	GP-GM	4000	400
18	GP-GM	6000	600
24	GP-GM	8000	800

2. Uplift due to structural loading on the shaft can be resisted by using 75 percent of the allowable skin resistance plus an allowance for shaft weight

3. Cobbles and boulders were encountered in the boring starting at a depth of 8 feet. The presence, size, and thickness of cobble and boulders will vary and present difficult drilling and construction conditions, including installing temporary casing. These conditions must be fully considered by the drilling contractor when selecting the appropriate drilling and casing equipment. In our opinion, drilling will require heavy-duty drilling equipment, which may include core barrels, rock bits, downhole hammers, etc.

4. A minimum drilled pier length of 15 feet is recommended for the design of all drilled piers bearing in the native soils.

5. A minimum drilled pier diameter of 24 inches is recommended to facilitate proper cleaning and observation of the pier hole. A minimum spacing requirement between drill piers should be three diameters from center to center.

6. Drilled piers should be reinforced their full length.

7. Drilled piers should be properly cleaned prior to placement of concrete. Concrete should be placed in the drilled piers the same day they are drilled. Failure to place concrete the day of drilling will normally result in the requirement for additional penetration.

8. Concrete placed in the pier should be a fluid mix having a slump in the range of 6 to 8 inches. Concrete placement should occur as soon as possible after reinforcing steel placement. Concrete placement should be continuous from the bottom to the top elevation of the pier and should continue after pier excavation is full until good quality concrete is evident at the top of the pier.

9. Temporary casing will be necessary for drilled pier construction below groundwater. If groundwater enters the drilled pier holes, the use of dewatering equipment may be required or concrete could be pumped using a tremmie pipe from the bottom of the pier shaft upward to displace the water. In no case should concrete be placed in more than 3 inches of water using conventional concrete placement.

A representative of a geotechnical engineer should observe installation of the drilled piers on a full time basis to check the appropriate bearing stratum is being penetrated and to monitor other pier construction procedures.

Building Foundation

Equipment buildings are typically about 12 by 26 feet in plan and lightly loaded with about 20 kips total weight. In preparation for spread footing construction, the natural sandy silt with gravel subgrade should be scarified to a depth of 12 inches, moisture-conditioned to within 2 percent of optimum and compacted to at least 95 percent of the maximum dry density as determined by ASTM D698. The equipment building should be supported on continuous spread footings placed below normal frost depth on a minimum of 2 foot of engineered gravel fill. Continuous footings bearing on engineered gravel fill should be designed for an allowable soil bearing pressure of 3 ksf or less.

Seismic Load Calculation for Components and System

(Reference: IBC 2015 Section 1613 & ASCE 7-10 Section 13.3)

Seismic Force:

0.2s Spectral Response Acceleration, Site Class B, S_s	=	1.419	(ASCE 7, Figure 22-1 thru 22-6)
1.0s Spectral Response Acceleration, Site Class B, S_1	=	0.541	(ASCE 7, Figure 22-1 thru 22-6)
Site Class	=	D	(ASCE 7, Section 11.4.2)
Seismic Design Category	=	D	(ASCE 7, Tables 11.6-1 & 11.6-2)
Site Coefficient per S_s & Site Class, F_a	=	1.00	(ASCE 7, Table 11.4-1)
Site Coefficient per S_1 & Site Class, F_v	=	1.50	(ASCE 7, Table 11.4-2)
$S_{MS} = F_a S_s$	=	1.419	(ASCE 7, Section 11.4.3)
$S_{M1} = F_v S_1$	=	0.812	(ASCE 7, Section 11.4.3)
$S_{DS} = 2/3\ S_{MS}$	=	0.946	(ASCE 7, Section 11.4.4)
$S_{D1} = 2/3\ S_{M1}$	=	0.541	(ASCE 7, Section 11.4.4)

(Per ASCE 7-10, 13.3)

Component Amplification Factor, a_p	=	2.5	(ASCE 7, Table 13.6-1)
Component Response Modification Factor, R_p	=	6	(ASCE 7, Table 13.6-1)
Component Importance Factor, I_p	=	1.0	(ASCE 7, Table 1.5-2)
Component Operating Weight, W_p	=	W_p	(lb)
Height in structure at lowest point of attachment of component, z_1	=	10	(ft)
Height in structure at highest point of attachment of component, z_2	=	10	(ft)
Average Roof Height of Structure, h	=	10	(ft)

Seismic design force, $F_p = \dfrac{0.4 a_p S_{DS} W_p}{R_p / I_p}(1+2z/h)$ (Eq. 13.3-1)

Max. seismic design force, $F_{pmax} = 1.6 S_{DS} I_p W_p$ (Eq. 13.3-2)

Min. seismic design force, $F_{pmin} = 0.3 S_{DS} I_p W_p$ (Eq. 13.3-3)

Seismic design force at lowest point, $F_{P1} = 0.473\ W_p$

Seismic design force at highest point, $F_{P2} = 0.473\ W_p$

$F_{p\,(AVG)} = 0.473$

Min. seismic design force, $F_{pmin} = 0.284\ W_p$

Max. seismic design force, $F_{pmax} = 1.514\ W_p$

Seismic design force, F_p (ASD)	=	0.338 W_p

CG ENGINEERING
250 4th Ave. South
Suite 200
Edmonds, WA 98020

Description: Ice Bridge		By: BTJ	Date: 7/11/2016
Seismic Loads For Components & Systems		Checked	Date
Project: Bellevue Station 9		Scale: N.T.S.	Sheet No.: 43
		Job No.: 16015.902	

Ice Bridge Foundation -

Seismic - Frame Wt

14 GA. (2" Channel) Galv. Grat. = 2.6 plf
EQUIP. / Cables = 10 plf

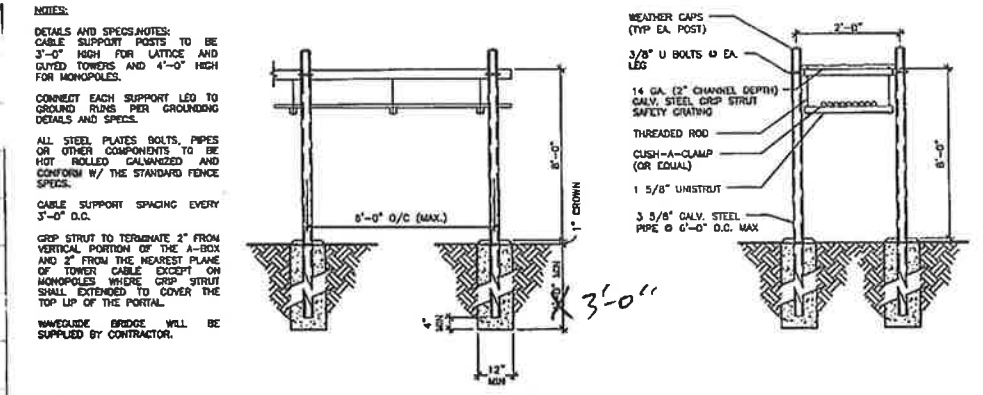
12.6 plf

6 ft of trib. = 6' × 12.6' = 76#

3" ø Std pipe = 7.58 #/ft × 2 Pipes × 11 ft tall = 167#

Total Dead Load = 76# (Frame) + 167# (Pipes) + 50# (Misc.) = 293#

$V_a = C_s W = 0.338 \times 293\# = 99\#$ applied at the top - conservatively



1 ICE BRIDGE DETAIL - 2 POST
NOT TO SCALE

CG ENGINEERING
250 4th Ave. South
Suite 200
Edmonds, WA 98020
425.778.8500
www.cgengineering.com

Description: Ice Bridge Fdn	By: PDT	Date: 3/17/16
	Checked	Date
	Scale	Sheet No.: 44
Project: Bellevue Station 9	Job No.: 16015.902	

Ice Bridge Foundation

Wind Load

Pipe SF = $\left(\frac{4"}{12"/ft} \phi \times 10ft\right) \times 2\ Pipes = 6.67\ sf$

Cable Trays SF = $\left(\frac{2'}{12"/ft}\right) \times \underset{trib}{6ft} = 1\ sf$

$W_{ASD} = (6.67 + 1)sf \times 18.7\ psf = 143.4\#$ - applied at the top of the pipes - conservative

Wind governs over Seismic

Use a 18" ϕ x 3'-0" Deep post pier - see spread sheet

CG ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020 425.778.8500 www.cgengineering.com	Description: Fence Foundation	By: PDT	Date: 3/18/16
		Checked	Date
		Scale	Sheet No.: 45
	Project: Bellevue Station 9	Job No.: 1601S.902	

2015 IBC Pole Foundation Design

Updated 7/11/2014

Input Data:

b =	1.5	ft	diameter of pole
d =	2.70	ft	depth of embedment but not over 12 feet
h =	1.0	ft	distance from ground surface to point of application of P
P =	144	lbs	applied lateral force
S =	466	lbs/ft²/ft	lateral bearing of depth from Table 1804.2 or soils report

Ssub1 = 419.4 allowable lateral soil-bearing pressure at a depth of one third the depth of embed

Ssub3 = 1258.2 allowable lateral soil-bearing pressure at the depth of embedment

Non-constrained pole: to be used where no constraint is provided at the ground surface.

A = 2.34P/(S1*b) = 0.54

d = A/2(1+sqrt(1+4.36h/A) = **2.70** Feet

Iterate d above until estimated depth equals calculated depth. Use Goal Seek.

Constrained Pole: to be used where constraint is provided at the ground surface, such as a rigid pavement

d^2 = 4.25Ph/(s3*b) 3.24

d = **1.80** Feet

Iterate d above until estimated depth equals calculated depth. Use Goal Seek.

CG ENGINEERING 250 4th Ave. South Suite 200 Edmonds, WA 98020	Description: Ice Bridge Fdn Design	By: BTJ	Date: 7/11/2016
		Checked	Date
		Scale	Sheet No. 46
	Project: Bellevue Station 9	Job No. 16015.902	

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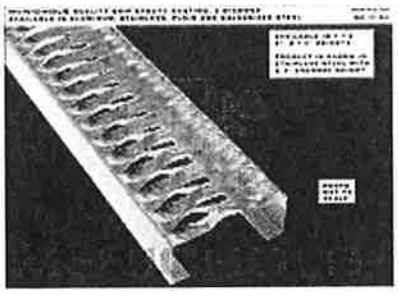
Print

Item Specifications:

Item Number :	2402201410
Product Line :	Grating
Product Type :	Plank
Weight :	2.6 #/LF
Class :	Diamond Surface
Trade Name :	GRIP STRUT®
Major Material :	Galvanized
Minor Material :	Mill-Galv ASTM A525
Gauge (Thickness) :	14
Alternate Description :	2 Diamond
Channel Depth :	2.000
Surface :	Serrated
Surface Pattern :	N/A
Gender :	Male-Male
Percent Open Area :	--
Width :	4.7500
Length (Span for Grating) :	120.0000
SKU Type :	Plank
Punched for Splicing :	No
Punched Hole Type :	N/A
Nosing Shelf :	No
Punched Hole Size :	N/A
Series :	N/A
HS Item Number :	2402201410



Accessories:

Angle	Bar Interlocks	Carrier Plates
Clips, Anchors, Etc	End Plates	Hardware
Kick Plate	Nosing	Splice Plates

Options:

valmont STRUCTURES

VALMONT MICROFLECT
3575 25th St. SE
Salem, OR 97302
PHONE: 1-800-547-2151
ENGINEER: Nathan Ross
Reviewed by: NR

COMMUNICATION POLE DESIGN CALCULATIONS

ODELIA
VALMONT ORDER# 324543
SITE NAME: BELLEVUE STATION, WA
POLE HEIGHT: 169FT (170 FT AGL)

May 16, 2016
Project#: U1316-119-161

WA Certificate of Authorization: 2202

VECTOR ENGINEERS
9138 S. State Street, Suite 101 (801) 990-1775
Sandy, Utah 84070 (801) 990-1776 Fax

valmont STRUCTURES

4/15/16

ENGINEERING DATA

for

ODELIA
BELLEVUE STATION, WA
VALMONT QUOTATION 324543

1) STRUCTURE DESIGN CONFORMS TO EIA/TIA-222-G INCLUDING:
   85.0 MPH WIND (3 SECOND GUST, 50 YR. RETURN PERIOD)
   30.0 MPH ICE WIND (50 YR. RETURN PERIOD)
   DESIGN ICE THICKNESS = 0.25 INCHES
   EXPOSURE CATEGORY B
   STRUCTURE CLASSIFICATION III
   TOPOGRAPHIC CATEGORY 3 (H = 400)
   60.0 MPH BASIC WIND SPEED WITH NO ICE FOR TWIST AND SWAY
   SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS AND 1 SEC.: Ss = 1.42 & S1 = 0.54
2) FEEDLINES ARE ASSUMED TO BE PLACED INTERIOR TO THE POLE.
3) ALL MICROWAVE ASSUMED TO BE 6 GHz UNLESS OTHERWISE NOTED.
4) TOTAL POLE HEIGHT IS 170 FT AGL
5) ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX 1 FT AGL)
6) POLE DESIGNED TO NOT EXCEED 85% CAPACITY
7) POLE TO BE PAINTED SW 6195 ROCK GARDEN
8) POLE MEETS 0.47 DEGREE TWIST & SWAY UNDER 60 MPH SERVICE WIND SPEED
9) POLE DESIGNED TO 110 MPH ULTIMATE WIND SPEED PER IBC 2012
10) WIND SPEED CONVERSION TO 85 MPH NOMINAL PER IBC 2012 1609.3.1
11) LOADING AS FOLLOWS:
    169.0' POLE
    1 - 4ft lightning rod @ 169.0
    2 - SC412-HF2LDF @ 169.0
    4 - 6' Universal Side Arm (84" pipe) (w/PM) @ 169.0
    2 - 6' HIGH PERFORMANCE (w/PM) (11 GHz) @ 166.0
    1 - 4' HIGH PERFORMANCE (w/PM) (11 GHz) @ 164.0
    1 - 3' HP DISH (w/PM) (11 GHz) @ 159.5
    2 - SC412-HF2LDF @ 149.0
    4 - 6' Universal Side Arm (84" pipe) (w/PM) @ 149.0
    12 - PANEL (8' X 1' X 3") (w/PM) @ 154.0
    3 - T-arm SP1 3' S/O 12' C/A @ 154.0
    2 - 6' HIGH PERFORMANCE (w/PM) (11 GHz) @ 146.0
    1 - dbSpectra UHF TTA (w/PM) @ 127.5
    2 - CC807-11 @ 109.0
    4 - 6' Universal Side Arm (84" pipe) (w/PM) @ 109.0
    2 - CC807-11 @ 89.0
    4 - 6' Universal Side Arm (84" pipe) (w/PM) @ 89.0
    1 - Camera (17.5" x 13.5" x 8") (w/PM) @ 34.0
    1 - 19" Standoff @ 34.0

STRUCTURE ANCHORAGE INFORMATION

POLE HEIGHT(FT):	169	NUMBER OF A.B.'s:	32
BOLT CIRCLE(IN):	89.77	DIA. OF A.B.'s(IN):	2.25
BASE VERTICAL(K):	92.99	LENGTH OF A.B.'s(IN):	66.00
BASE SHEAR(K):	62.25	PROJECTION LENGTH(IN):	12.00
BASE MOMENT(FT-K):	6969	TEMPLATE OD(IN):	93.27

valmont STRUCTURES

BY_____ DATE _____
CHKD. BY _____ DATE _____

SHEET NO. _____

4/15/16

ENGINEERING DATA

for

ODELIA
BELLEVUE STATION, WA
VALMONT QUOTATION 324543

EIA/TIA-222-G

BASIC WIND:	85.0 MPH	DESIGN ICE THICKNESS:	0.25 IN.
WIND & ICE:	30.0 MPH	EXPOSURE CATEGORY:	B
TWIST & SWAY:	60.0 MPH	STRUCTURE CLASS.:	III
S_S:	1.42	TOPOGRAPHIC CATEGORY:	3
S_1:	0.54		

QTY	DESCRIPTION	HEIGHT	DATA W.O. ICE EPA	DATA W.O. ICE WT	DATA W/ ICE EPA	DATA W/ ICE WT
1	4ft lightning rod	@ 169.0 '	0.25	10	0.92	23
2	SC412-HF2LDF	@ 169.0 '	20.96	158	27.98	414
4	6' Universal Side Arm (84" pipe) (w/PM)	@ 169.0 '	37.56	892	56.00	1616
2	6' HIGH PERFORMANCE (w/PM)	@ 166.0 '	76.54	744	81.12	1258
1	4' HIGH PERFORMANCE (w/PM)	@ 164.0 '	17.18	253	18.67	373
1	3' HP DISH (w/PM)	@ 159.5 '	9.97	136	11.12	209
2	SC412-HF2LDF	@ 149.0 '	20.96	158	27.98	414
4	6' Universal Side Arm (84" pipe) (w/PM)	@ 149.0 '	37.56	892	56.00	1616
12	PANEL (8' X 1' X 3") (w/PM)	@ 154.0 '	83.40	948	98.16	2340
3	T-arm SP1 3' S/O 12' C/A	@ 154.0 '	8.85	618	11.88	894
2	6' HIGH PERFORMANCE (w/PM)	@ 146.0 '	76.54	744	81.10	1258
1	dbSpectra UHF TTA (w/PM)	@ 127.5 '	4.05	61	4.70	126
2	CC807-11	@ 109.0 '	10.46	98	16.28	238
4	6' Universal Side Arm (84" pipe) (w/PM)	@ 109.0 '	37.56	892	55.96	1612
2	CC807-11	@ 89.0 '	10.46	98	16.26	238
4	6' Universal Side Arm (84" pipe) (w/PM)	@ 89.0 '	37.56	892	55.88	1612
1	Camera (17.5" x 13.5" x 8") (w/PM)	@ 34.0 '	3.29	83	3.89	132
1	19" Standoff	@ 34.0 '	0.73	16	1.20	34

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** SUMMARY ***

Design Code: TIA-222-G Addendum 2

DESIGN SUMMARY

Height Above Base Plate (ft)	169.00	Ground Line Diameter (in)	82.000	Pole Shaft Weight (lbs)	65333
		Top Diameter (in)	47.000		
		Pole Taper (in/ft)	0.22189	Shape:	18 Sides

Connections Between Sections	/First/	/Second/	/Third/
Height Above Ground (ft)	48.00	85.00	124.00
Type	Slip Joint	Slip Joint	Slip Joint
Overlap Length (in)	119	107	95
Maximum Axial Force (lbs)	69465	46834	24468

Section Characteristics	/First/	/Second/	/Third/	/Fourth/
Base Diameter (in)	82.000	74.550	66.993	58.742
Top Diameter (in)	71.349	64.139	56.360	47.000
Thickness (in)	0.62500	0.50000	0.43750	0.31250
Length (ft)	48.000	46.917	47.917	52.917
Weight (lbs)	24640	17442	13865	9387
Yield Strength (ksi)	65.00	65.00	65.00	65.00

ANALYSIS SUMMARY

	Pt. of Fixity	Governing Level Sec.1	Governing Level Sec.2	Governing Level Sec.3	Governing Level Sec.4	Pole Top
Governing Load Case	WIND	WIND	WIND	WIND	WIND	WIND
Height (ft)	0.00	0.00	48.00	85.00	124.00	169.00
Resultant Moment (in-kips)	83623	83623	50625	29079	11545	150
Shear Force (lbs)	62293	62293	52316	44699	31312	3525
Axial Force (lbs)	88230	88230	53199	33161	15466	1153
Effective Yield Strength (ksi)	76.26	76.26	73.47	72.66	65.66	72.28
Combined Interaction Value	0.38	0.38	0.39	0.32	0.25	0.00
Total Deflection (in)	0.00	0.00	3.48	10.98	23.12	40.77

Note: Diameters are outside, measured across the flats
Forces and moments are reported in the local element coordinate system

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** POLE SHAFT POINT OF FIXITY REACTIONS ***

Loading Case Identifier	Moments About X-Axis (in-kips)	Moments About Y-Axis (in-kips)	Moments Resultant (X & Y) (in-kips)	Moments Torsional (in-kips)	Vertical Force (lbs)	Shear In X-Direction (lbs)	Shear In Y-Direction (lbs)	Shear Resultant (X & Y) (lbs)	Notes
WIND	64059	-53752	83623	0	88262	40012	47685	62248	
ICE + WIND	6524	-5475	8517	0	107902	4332	5163	6740	
T+S	15494	-13001	20225	0	73063	9697	11556	15086	
Seismic	21114	-17717	27562	0	87632	12847	15310	19986	

Note: Positive vertical force is downward.
Reactions are considered in the global coordinate system.

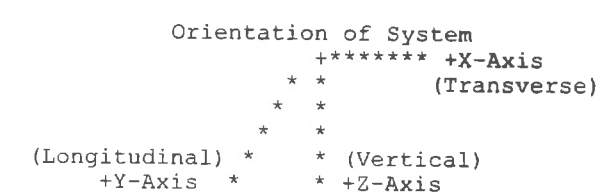
BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** INPUT LOADS ***

Design Code TIA-222-G Addendum 2
Loading Case WIND

Basic Wind Velocity is 85.00 mph Ice Thickness 0.00
Wind Orientation is 50.0 Degrees Clockwise From +X Axis
Structure Weight Overload Factor is 1.200
Exposure B, Gust Factor 1.10
Structure Category 3, Topographic Category 3, Crest Height 400.00 ft
Orientations are Measured Clockwise From +X Axis
Positive Y Axis is 90 Degrees Clockwise From +X Axis
Foundation Rotation of 0.00 Degrees
Elevation of structure base above surrounding terrain = 1.00 ft



Load Number	Mounting Height (ft)	Load Height (ft)	Load Eccentricity (ft)	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
1	169.00	171.00	0.00	50.00	10	11	12	0.25	1-4ft lightni
2	169.00	179.00	0.00	50.00	798	952	190	20.96	2-SC412-HF2LD
3	169.00	169.00	0.00	50.00	1431	1706	1070	37.56	4-6' Universa
4	166.00	166.00	0.00	50.00	2916	3476	893	76.54	2-6' HIGH PER
5	164.00	164.00	0.00	50.00	655	780	304	17.18	1-4' HIGH PER
6	159.50	159.50	0.00	50.00	380	453	163	9.97	1-3' HP DISH
7	149.00	159.00	0.00	50.00	799	952	190	20.96	2-SC412-HF2LD
8	149.00	149.00	0.00	50.00	1430	1705	1070	37.56	4-6' Universa
9	154.00	154.00	0.00	50.00	3177	3786	1138	83.40	12-PANEL [8'
10	154.00	154.00	0.00	50.00	337	402	742	8.85	3-T-arm SP1 3
11	146.00	146.00	0.00	50.00	2914	3473	893	76.54	2-6' HIGH PER
12	127.50	127.50	0.00	50.00	154	183	73	4.05	1-dbSpectra U
13	109.00	118.00	0.00	50.00	395	471	118	10.44	2-CC807-11
14	109.00	109.00	0.00	50.00	1418	1690	1070	37.56	4-6' Universa
15	89.00	98.00	0.00	50.00	392	467	118	10.44	2-CC807-11
16	89.00	89.00	0.00	50.00	1400	1669	1070	37.56	4-6' Universa
17	34.00	34.00	0.00	50.00	108	129	100	3.29	1-Camera [17.

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** INPUT LOADS ***

Loading Case WIND - Continued

Load Number	Mounting Height [ft]	Load Height [ft]	Load Eccentricity [ft]	Orientation in XY Plane [Degrees]	Force-X [lbs]	Force-Y [lbs]	Force-Z [lbs]	EPA [ft^2]	Orientation of System
									1-Camera [17.
									1-Camera [17.
									1-Camera [17.
18	34.00	34.00	0.00	50.00	24	29	19	0.73	1-19" Standof

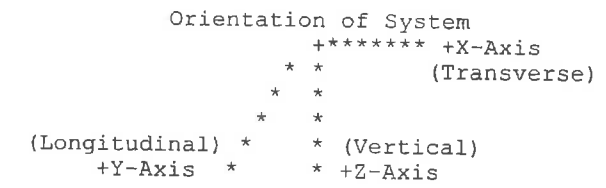
BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** INPUT LOADS ***

Design Code TIA-222-G Addendum 2
Loading Case ICE + WIND

Basic Wind Velocity is 30.00 mph Ice Thickness 0.25
Wind Orientation is 50.0 Degrees Clockwise From +X Axis
Structure Weight Overload Factor is 1.200
Exposure B, Gust Factor 1.10
Structure Category 3, Topographic Category 3, Crest Height 400.00 ft
Orientations are Measured Clockwise From +X Axis
Positive Y Axis is 90 Degrees Clockwise From +X Axis
Foundation Rotation of 0.00 Degrees
Elevation of structure base above surrounding terrain = 1.00 ft



Load Number	Mounting Height (ft)	Load Height (ft)	Load Eccentricity (ft)	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
1	169.00	171.00	0.00	50.00	2	3	28	0.92	1-4ft lightni
2	169.00	179.00	0.00	50.00	72	86	497	27.98	2-SC412-HF2LD
3	169.00	169.00	0.00	50.00	144	172	1939	56.00	4-6' Universa
4	166.00	166.00	0.00	50.00	209	249	1510	81.12	2-6' HIGH PER
5	164.00	164.00	0.00	50.00	48	57	448	18.67	1-4' HIGH PER
6	159.50	159.50	0.00	50.00	29	34	251	11.12	1-3' HP DISH
7	149.00	159.00	0.00	50.00	72	86	497	27.98	2-SC412-HF2LD
8	149.00	149.00	0.00	50.00	144	172	1939	56.00	4-6' Universa
9	154.00	154.00	0.00	50.00	253	302	2808	98.16	12-PANEL [8'
10	154.00	154.00	0.00	50.00	31	37	1073	11.88	3-T-arm SP1 3
11	146.00	146.00	0.00	50.00	209	249	1510	81.10	2-6' HIGH PER
12	127.50	127.50	0.00	50.00	12	14	151	4.70	1-dbSpectra U
13	109.00	118.00	0.00	50.00	42	50	286	16.28	2-CC807-11
14	109.00	109.00	0.00	50.00	143	170	1934	55.96	4-6' Universa
15	89.00	98.00	0.00	50.00	41	49	286	16.26	2-CC807-11
16	89.00	89.00	0.00	50.00	141	168	1934	55.88	4-6' Universa
17	34.00	34.00	0.00	50.00	9	10	158	3.89	1-Camera [17.

*** INPUT LOADS ***

Loading Case ICE + WIND - Continued

Load Number	Mounting Height [ft]	Load Height [ft]	Load Eccentricity [ft]	Orientation in XY Plane [Degrees]	Force-X [lbs]	Force-Y [lbs]	Force-Z [lbs]	EPA [ft^2]	Orientation of System
									1-Camera [17.
									1-Camera [17.
									1-Camera [17.
18	34.00	34.00	0.00	50.00	3	3	41	1.20	1-19" Standof

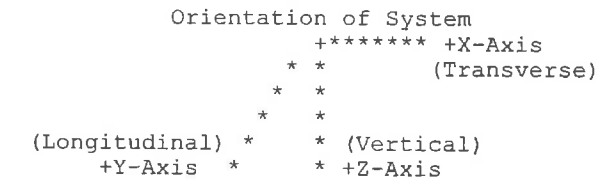
BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** INPUT LOADS ***

Design Code TIA-222-G Addendum 2
Loading Case T+S

Basic Wind Velocity is 60.00 mph Ice Thickness 0.00
Wind Orientation is 50.0 Degrees Clockwise From +X Axis
Structure Weight Overload Factor is 1.000
Exposure B, Gust Factor 1.10
Structure Category 3, Topographic Category 3, Crest Height 400.00 ft
Orientations are Measured Clockwise From +X Axis
Positive Y Axis is 90 Degrees Clockwise From +X Axis
Foundation Rotation of 0.00 Degrees
Elevation of structure base above surrounding terrain = 1.00 ft



Load Number	Mounting Height (ft)	Load Height (ft)	Load Eccentricity (ft)	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
1	169.00	171.00	0.00	50.00	2	3	10	0.25	1-4ft lightni
2	169.00	179.00	0.00	50.00	193	231	158	20.96	2-SC412-HF2LD
3	169.00	169.00	0.00	50.00	347	413	892	37.56	4-6' Universa
4	166.00	166.00	0.00	50.00	707	842	744	76.54	2-6' HIGH PER
5	164.00	164.00	0.00	50.00	159	189	253	17.18	1-4' HIGH PER
6	159.50	159.50	0.00	50.00	92	110	136	9.97	1-3' HP DISH
7	149.00	159.00	0.00	50.00	193	231	158	20.96	2-SC412-HF2LD
8	149.00	149.00	0.00	50.00	347	413	892	37.56	4-6' Universa
9	154.00	154.00	0.00	50.00	770	917	948	83.40	12-PANEL [8'
10	154.00	154.00	0.00	50.00	82	97	618	8.85	3-T-arm SP1 3
11	146.00	146.00	0.00	50.00	706	842	744	76.54	2-6' HIGH PER
12	127.50	127.50	0.00	50.00	37	44	61	4.05	1-dbSpectra U
13	109.00	118.00	0.00	50.00	96	114	98	10.44	2-CC807-11
14	109.00	109.00	0.00	50.00	344	409	892	37.56	4-6' Universa
15	89.00	98.00	0.00	50.00	95	113	98	10.44	2-CC807-11
16	89.00	89.00	0.00	50.00	339	404	892	37.56	4-6' Universa
17	34.00	34.00	0.00	50.00	26	31	83	3.29	1-Camera [17.

*** INPUT LOADS ***

Loading Case T+S - Continued

Load Number	Mounting Height [ft]	Load Height [ft]	Load Eccentricity [ft]	Orientation in XY Plane [Degrees]	Force-X [lbs]	Force-Y [lbs]	Force-Z [lbs]	EPA [ft^2]	Orientation of System
									1-Camera [17.
									1-Camera [17.
									1-Camera [17.
18	34.00	34.00	0.00	50.00	6	7	16	0.73	1-19" Standof

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** INPUT LOADS ***

Design Code TIA-222-G Addendum 2
Loading Case Seismic
Seismic analysis following the equivalent modal analysis procedure
Structure Category: 3
Site Class: D
Response Acceleration at short periods: 1.42
Response Acceleration at one second: 0.54
The above are used to obtain the acceleration and velocity based site coefficients Fa and Fv

Foundation Rotation of 0.00 Degrees
Elevation of structure base above surrounding terrain = 1.00 ft

Load Number	Mounting Height (ft)	Load Height (ft)	Load Eccentricity (ft)	Orientation in XY Plane (Degrees)	Force-X (lbs)	Force-Y (lbs)	Force-Z (lbs)	EPA (ft^2)	
1	169.00	171.00	0.00	50.00	0	0	12	0.25	1-4ft lightni
2	169.00	179.00	0.00	50.00	0	0	190	20.96	2-SC412-HF2LD
3	169.00	169.00	0.00	50.00	0	0	1070	37.56	4-6' Universa
4	166.00	166.00	0.00	50.00	0	0	893	76.54	2-6' HIGH PER
5	164.00	164.00	0.00	50.00	0	0	304	17.18	1-4' HIGH PER
6	159.50	159.50	0.00	50.00	0	0	163	9.97	1-3' HP DISH
7	149.00	159.00	0.00	50.00	0	0	190	20.96	2-SC412-HF2LD
8	149.00	149.00	0.00	50.00	0	0	1070	37.56	4-6' Universa
9	154.00	154.00	0.00	50.00	0	0	1138	83.40	12-PANEL [8'
10	154.00	154.00	0.00	50.00	0	0	742	8.85	3-T-arm SP1 3
11	146.00	146.00	0.00	50.00	0	0	893	76.54	2-6' HIGH PER
12	127.50	127.50	0.00	50.00	0	0	73	4.05	1-dbSpectra U
13	109.00	118.00	0.00	50.00	0	0	118	10.44	2-CC807-11
14	109.00	109.00	0.00	50.00	0	0	1070	37.56	4-6' Universa
15	89.00	98.00	0.00	50.00	0	0	118	10.44	2-CC807-11
16	89.00	89.00	0.00	50.00	0	0	1070	37.56	4-6' Universa
17	34.00	34.00	0.00	50.00	0	0	100	3.29	1-Camera [17.

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Fuse 1.13.0.0

*** INPUT LOADS ***

Loading Case Seismic - Continued

Load Number	Mounting Height [ft]	Load Height [ft]	Load Eccentricity [ft]	Orientation in XY Plane [Degrees]	Force-X [lbs]	Force-Y [lbs]	Force-Z [lbs]	EPA [ft^2]	Orientation of System
									1-Camera [17.
									1-Camera [17.
									1-Camera [17.
18	34.00	34.00	0.00	50.00	0	0	19	0.73	1-19" Standof

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** Properties ***

Connection Locations	Distance From Base (ft)	Diameter Across Flats (in)	Wall Thickness (in)	D/t Across Flats	w/t Across Flats	Moments of Inertia (in^4)	Area (in^2)
Top of Sect 4	169.00	47.000	0.3125	150.40	24.76	12748	46.31
EPA 4	166.00	47.666	0.3125	152.53	25.13	13301	46.97
EPA 5	164.00	48.110	0.3125	153.95	25.38	13679	47.41
EPA 6	159.50	49.108	0.3125	157.15	25.95	14554	48.40
	159.00	49.219	0.3125	157.50	26.01	14653	48.51
EPA 9	154.00	50.329	0.3125	161.05	26.63	15673	49.61
EPA 7	149.00	51.438	0.3125	164.60	27.26	16740	50.71
EPA 11	146.00	52.104	0.3125	166.73	27.64	17402	51.37
	144.00	52.548	0.3125	168.15	27.89	17853	51.81
	139.00	53.657	0.3125	171.70	28.51	19015	52.91
	134.00	54.766	0.3125	175.25	29.14	20227	54.01
	129.00	55.876	0.3125	178.80	29.76	21488	55.11
EPA 12	127.50	56.209	0.3125	179.87	29.95	21877	55.44
	124.00	56.985	0.3125	182.35	30.39	22801	56.21
Top of Sect 3	124.00	56.360	0.4375	128.82	20.95	30671	77.65
	119.00	57.470	0.4375	131.36	21.40	32533	79.19
Base of Sect 4	116.08	58.117	0.4375	132.84	21.66	33653	80.09
	114.00	58.579	0.4375	133.90	21.85	34469	80.73
EPA 13	109.00	59.689	0.4375	136.43	22.29	36480	82.27
	104.00	60.798	0.4375	138.97	22.74	38568	83.82
	99.00	61.908	0.4375	141.50	23.19	40734	85.36
	94.00	63.017	0.4375	144.04	23.63	42980	86.90
EPA 15	89.00	64.127	0.4375	146.58	24.08	45306	88.44
	85.00	65.014	0.4375	148.60	24.44	47227	89.67
Top of Sect 2	85.00	64.139	0.5000	128.28	20.86	51657	100.99
	84.00	64.361	0.5000	128.72	20.93	52199	101.34
	79.00	65.471	0.5000	130.94	21.33	54968	103.10
Base of Sect 3	76.08	66.118	0.5000	132.24	21.55	56627	104.13
	74.00	66.580	0.5000	133.16	21.72	57832	104.87
	69.00	67.689	0.5000	135.38	22.11	60794	106.63
	64.00	68.799	0.5000	137.60	22.50	63855	108.39
	59.00	69.908	0.5000	139.82	22.89	67018	110.15
	54.00	71.018	0.5000	142.04	23.28	70283	111.91
	49.00	72.127	0.5000	144.25	23.67	73653	113.67
	48.00	72.349	0.5000	144.70	23.75	74340	114.02
Top of Sect 1	48.00	71.349	0.6250	114.16	18.37	88629	140.29
	44.00	72.237	0.6250	115.58	18.62	92007	142.05

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

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*** Properties ***

Connection Locations	Distance From Base (ft)	Diameter Across Flats (in)	Wall Thickness (in)	D/t Across Flats	w/t Across Flats	Moments of Inertia (in^4)	Area (in^2)
	39.00	73.346	0.6250	117.35	18.93	96350	144.26
Base of Sect 2	38.08	73.550	0.6250	117.68	18.99	97161	144.66
EPA 17	34.00	74.456	0.6250	119.13	19.24	100828	146.46
	29.00	75.565	0.6250	120.90	19.56	105442	148.66
	24.00	76.675	0.6250	122.68	19.87	110194	150.86
	19.00	77.784	0.6250	124.45	20.18	115088	153.06
	14.00	78.894	0.6250	126.23	20.49	120124	155.26
	9.00	80.003	0.6250	128.00	20.81	125305	157.46
	4.00	81.112	0.6250	129.78	21.12	130633	159.66
Pt of Fixity	0.00	82.000	0.6250	131.20	21.37	135002	161.42

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
169.00	115	-96	150	0	2266	2700	3525	1153
166.00	219	-184	286	0	2571	3064	4000	1724
166.00	219	-184	286	0	5505	6561	8564	2462
164.00	379	-318	495	0	5711	6806	8885	2847
164.00	379	-318	495	0	6372	7594	9913	3117
159.50	804	-675	1050	0	6842	8154	10645	3996
159.50	804	-675	1050	0	7225	8611	11240	4140
159.00	856	-718	1118	0	7278	8673	11322	4240
154.00	1396	-1171	1822	0	7813	9311	12155	5241
154.00	1396	-1171	1822	0	11365	13544	17680	6939
149.00	2228	-1869	2908	0	11911	14195	18531	7963
149.00	2343	-1966	3058	0	14165	16881	22036	9112
146.00	2957	-2482	3861	0	14498	17278	22555	9737
146.00	2957	-2482	3861	0	17428	20770	27114	10485
144.00	3459	-2903	4516	0	17650	21035	27459	10917
139.00	4742	-3979	6190	0	18215	21707	28337	12004
134.00	6065	-5089	7917	0	18788	22391	29230	13119
129.00	7429	-6234	9698	0	19374	23090	30141	14249
127.50	7847	-6584	10243	0	19554	23304	30421	14588
127.50	7847	-6584	10243	0	19704	23483	30655	14669
124.00	8844	-7421	11545	0	20127	23986	31312	15466
124.00	8844	-7421	11545	0	20119	23977	31300	15490
119.00	10305	-8647	13453	0	20754	24734	32288	18271
116.08	11179	-9380	14593	0	21128	25179	32869	19919
114.00	11812	-9912	15420	0	21381	25480	33262	20625
109.00	13364	-11214	17445	0	22015	26236	34249	22289
109.00	13415	-11257	17512	0	23834	28404	37079	23436
104.00	15142	-12706	19767	0	24461	29151	38054	25171
99.00	16915	-14193	22081	0	25094	29906	39040	26941
94.00	18733	-15719	24454	0	25734	30669	40035	28746
89.00	20597	-17283	26887	0	26404	31467	41077	30535
89.00	20647	-17325	26953	0	28191	33596	43857	31707
85.00	22276	-18691	29079	0	28732	34241	44699	33161
85.00	22276	-18691	29079	0	28719	34226	44678	33189
84.00	22687	-19037	29616	0	28845	34376	44874	34001
79.00	24775	-20789	32342	0	29533	35196	45946	37984
76.08	26016	-21830	33961	0	29935	35675	46571	40341
74.00	26912	-22582	35131	0	30197	35988	46978	41272
69.00	29096	-24414	37982	0	30851	36767	47996	43493
64.00	31327	-26286	40894	0	31506	37548	49015	45752

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
59.00	33605	-28198	43868	0	32162	38329	50035	48051
54.00	35929	-30148	46902	0	32817	39110	51054	50388
49.00	38301	-32138	49998	0	33488	39910	52098	52734
48.00	38781	-32541	50625	0	33628	40076	52316	53199
48.00	38781	-32541	50625	0	33607	40051	52283	53231
44.00	40720	-34168	53156	0	34142	40689	53116	57468
39.00	43187	-36238	56376	0	34828	41506	54182	62804
38.08	43644	-36622	56973	0	34933	41631	54346	63817
34.00	45700	-38347	59657	0	35490	42295	55212	66243
34.00	45700	-38347	59657	0	35575	42397	55345	66422
29.00	48268	-40502	63010	0	36193	43133	56306	69504
24.00	50880	-42694	66419	0	36809	43867	57264	72633
19.00	53537	-44923	69888	0	37439	44619	58245	75809
14.00	56239	-47190	73415	0	38085	45388	59249	79031
9.00	58989	-49497	77004	0	38746	46175	60278	82300
4.00	61786	-51845	80656	0	39430	46990	61341	85608
0.00	64059	-53752	83623	0	40041	47719	62293	88230

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

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Deflections and Stresses for Pole

Loading Case WIND

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
169.00	26.2	31.2	40.8	0.6	1.95	0.00	0.00	0.01	0.00	0.01	72.28
166.00	25.4	30.3	39.6	0.5	1.95	0.00	0.01	0.01	0.00	0.01	71.84
166.00	25.4	30.3	39.6	0.5	1.95	0.00	0.01	0.01	0.00	0.01	71.84
164.00	24.9	29.7	38.7	0.5	1.95	0.00	0.01	0.01	0.00	0.01	71.55
164.00	24.9	29.7	38.7	0.5	1.95	0.00	0.01	0.01	0.00	0.02	71.55
159.50	23.7	28.3	36.9	0.5	1.94	0.00	0.03	0.02	0.00	0.03	70.88
159.50	23.7	28.3	36.9	0.5	1.94	0.00	0.03	0.02	0.00	0.03	70.88
159.00	23.6	28.1	36.7	0.5	1.94	0.00	0.03	0.02	0.00	0.03	70.81
154.00	22.3	26.6	34.7	0.4	1.93	0.00	0.05	0.02	0.00	0.05	70.07
154.00	22.3	26.6	34.7	0.4	1.93	0.00	0.05	0.02	0.00	0.05	70.07
149.00	21.0	25.0	32.7	0.4	1.91	0.00	0.07	0.03	0.00	0.08	69.34
149.00	21.0	25.0	32.7	0.4	1.91	0.00	0.08	0.03	0.00	0.08	69.34
146.00	20.2	24.1	31.5	0.4	1.90	0.00	0.09	0.03	0.00	0.10	68.90
146.00	20.2	24.1	31.5	0.4	1.90	0.00	0.09	0.04	0.00	0.10	68.90
144.00	19.7	23.5	30.7	0.4	1.89	0.00	0.11	0.04	0.00	0.11	68.60
139.00	18.5	22.0	28.7	0.3	1.85	0.00	0.15	0.04	0.00	0.15	67.87
134.00	17.2	20.5	26.8	0.3	1.81	0.00	0.18	0.04	0.00	0.19	67.13
129.00	16.0	19.1	24.9	0.3	1.76	0.00	0.21	0.04	0.00	0.22	66.39
127.50	15.7	18.7	24.4	0.3	1.74	0.00	0.22	0.04	0.00	0.23	66.17
127.50	15.7	18.7	24.4	0.3	1.74	0.00	0.22	0.04	0.00	0.23	66.17
124.00	14.9	17.7	23.1	0.3	1.70	0.00	0.25	0.04	0.00	0.25	65.66
124.00	14.9	17.7	23.1	0.3	1.70	0.00	0.16	0.03	0.00	0.16	76.76
119.00	13.7	16.4	21.4	0.2	1.65	0.00	0.18	0.03	0.00	0.18	76.23
116.08	13.1	15.6	20.4	0.2	1.63	0.00	0.19	0.03	0.00	0.19	75.92
114.00	12.6	15.1	19.7	0.2	1.60	0.00	0.20	0.03	0.00	0.20	75.71
109.00	11.6	13.8	18.0	0.2	1.55	0.00	0.21	0.03	0.00	0.22	75.18
109.00	11.6	13.8	18.0	0.2	1.55	0.00	0.22	0.03	0.00	0.22	75.18
104.00	10.6	12.6	16.4	0.2	1.49	0.00	0.24	0.03	0.00	0.24	74.65
99.00	9.6	11.4	14.9	0.1	1.43	0.01	0.26	0.03	0.00	0.26	74.13
94.00	8.6	10.3	13.4	0.1	1.36	0.01	0.27	0.03	0.00	0.28	73.60
89.00	7.7	9.2	12.0	0.1	1.29	0.01	0.29	0.03	0.00	0.30	73.08
89.00	7.7	9.2	12.0	0.1	1.29	0.01	0.29	0.03	0.00	0.30	73.08
85.00	7.1	8.4	11.0	0.1	1.23	0.01	0.31	0.03	0.00	0.32	72.66
85.00	7.1	8.4	11.0	0.1	1.23	0.01	0.26	0.03	0.00	0.27	76.87
84.00	6.9	8.2	10.7	0.1	1.22	0.01	0.27	0.03	0.00	0.27	76.78
79.00	6.1	7.3	9.5	0.1	1.15	0.01	0.28	0.03	0.00	0.29	76.32
76.08	5.6	6.7	8.8	0.1	1.11	0.01	0.29	0.03	0.00	0.30	76.05
74.00	5.3	6.4	8.3	0.1	1.08	0.01	0.30	0.03	0.00	0.31	75.86
69.00	4.6	5.5	7.2	0.1	1.01	0.01	0.32	0.03	0.00	0.32	75.40

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543 DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case WIND *** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
64.00	4.0	4.7	6.2	0.0	0.93	0.01	0.33	0.03	0.00	0.34	74.94
59.00	3.4	4.0	5.3	0.0	0.86	0.01	0.35	0.03	0.00	0.35	74.48
54.00	2.8	3.4	4.4	0.0	0.78	0.01	0.36	0.03	0.00	0.37	74.02
49.00	2.3	2.8	3.6	0.0	0.70	0.01	0.38	0.03	0.00	0.38	73.56
48.00	2.2	2.7	3.5	0.0	0.68	0.01	0.38	0.03	0.00	0.39	73.47
48.00	2.2	2.7	3.5	0.0	0.68	0.01	0.29	0.03	0.00	0.29	79.80
44.00	1.9	2.2	2.9	0.0	0.63	0.01	0.30	0.03	0.00	0.30	79.50
39.00	1.5	1.8	2.3	0.0	0.56	0.01	0.31	0.03	0.00	0.31	79.14
38.08	1.4	1.7	2.2	0.0	0.55	0.01	0.31	0.03	0.00	0.31	79.07
34.00	1.1	1.3	1.8	0.0	0.49	0.01	0.32	0.03	0.00	0.32	78.77
34.00	1.1	1.3	1.8	0.0	0.49	0.01	0.32	0.03	0.00	0.32	78.77
29.00	0.8	1.0	1.3	0.0	0.42	0.01	0.32	0.03	0.00	0.33	78.40
24.00	0.6	0.7	0.9	0.0	0.35	0.01	0.33	0.03	0.00	0.34	78.03
19.00	0.4	0.4	0.6	0.0	0.28	0.01	0.34	0.03	0.00	0.35	77.66
14.00	0.2	0.2	0.3	0.0	0.20	0.01	0.35	0.03	0.00	0.36	77.30
9.00	0.1	0.1	0.1	0.0	0.13	0.01	0.36	0.03	0.00	0.37	76.93
4.00	0.0	0.0	0.0	0.0	0.06	0.01	0.37	0.03	0.00	0.38	76.56
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.38	0.03	0.00	0.38	76.26

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case ICE + WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
169.00	11	-9	14	0	224	267	349	2462
166.00	21	-18	27	0	264	314	410	3180
166.00	21	-18	27	0	476	567	741	4688
164.00	35	-29	46	0	503	599	782	5172
164.00	35	-29	46	0	552	658	858	5619
159.50	72	-61	95	0	612	730	953	6725
159.50	72	-61	95	0	642	765	998	6975
159.00	77	-65	101	0	648	773	1009	7099
154.00	126	-106	164	0	717	855	1116	8357
154.00	126	-106	164	0	1009	1203	1570	12236
149.00	201	-168	262	0	1080	1287	1680	13522
149.00	211	-177	276	0	1301	1550	2024	15957
146.00	268	-225	350	0	1344	1602	2091	16742
146.00	268	-225	350	0	1556	1854	2420	18251
144.00	313	-262	408	0	1584	1888	2465	18780
139.00	429	-360	560	0	1657	1975	2578	20122
134.00	550	-461	718	0	1731	2062	2692	21492
129.00	676	-567	883	0	1806	2152	2809	22891
127.50	715	-600	934	0	1829	2180	2845	23316
127.50	715	-600	934	0	1841	2193	2863	23467
124.00	809	-679	1056	0	1895	2258	2948	24468
124.00	809	-679	1056	0	1894	2257	2946	24468
119.00	947	-795	1236	0	1975	2353	3072	27732
116.08	1030	-865	1345	0	2022	2410	3146	29664
114.00	1091	-916	1424	0	2055	2449	3196	30473
109.00	1241	-1041	1620	0	2136	2545	3323	32440
109.00	1246	-1046	1627	0	2322	2768	3613	34660
104.00	1415	-1188	1848	0	2402	2863	3737	36664
99.00	1590	-1334	2076	0	2483	2959	3863	38705
94.00	1771	-1486	2312	0	2565	3057	3990	40783
89.00	1957	-1642	2555	0	2650	3159	4123	42897
89.00	1963	-1647	2562	0	2833	3376	4407	45117
85.00	2127	-1784	2776	0	2902	3459	4515	46834
85.00	2127	-1784	2776	0	2900	3457	4512	46835
84.00	2168	-1819	2830	0	2916	3476	4537	47738
79.00	2380	-1997	3107	0	3004	3580	4673	52301
76.08	2506	-2103	3272	0	3055	3641	4753	54998
74.00	2598	-2180	3391	0	3088	3680	4804	56028
69.00	2822	-2368	3684	0	3172	3780	4934	58527
64.00	3052	-2561	3984	0	3255	3879	5064	61067

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case ICE + WIND

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
59.00	3288	-2759	4292	0	3339	3979	5194	63648
54.00	3530	-2962	4608	0	3422	4078	5324	66268
49.00	3778	-3170	4931	0	3508	4180	5457	68928
48.00	3828	-3212	4997	0	3525	4201	5485	69465
48.00	3828	-3212	4997	0	3523	4198	5480	69466
44.00	4032	-3383	5263	0	3591	4279	5586	74161
39.00	4292	-3601	5602	0	3678	4383	5722	80108
38.08	4340	-3642	5665	0	3691	4399	5742	81208
34.00	4557	-3824	5949	0	3762	4483	5853	83930
34.00	4557	-3824	5949	0	3767	4490	5861	84130
29.00	4830	-4053	6305	0	3846	4584	5983	87506
24.00	5108	-4286	6668	0	3925	4677	6106	90928
19.00	5392	-4524	7038	0	4005	4773	6231	94395
14.00	5681	-4767	7416	0	4087	4871	6359	97904
9.00	5977	-5015	7802	0	4171	4971	6489	101452
4.00	6279	-5268	8196	0	4258	5075	6625	105032
0.00	6524	-5475	8517	0	4336	5167	6746	107901

Deflections and Stresses for Pole

Loading Case ICE + WIND

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
169.00	2.6	3.1	4.0	0.0	0.19	0.00	0.00	0.00	0.00	0.01	72.28
166.00	2.5	3.0	3.9	0.0	0.19	0.00	0.00	0.00	0.00	0.01	71.84
166.00	2.5	3.0	3.9	0.0	0.19	0.00	0.00	0.00	0.00	0.01	71.84
164.00	2.4	2.9	3.8	0.0	0.19	0.00	0.00	0.00	0.00	0.01	71.55
164.00	2.4	2.9	3.8	0.0	0.19	0.00	0.00	0.00	0.00	0.01	71.55
159.50	2.3	2.8	3.6	0.0	0.19	0.00	0.00	0.00	0.00	0.01	70.88
159.50	2.3	2.8	3.6	0.0	0.19	0.00	0.00	0.00	0.00	0.01	70.88
159.00	2.3	2.8	3.6	0.0	0.19	0.00	0.00	0.00	0.00	0.01	70.81
154.00	2.2	2.6	3.4	0.0	0.19	0.00	0.00	0.00	0.00	0.01	70.07
154.00	2.2	2.6	3.4	0.0	0.19	0.00	0.00	0.00	0.00	0.01	70.07
149.00	2.1	2.5	3.2	0.0	0.18	0.00	0.01	0.00	0.00	0.01	69.34
149.00	2.1	2.5	3.2	0.0	0.18	0.01	0.01	0.00	0.00	0.01	69.34
146.00	2.0	2.4	3.1	0.0	0.18	0.01	0.01	0.00	0.00	0.01	68.90
146.00	2.0	2.4	3.1	0.0	0.18	0.01	0.01	0.00	0.00	0.01	68.90
144.00	1.9	2.3	3.0	0.0	0.18	0.01	0.01	0.00	0.00	0.02	68.60
139.00	1.8	2.2	2.8	0.0	0.18	0.01	0.01	0.00	0.00	0.02	67.87
134.00	1.7	2.0	2.6	0.0	0.18	0.01	0.02	0.00	0.00	0.02	67.13
129.00	1.6	1.9	2.5	0.0	0.17	0.01	0.02	0.00	0.00	0.03	66.39
127.50	1.6	1.8	2.4	0.0	0.17	0.01	0.02	0.00	0.00	0.03	66.17
127.50	1.6	1.8	2.4	0.0	0.17	0.01	0.02	0.00	0.00	0.03	66.17
124.00	1.5	1.8	2.3	0.0	0.17	0.01	0.02	0.00	0.00	0.03	65.66
124.00	1.5	1.8	2.3	0.0	0.17	0.00	0.01	0.00	0.00	0.02	76.76
119.00	1.4	1.6	2.1	0.0	0.16	0.01	0.02	0.00	0.00	0.02	76.23
116.08	1.3	1.5	2.0	0.0	0.16	0.01	0.02	0.00	0.00	0.02	75.92
114.00	1.3	1.5	2.0	0.0	0.16	0.01	0.02	0.00	0.00	0.02	75.71
109.00	1.2	1.4	1.8	0.0	0.15	0.01	0.02	0.00	0.00	0.03	75.18
109.00	1.2	1.4	1.8	0.0	0.15	0.01	0.02	0.00	0.00	0.03	75.18
104.00	1.1	1.3	1.6	0.0	0.15	0.01	0.02	0.00	0.00	0.03	74.65
99.00	1.0	1.1	1.5	0.0	0.14	0.01	0.02	0.00	0.00	0.03	74.13
94.00	0.9	1.0	1.3	0.0	0.13	0.01	0.03	0.00	0.00	0.03	73.60
89.00	0.8	0.9	1.2	0.0	0.13	0.01	0.03	0.00	0.00	0.04	73.08
89.00	0.8	0.9	1.2	0.0	0.13	0.01	0.03	0.00	0.00	0.04	73.08
85.00	0.7	0.8	1.1	0.0	0.12	0.01	0.03	0.00	0.00	0.04	72.66
85.00	0.7	0.8	1.1	0.0	0.12	0.01	0.03	0.00	0.00	0.03	76.87
84.00	0.7	0.8	1.1	0.0	0.12	0.01	0.03	0.00	0.00	0.03	76.78
79.00	0.6	0.7	0.9	0.0	0.11	0.01	0.03	0.00	0.00	0.04	76.32
76.08	0.6	0.7	0.9	0.0	0.11	0.01	0.03	0.00	0.00	0.04	76.05
74.00	0.5	0.6	0.8	0.0	0.11	0.01	0.03	0.00	0.00	0.04	75.86
69.00	0.5	0.6	0.7	0.0	0.10	0.01	0.03	0.00	0.00	0.04	75.40

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case ICE + WIND

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
64.00	0.4	0.5	0.6	0.0	0.09	0.01	0.03	0.00	0.00	0.04	74.94
59.00	0.3	0.4	0.5	0.0	0.09	0.01	0.03	0.00	0.00	0.04	74.48
54.00	0.3	0.3	0.4	0.0	0.08	0.01	0.04	0.00	0.00	0.04	74.02
49.00	0.2	0.3	0.4	0.0	0.07	0.01	0.04	0.00	0.00	0.05	73.56
48.00	0.2	0.3	0.4	0.0	0.07	0.01	0.04	0.00	0.00	0.05	73.47
48.00	0.2	0.3	0.4	0.0	0.07	0.01	0.03	0.00	0.00	0.04	79.80
44.00	0.2	0.2	0.3	0.0	0.06	0.01	0.03	0.00	0.00	0.04	79.50
39.00	0.2	0.2	0.2	0.0	0.06	0.01	0.03	0.00	0.00	0.04	79.14
38.08	0.1	0.2	0.2	0.0	0.06	0.01	0.03	0.00	0.00	0.04	79.07
34.00	0.1	0.1	0.2	0.0	0.05	0.01	0.03	0.00	0.00	0.04	78.77
34.00	0.1	0.1	0.2	0.0	0.05	0.01	0.03	0.00	0.00	0.04	78.77
29.00	0.1	0.1	0.1	0.0	0.04	0.01	0.03	0.00	0.00	0.04	78.40
24.00	0.1	0.1	0.1	0.0	0.04	0.01	0.03	0.00	0.00	0.04	78.03
19.00	0.0	0.0	0.1	0.0	0.03	0.01	0.03	0.00	0.00	0.04	77.66
14.00	0.0	0.0	0.0	0.0	0.02	0.01	0.04	0.00	0.00	0.05	77.30
9.00	0.0	0.0	0.0	0.0	0.01	0.01	0.04	0.00	0.00	0.05	76.93
4.00	0.0	0.0	0.0	0.0	0.01	0.01	0.04	0.00	0.00	0.05	76.56
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.04	0.00	0.00	0.05	76.26

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case T+S

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
169.00	28	-23	36	0	548	653	853	1053
166.00	53	-44	69	0	622	741	967	1529
166.00	53	-44	69	0	1332	1588	2072	2264
164.00	92	-77	120	0	1382	1647	2150	2585
164.00	92	-77	120	0	1542	1837	2398	2836
159.50	195	-163	254	0	1655	1972	2575	3570
159.50	195	-163	254	0	1748	2083	2719	3705
159.00	207	-174	270	0	1760	2098	2738	3787
154.00	338	-283	441	0	1889	2251	2939	4622
154.00	338	-283	441	0	2748	3276	4276	6177
149.00	539	-452	703	0	2880	3432	4481	7030
149.00	567	-475	740	0	3425	4082	5329	8074
146.00	715	-600	934	0	3506	4178	5454	8595
146.00	715	-600	934	0	4215	5024	6558	9330
144.00	837	-702	1092	0	4269	5087	6641	9682
139.00	1147	-962	1497	0	4405	5249	6853	10574
134.00	1467	-1231	1915	0	4543	5414	7068	11485
129.00	1797	-1508	2345	0	4684	5583	7288	12414
127.50	1898	-1592	2477	0	4728	5634	7355	12696
127.50	1898	-1592	2477	0	4764	5678	7412	12758
124.00	2139	-1795	2792	0	4866	5799	7570	13423
124.00	2139	-1795	2792	0	4864	5797	7568	13424
119.00	2492	-2091	3253	0	5016	5978	7804	15725
116.08	2703	-2268	3529	0	5106	6085	7944	17088
114.00	2856	-2397	3729	0	5167	6158	8039	17660
109.00	3231	-2711	4218	0	5320	6340	8276	19047
109.00	3244	-2722	4234	0	5760	6865	8961	20034
104.00	3661	-3072	4779	0	5911	7045	9197	21449
99.00	4089	-3431	5338	0	6065	7228	9435	22891
94.00	4529	-3800	5912	0	6219	7412	9676	24359
89.00	4979	-4178	6500	0	6381	7604	9926	25851
89.00	4991	-4188	6516	0	6814	8120	10600	26840
85.00	5385	-4518	7029	0	6944	8276	10803	28052
85.00	5385	-4518	7029	0	6941	8272	10799	28053
84.00	5484	-4602	7159	0	6972	8309	10847	28705
79.00	5989	-5025	7818	0	7138	8506	11104	31991
76.08	6289	-5277	8209	0	7235	8622	11255	33934
74.00	6505	-5459	8492	0	7299	8698	11355	34677
69.00	7033	-5902	9181	0	7457	8887	11602	36480
64.00	7572	-6354	9885	0	7617	9077	11850	38313

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case T+S

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
59.00	8123	-6816	10604	0	7776	9268	12098	40176
54.00	8685	-7288	11338	0	7936	9458	12346	42069
49.00	9259	-7769	12086	0	8099	9652	12600	43990
48.00	9375	-7866	12238	0	8133	9692	12652	44378
48.00	9375	-7866	12238	0	8129	9687	12646	44379
44.00	9844	-8260	12850	0	8259	9842	12848	47866
39.00	10440	-8760	13629	0	8424	10040	13106	52283
38.08	10551	-8853	13773	0	8451	10071	13147	53101
34.00	11048	-9271	14423	0	8585	10231	13356	55124
34.00	11048	-9271	14423	0	8608	10258	13391	55226
29.00	11670	-9792	15234	0	8759	10439	13627	57741
24.00	12302	-10322	16059	0	8910	10619	13862	60293
19.00	12945	-10862	16898	0	9065	10803	14103	62883
14.00	13599	-11411	17753	0	9224	10992	14350	65510
9.00	14265	-11970	18622	0	9386	11186	14603	68175
4.00	14943	-12538	19506	0	9555	11387	14864	70876
0.00	15494	-13001	20225	0	9703	11563	15095	73062

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case T+S

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
169.00	6.3	7.6	9.9	0.1	0.47	0.00	0.00	0.00	0.00	0.01	72.28
166.00	6.1	7.3	9.6	0.0	0.47	0.00	0.00	0.00	0.00	0.01	71.84
166.00	6.1	7.3	9.6	0.0	0.47	0.00	0.00	0.00	0.00	0.01	71.84
164.00	6.0	7.2	9.4	0.0	0.47	0.00	0.00	0.00	0.00	0.01	71.55
164.00	6.0	7.2	9.4	0.0	0.47	0.00	0.00	0.00	0.00	0.01	71.55
159.50	5.7	6.8	8.9	0.0	0.47	0.00	0.01	0.00	0.00	0.01	70.88
159.50	5.7	6.8	8.9	0.0	0.47	0.00	0.01	0.00	0.00	0.01	70.88
159.00	5.7	6.8	8.9	0.0	0.47	0.00	0.01	0.00	0.00	0.01	70.81
154.00	5.4	6.4	8.4	0.0	0.47	0.00	0.01	0.00	0.00	0.01	70.07
154.00	5.4	6.4	8.4	0.0	0.47	0.00	0.01	0.01	0.00	0.01	70.07
149.00	5.1	6.1	7.9	0.0	0.46	0.00	0.02	0.01	0.00	0.02	69.34
149.00	5.1	6.1	7.9	0.0	0.46	0.00	0.02	0.01	0.00	0.02	69.34
146.00	4.9	5.8	7.6	0.0	0.46	0.00	0.02	0.01	0.00	0.03	68.90
146.00	4.9	5.8	7.6	0.0	0.46	0.00	0.02	0.01	0.00	0.03	68.90
144.00	4.8	5.7	7.4	0.0	0.46	0.00	0.03	0.01	0.00	0.03	68.60
139.00	4.5	5.3	6.9	0.0	0.45	0.00	0.04	0.01	0.00	0.04	67.87
134.00	4.2	5.0	6.5	0.0	0.44	0.00	0.04	0.01	0.00	0.05	67.13
129.00	3.9	4.6	6.0	0.0	0.43	0.00	0.05	0.01	0.00	0.06	66.39
127.50	3.8	4.5	5.9	0.0	0.42	0.00	0.05	0.01	0.00	0.06	66.17
127.50	3.8	4.5	5.9	0.0	0.42	0.00	0.05	0.01	0.00	0.06	66.17
124.00	3.6	4.3	5.6	0.0	0.41	0.00	0.06	0.01	0.00	0.06	65.66
124.00	3.6	4.3	5.6	0.0	0.41	0.00	0.04	0.01	0.00	0.04	76.76
119.00	3.3	4.0	5.2	0.0	0.40	0.00	0.04	0.01	0.00	0.05	76.23
116.08	3.2	3.8	4.9	0.0	0.39	0.00	0.05	0.01	0.00	0.05	75.92
114.00	3.1	3.6	4.8	0.0	0.39	0.00	0.05	0.01	0.00	0.05	75.71
109.00	2.8	3.3	4.4	0.0	0.37	0.00	0.05	0.01	0.00	0.06	75.18
109.00	2.8	3.3	4.4	0.0	0.37	0.00	0.05	0.01	0.00	0.06	75.18
104.00	2.6	3.0	4.0	0.0	0.36	0.00	0.06	0.01	0.00	0.06	74.65
99.00	2.3	2.8	3.6	0.0	0.35	0.00	0.06	0.01	0.00	0.07	74.13
94.00	2.1	2.5	3.2	0.0	0.33	0.00	0.07	0.01	0.00	0.07	73.60
89.00	1.9	2.2	2.9	0.0	0.31	0.00	0.07	0.01	0.00	0.08	73.08
89.00	1.9	2.2	2.9	0.0	0.31	0.00	0.07	0.01	0.00	0.08	73.08
85.00	1.7	2.0	2.7	0.0	0.30	0.01	0.08	0.01	0.00	0.08	72.66
85.00	1.7	2.0	2.7	0.0	0.30	0.00	0.06	0.01	0.00	0.07	76.87
84.00	1.7	2.0	2.6	0.0	0.30	0.00	0.06	0.01	0.00	0.07	76.78
79.00	1.5	1.8	2.3	0.0	0.28	0.00	0.07	0.01	0.00	0.07	76.32
76.08	1.4	1.6	2.1	0.0	0.27	0.01	0.07	0.01	0.00	0.08	76.05
74.00	1.3	1.5	2.0	0.0	0.26	0.01	0.07	0.01	0.00	0.08	75.86
69.00	1.1	1.3	1.7	0.0	0.24	0.01	0.08	0.01	0.00	0.08	75.40

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case T+S

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
64.00	1.0	1.1	1.5	0.0	0.23	0.01	0.08	0.01	0.00	0.09	74.94
59.00	0.8	1.0	1.3	0.0	0.21	0.01	0.08	0.01	0.00	0.09	74.48
54.00	0.7	0.8	1.1	0.0	0.19	0.01	0.09	0.01	0.00	0.09	74.02
49.00	0.6	0.7	0.9	0.0	0.17	0.01	0.09	0.01	0.00	0.10	73.56
48.00	0.5	0.6	0.8	0.0	0.17	0.01	0.09	0.01	0.00	0.10	73.47
48.00	0.5	0.6	0.8	0.0	0.17	0.00	0.07	0.01	0.00	0.07	79.80
44.00	0.5	0.5	0.7	0.0	0.15	0.00	0.07	0.01	0.00	0.08	79.50
39.00	0.4	0.4	0.6	0.0	0.14	0.01	0.07	0.01	0.00	0.08	79.14
38.08	0.3	0.4	0.5	0.0	0.13	0.01	0.07	0.01	0.00	0.08	79.07
34.00	0.3	0.3	0.4	0.0	0.12	0.01	0.08	0.01	0.00	0.08	78.77
34.00	0.3	0.3	0.4	0.0	0.12	0.01	0.08	0.01	0.00	0.08	78.77
29.00	0.2	0.2	0.3	0.0	0.10	0.01	0.08	0.01	0.00	0.08	78.40
24.00	0.1	0.2	0.2	0.0	0.08	0.01	0.08	0.01	0.00	0.09	78.03
19.00	0.1	0.1	0.1	0.0	0.07	0.01	0.08	0.01	0.00	0.09	77.66
14.00	0.0	0.1	0.1	0.0	0.05	0.01	0.09	0.01	0.00	0.09	77.30
9.00	0.0	0.0	0.0	0.0	0.03	0.01	0.09	0.01	0.00	0.09	76.93
4.00	0.0	0.0	0.0	0.0	0.01	0.01	0.09	0.01	0.00	0.10	76.56
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.09	0.01	0.00	0.10	76.26

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case Seismic

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
169.00	39	-33	51	0	1354	1614	2107	1245
166.00	108	-91	142	0	1895	2258	2948	1806
166.00	108	-91	142	0	2691	3208	4187	2683
164.00	190	-160	248	0	3022	3601	4701	3062
164.00	190	-160	248	0	3271	3899	5089	3361
159.50	422	-354	551	0	3929	4683	6113	4229
159.50	422	-354	551	0	4040	4814	6285	4390
159.00	451	-378	589	0	4106	4893	6387	4488
154.00	766	-642	999	0	4693	5593	7301	5478
154.00	766	-642	999	0	5664	6751	8812	7340
149.00	1187	-996	1550	0	6127	7302	9532	8355
149.00	1205	-1011	1573	0	6670	7949	10377	9606
146.00	1496	-1255	1953	0	6893	8215	10724	10227
146.00	1496	-1255	1953	0	7181	8558	11172	11116
144.00	1703	-1429	2223	0	7307	8709	11368	11537
139.00	2235	-1875	2917	0	7556	9004	11754	12605
134.00	2781	-2333	3630	0	7718	9198	12007	13698
129.00	3336	-2799	4355	0	7811	9309	12151	14814
127.50	3504	-2940	4574	0	7828	9329	12179	15152
127.50	3504	-2940	4574	0	7829	9331	12180	15228
124.00	3896	-3269	5086	0	7854	9360	12218	16025
124.00	3896	-3269	5086	0	7850	9355	12213	16029
119.00	4458	-3741	5820	0	7855	9361	12220	18793
116.08	4785	-4015	6247	0	7831	9333	12183	20430
114.00	5018	-4211	6551	0	7815	9313	12158	21118
109.00	5576	-4679	7279	0	7781	9273	12105	22783
109.00	5576	-4679	7279	0	7753	9240	12062	23976
104.00	6129	-5143	8001	0	7722	9203	12014	25677
99.00	6682	-5607	8722	0	7716	9196	12004	27410
94.00	7235	-6071	9444	0	7745	9230	12049	29173
89.00	7791	-6538	10171	0	7824	9324	12172	30962
89.00	7792	-6538	10171	0	7877	9387	12254	32154
85.00	8245	-6918	10763	0	7970	9498	12399	33608
85.00	8245	-6918	10763	0	7965	9492	12391	33611
84.00	8359	-7014	10912	0	8017	9554	12472	34393
79.00	8944	-7505	11676	0	8345	9945	12982	38334
76.08	9297	-7801	12137	0	8567	10210	13328	40664
74.00	9554	-8017	12472	0	8651	10310	13459	41556
69.00	10181	-8543	13290	0	8879	10582	13814	43719
64.00	10825	-9083	14131	0	9125	10874	14196	45918

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Forces and Moments for Pole in the Local Element Coordinate System

Loading Case

Dist. From Base (ft)	Mx (in-kips)	My (in-kips)	Resultant Mx & My (in-kips)	Torsion (in-kips)	Shear X-Dir. (lbs)	Shear Y-Dir. (lbs)	Resultant Shear (lbs)	Axial (lbs)
59.00	11487	-9639	14996	0	9380	11178	14592	48154
54.00	12168	-10210	15884	0	9638	11486	14994	50426
49.00	12867	-10796	16796	0	9901	11800	15404	52731
48.00	13009	-10916	16982	0	9955	11864	15488	53196
48.00	13009	-10916	16982	0	9948	11856	15477	53199
44.00	13592	-11405	17742	0	10415	12413	16204	57382
39.00	14357	-12047	18742	0	10997	13106	17108	62680
38.08	14502	-12169	18931	0	11096	13223	17262	63663
34.00	15158	-12719	19787	0	11356	13534	17667	66089
34.00	15158	-12719	19787	0	11353	13530	17662	66214
29.00	15981	-13409	20861	0	11647	13880	18119	69233
24.00	16824	-14117	21963	0	11931	14219	18562	72297
19.00	17688	-14842	23090	0	12202	14542	18983	75406
14.00	18570	-15582	24242	0	12450	14838	19369	78561
9.00	19469	-16336	25415	0	12660	15088	19695	81762
4.00	20380	-17101	26604	0	12805	15260	19920	85006
0.00	21114	-17717	27562	0	12856	15321	20000	87628

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case Seismic

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
169.00	9.2	11.0	14.4	0.1	0.72	0.00	0.00	0.00	0.00	0.01	72.28
166.00	8.9	10.7	13.9	0.1	0.72	0.00	0.00	0.00	0.00	0.01	71.84
166.00	8.9	10.7	13.9	0.1	0.72	0.00	0.00	0.01	0.00	0.01	71.84
164.00	8.7	10.4	13.6	0.1	0.72	0.00	0.01	0.01	0.00	0.01	71.55
164.00	8.7	10.4	13.6	0.1	0.72	0.00	0.01	0.01	0.00	0.01	71.55
159.50	8.3	9.9	12.9	0.1	0.72	0.00	0.01	0.01	0.00	0.02	70.88
159.50	8.3	9.9	12.9	0.1	0.72	0.00	0.01	0.01	0.00	0.02	70.88
159.00	8.3	9.8	12.8	0.1	0.72	0.00	0.02	0.01	0.00	0.02	70.81
154.00	7.8	9.3	12.1	0.1	0.71	0.00	0.03	0.01	0.00	0.03	70.07
154.00	7.8	9.3	12.1	0.1	0.71	0.00	0.03	0.01	0.00	0.03	70.07
149.00	7.3	8.7	11.4	0.1	0.70	0.00	0.04	0.01	0.00	0.04	69.34
149.00	7.3	8.7	11.4	0.1	0.70	0.00	0.04	0.01	0.00	0.04	69.34
146.00	7.0	8.4	10.9	0.1	0.70	0.00	0.05	0.01	0.00	0.05	68.90
146.00	7.0	8.4	10.9	0.1	0.70	0.00	0.05	0.01	0.00	0.05	68.90
144.00	6.8	8.1	10.6	0.1	0.69	0.00	0.05	0.02	0.00	0.06	68.60
139.00	6.4	7.6	9.9	0.1	0.67	0.00	0.07	0.02	0.00	0.07	67.87
134.00	5.9	7.1	9.2	0.1	0.65	0.00	0.08	0.02	0.00	0.09	67.13
129.00	5.5	6.5	8.5	0.1	0.63	0.00	0.10	0.02	0.00	0.10	66.39
127.50	5.4	6.4	8.3	0.1	0.62	0.00	0.10	0.02	0.00	0.11	66.17
127.50	5.4	6.4	8.3	0.1	0.62	0.00	0.10	0.02	0.00	0.11	66.17
124.00	5.1	6.0	7.9	0.0	0.61	0.01	0.11	0.01	0.00	0.11	65.66
124.00	5.1	6.0	7.9	0.0	0.61	0.00	0.07	0.01	0.00	0.07	76.76
119.00	4.7	5.6	7.3	0.0	0.59	0.00	0.08	0.01	0.00	0.08	76.23
116.08	4.4	5.3	6.9	0.0	0.57	0.00	0.08	0.01	0.00	0.08	75.92
114.00	4.3	5.1	6.7	0.0	0.56	0.00	0.08	0.01	0.00	0.09	75.71
109.00	3.9	4.7	6.1	0.0	0.54	0.00	0.09	0.01	0.00	0.09	75.18
109.00	3.9	4.7	6.1	0.0	0.54	0.00	0.09	0.01	0.00	0.09	75.18
104.00	3.6	4.2	5.5	0.0	0.52	0.00	0.10	0.01	0.00	0.10	74.65
99.00	3.2	3.8	5.0	0.0	0.49	0.01	0.10	0.01	0.00	0.11	74.13
94.00	2.9	3.4	4.5	0.0	0.47	0.01	0.11	0.01	0.00	0.11	73.60
89.00	2.6	3.1	4.0	0.0	0.44	0.01	0.11	0.01	0.00	0.12	73.08
89.00	2.6	3.1	4.0	0.0	0.44	0.01	0.11	0.01	0.00	0.12	73.08
85.00	2.4	2.8	3.7	0.0	0.42	0.01	0.12	0.01	0.00	0.12	72.66
85.00	2.4	2.8	3.7	0.0	0.42	0.01	0.10	0.01	0.00	0.10	76.87
84.00	2.3	2.7	3.6	0.0	0.41	0.01	0.10	0.01	0.00	0.10	76.78
79.00	2.0	2.4	3.2	0.0	0.39	0.01	0.10	0.01	0.00	0.11	76.32
76.08	1.9	2.2	2.9	0.0	0.37	0.01	0.11	0.01	0.00	0.11	76.05
74.00	1.8	2.1	2.8	0.0	0.36	0.01	0.11	0.01	0.00	0.11	75.86
69.00	1.5	1.8	2.4	0.0	0.34	0.01	0.11	0.01	0.00	0.12	75.40

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

Deflections and Stresses for Pole

Loading Case

*** Deflections and Stresses ***

Distance From Base (ft)	Defl. X-Dir (in)	Defl. Y-Dir (in)	Defl. Resultant X & Y (in)	Defl. Z-Dir (in)	Rotation (deg.)	Axial Interaction Term	Flexural Interaction Term	Shear Interaction Term	Torsion Interaction Term	Combined Stress Interaction	Effective Yield Strength (ksi)
64.00	1.3	1.6	2.1	0.0	0.31	0.01	0.11	0.01	0.00	0.12	74.94
59.00	1.1	1.3	1.7	0.0	0.29	0.01	0.12	0.01	0.00	0.13	74.48
54.00	0.9	1.1	1.5	0.0	0.26	0.01	0.12	0.01	0.00	0.13	74.02
49.00	0.8	0.9	1.2	0.0	0.23	0.01	0.13	0.01	0.00	0.13	73.56
48.00	0.7	0.9	1.2	0.0	0.23	0.01	0.13	0.01	0.00	0.13	73.47
48.00	0.7	0.9	1.2	0.0	0.23	0.01	0.10	0.01	0.00	0.10	79.80
44.00	0.6	0.7	1.0	0.0	0.21	0.01	0.10	0.01	0.00	0.10	79.50
39.00	0.5	0.6	0.8	0.0	0.19	0.01	0.10	0.01	0.00	0.11	79.14
38.08	0.5	0.6	0.7	0.0	0.18	0.01	0.10	0.01	0.00	0.11	79.07
34.00	0.4	0.4	0.6	0.0	0.16	0.01	0.10	0.01	0.00	0.11	78.77
34.00	0.4	0.4	0.6	0.0	0.16	0.01	0.10	0.01	0.00	0.11	78.77
29.00	0.3	0.3	0.4	0.0	0.14	0.01	0.11	0.01	0.00	0.11	78.40
24.00	0.2	0.2	0.3	0.0	0.11	0.01	0.11	0.01	0.00	0.12	78.03
19.00	0.1	0.1	0.2	0.0	0.09	0.01	0.11	0.01	0.00	0.12	77.66
14.00	0.1	0.1	0.1	0.0	0.07	0.01	0.12	0.01	0.00	0.12	77.30
9.00	0.0	0.0	0.0	0.0	0.04	0.01	0.12	0.01	0.00	0.13	76.93
4.00	0.0	0.0	0.0	0.0	0.02	0.01	0.12	0.01	0.00	0.13	76.56
0.00	0.0	0.0	0.0	0.0	0.00	0.01	0.12	0.01	0.00	0.13	76.26

MINIMUM DEFLECTION RATIO // DEFLECTION LIMIT / DEFLECTION // IS

BY VALMONT INDUSTRIES FOR: ODELIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

DATE 04/15/2016
Fuse 1.13.0.0

*** ANCHOR BOLT CHARACTERISTICS GOVERNED BY LOADING CASE WIND ***

NUMBER OF BOLTS	DIAMETER (IN.)	LENGTH (IN.)	WEIGHT (LB.)	SHIPPED AS	PROJECTION LENGTH (IN.)	GALVANIZED LENGTH (IN.)	THREAD SIZE
32	2.250	66	3517	BOLTS, TEMPLATES	12.00	66.00	4.5-UNC-2A

STEEL SPECIF.	MAXIMUM BOLT FORCE (LB.)	MAXIMUM BOLT SHEAR FORCE (LB.)	FACTORED NOMINAL TENS. STRENGTH (LB.)	STRESS AREA (SQ. IN.)	INTERACTION VALUE	CONFIGURATION OF BOTTOM END
A615	119210	1945	260004	3.250	0.47	THREADED WITH HEAVY HEX HEAD NUT

NOTE: BOLT INTERACTION VALUE WAS CALCULATED BY DIVIDING SHEAR FORCE BY FACTOR RELATED TO DETAIL TYPE d] IN EIA-G SPECS.

*** BOLT COORDINATES AND FORCES ***

BOLT NO.	X-COORD	Y-COORD	MAX TENSION-LB	MAX FORCE-LB	*	BOLT NO.	X-COORD	Y-COORD	MAX TENSION-LB	MAX FORCE-LB
1	44.882	0.00	- 2758	2758	*	2	44.020	8.756	19960	25476
3	41.466	17.176	41804	47321	*	4	37.318	24.935	61936	67453
5	31.737	31.737	79582	85099	*	6	24.935	37.318	94064	99580
7	17.176	41.466	104829	110345	*	8	8.756	44.020	111455	116972
9	0.00	44.882	113693	119209	*					

MAX. BOLT CIRCLE = 89.76 IN. TEMPLATE DIAMETER = 95.76 IN.

*** BASE PLATE CHARACTERISTICS GOVERNED BY LOADING CASE WIND ***

DRAWING NUMBER	OVERALL LENGTH (IN.)	OVERALL WIDTH (IN.)	THICKNESS (IN.)	ACTUAL WEIGHT (LB.)	RAW MATERIAL WEIGHT (LB.)	SIDE LENGTH (IN.)
SD18-99	95.76	97.24	3.0000	4727	7915	16.89

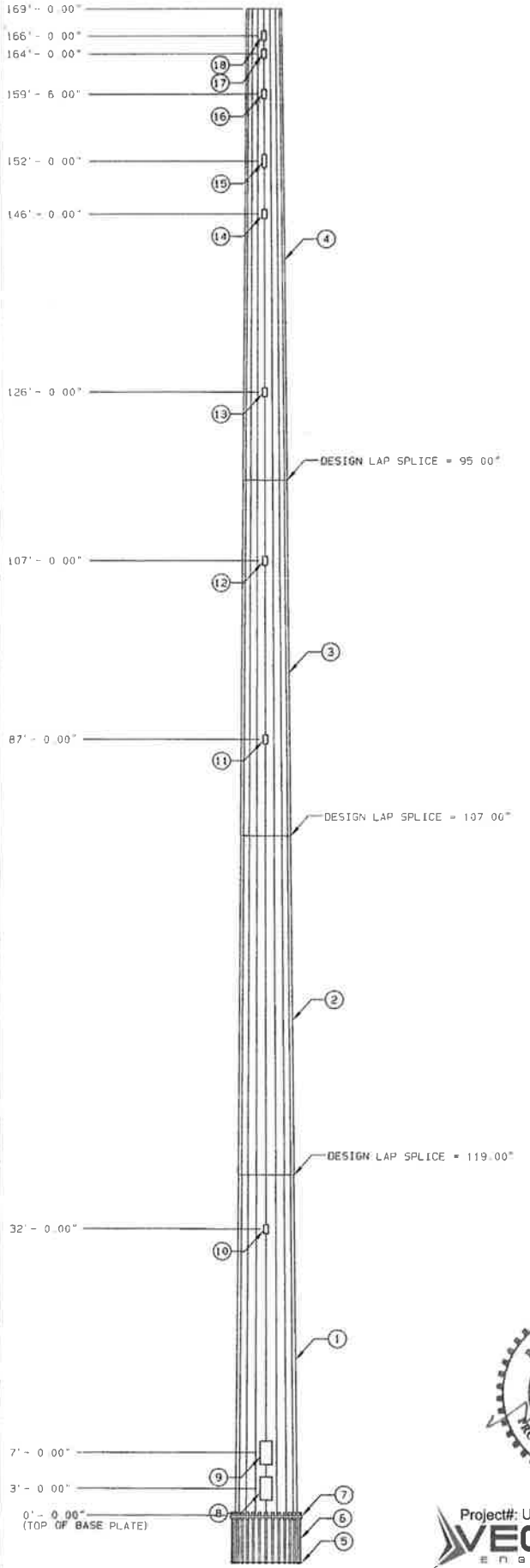
TOP WIDTH (IN.)	POLE DIAM. (MAJOR DIAM.) (IN.)	CRITICAL FAILURE MODE	TOTAL LENGTH OF FAIL MODE LINE (IN.)	EFFECTIVE LENGTH (IN.)	TOTAL MOMENT ALONG FAIL LINE (IN.-LB.)
16.89	82.00	1	94.63	83.00	3351825

STEEL SPECIF. VALMONT	OTHER	BENDING STRESS (PSI)	EFFECTIVE YIELD STRESS (PSI)	MAX. VERTICAL SHEAR STRESS (PSI)
S56	A572	26923	50000	7408

** LOADS AT POLE BASE IN THE GLOBAL COORDINATE SYSTEM ********** LOADING CASES **********

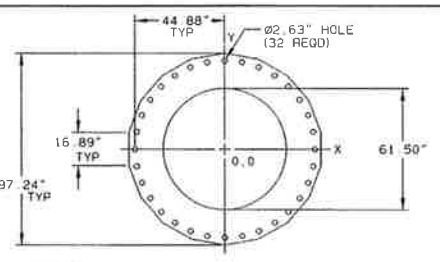
LOADING CASE IDENTIFICATION	WIND	ICE	T+S	Seis
MOMENT ABT. X-AXIS (IN-KIP)	64059	6524	15494	21114
MOMENT ABT. Y-AXIS (IN-KIP)	- 53752	- 5475	- 13001	- 17717
SHEAR FORCE (LB.)	62248	6740	15086	19986
VERTICAL FORCE (LB.)	88262	107906	73063	87632

]MAX CRITERION-	LOAD CASE
]MOMENT ABT. X	WIND
]MOMENT ABT. Y	WIND
]RES. MOMENT	WIND
]SHEAR FORCE	WIND
]BOLT FORCE	WIND
]BOLT TENSION	WIND



ITEM ID	NO REQD	FEATURES	UNIT WEIGHT (LBS)	WEIGHT (LBS)
1	1	SECTION A VALMONT S-22 0.625" THK (A572 GR65)	24,640	24,640
2	1	SECTION B VALMONT S-22 0.500" THK (A572 GR65)	17,442	17,442
3	1	SECTION C VALMONT S-22 0.438" THK (A572 GR65)	13,865	13,865
4	1	SECTION D VALMONT S-22 0.313" THK (A572 GR65)	9,387	9,387
5	1	BOTTOM CAGE PLATE	174	174
6	32	2.25" ANCHOR BOLT, LENGTH=5.50' A615 GR75	96	3,060
7	1	BASE PLATE VALMONT S-56 3.000" THK (A572 GR50)	4,727	4,727
	1	TOP CAGE PLATE (REMOVE BEFORE SETTING POLE)	230	230
	1	SAFETY CLIMBING CABLE (LENGTH = 159.00')	113	113
	3	GROUNDING LUG	2	6
		GALVANIZING	969	969
	126	STEP AND CLIP (VALMONT STANDARD)	1	63
8	2	HAND HOLE HVY (16" x 32")	215	430
9	2	HAND HOLE HVY (16" x 32")	215	430
10	3	HAND HOLE HVY (6" x 12")	26	78
11	2	HAND HOLE HVY (6" x 12")	26	52
12	2	HAND HOLE HVY (6" x 12")	26	52
13	1	HAND HOLE STD (6" x 12")	22	22
14	3	HAND HOLE STD (6" x 12")	22	66
15	3	HAND HOLE STD (6" x 18")	18	54
16	1	HAND HOLE STD (6" x 12")	22	22
17	1	HAND HOLE STD (6" x 12")	22	22
18	3	HAND HOLE STD (6" x 12")	22	66
	1	POLE CAP	100	100

HOLE COORDS (INCHES)	
X-COORD	Y-COORD
44.88	0.00
44.02	8.76
41.47	17.18
37.32	24.94
31.74	31.74
24.94	37.32
17.18	41.47
8.76	44.02
0.00	44.88



NOTES:
1. BASE PLATE THICKNESS = 3.000"
2. BASE PLATE ALLOWABLE STRESS (KSI) = 50
3. ANGLES ARE MEASURED CLOCKWISE FROM 0 DEGREES
4. MAXIMUM BOLT CIRCLE DIAMETER = 89.77"
5. MAXIMUM CAGE TEMPLATE DIAMETER = 95.77"

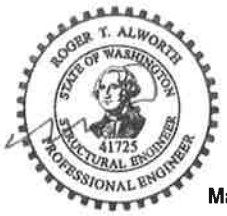
BASE PLATE / ANCHORAGE CHARACTERISTICS

NOTES:

1. FACTORED REACTIONS FOR FOUNDATION DESIGN.
   MOMENT = 83,623 IN-KIPS
   SHEAR = 62,248 #
   VERTICAL = 92,988 #
2. GALVANIZED PER ASTM A-123.
3. DESIGN CRITERIA ANSI/TIA 222-G ADDENDUM 4
4. THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:
   EXPOSURE CATEGORY = B
   STRUCTURE CLASSIFICATION = 3
   TOPOGRAPHY CATEGORY = 3
   H = 400.00 FT
   EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS Ss = 1.42
   EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT ONE SECOND S1 = 0.54
   EARTHQUAKE SITE CLASS = D
   WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 100 YEAR WIND RETURN PERIOD
   A. CASE 1: WIND = 85 MPH WIND SPEED
   B. CASE 2: WIND = 30 MPH ICE AND WIND SPEED
      DESIGN ICE THICKNESS = 0.25 INCH
   C. CASE 3: WIND = 60 MPH WIND SPEED
   D. EQUIPMENT

DESCRIPTION	MTG HT (FT)	CENTROID HT (FT)	WITHOUT ICE EPA (FT**2)	WITHOUT ICE WT (LBS)	WITH ICE EPA (FT**2)	WITH ICE WT (LBS)
1-4FT LIGHTNING ROD	169.00	171.00	0.25	10	0.92	23
2-SC412-HF2LDF	169.00	179.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	169.00	169.00	37.56	892	56.00	1616
2-6' HIGH PERFORMANCE (11GHZ)	166.00	166.00	76.54	744	81.12	1258
1-4' HIGH PERFORMANCE (11GHZ)	164.00	164.00	17.18	253	18.67	373
1-3' HP DISH (11GHZ)	159.50	159.50	9.97	136	11.12	209
2-SC412-HF2LDF	149.00	159.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	149.00	149.00	37.56	892	56.00	1616
12-PANEL (8' X 1' X 3")	154.00	154.00	83.40	948	98.16	2340
3-T-ARM SPI 3' S/O 12' C/A	154.00	154.00	8.85	618	11.88	894
2-6' HIGH PERFORMANCE (11GHZ)	146.00	146.00	76.54	744	81.10	1258
1-DBSPECTRA UHF TTA	127.50	127.50	4.05	61	4.70	126
2-CC807-11	109.00	118.00	10.46	98	16.28	238
4-6' UNIVERSAL SIDE ARM (84"	109.00	109.00	37.56	892	55.96	1612
2-CC807-11	89.00	98.00	10.46	98	16.26	238
4-6' UNIVERSAL SIDE ARM (84"	89.00	89.00	37.56	892	55.88	1612
1-CAMERA (17.5" X 13.5" X 8")	34.00	34.00	3.29	83	3.89	132
1-19" STANDOFF	34.00	34.00	0.73	16	1.20	34

5. FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE)
6. TOTAL POLE HEIGHT IS 170 FT AGL
7. ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX 1 FT AGL)
8. POLE DESIGNED TO NOT EXCEED 85% CAPACITY
9. POLE TO BE PAINTED SW 6195 ROCK GARDEN
10. POLE MEETS 0.47 DEGREE TWIST & SWAY UNDER 60 MPH SERVICE WIND SPEED
11. POLE DESIGNED TO 110 MPH ULTIMATE WIND SPEED PER IBC 2012
12. WIND SPEED CONVERSION TO 85 MPH NOMINAL PER IBC 2012 1609.3.1



May 16, 2016

Project#: U1316-119-161

VECTOR ENGINEERS

SECTION INFORMATION					
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	48' - 0.00"	82.00"	71.35"	0.625"	A572 65 KSI
2	46' -11.00"	74.55"	64.14"	0.500"	A572 65 KSI
3	47' -11.00"	66.99"	56.36"	0.438"	A572 65 KSI
4	53' -11.00"	58.74"	47.00"	0.313"	A572 65 KSI

9138 S. STATE STREET, SUITE 101 (801) 990-1775
SANDY, UTAH 84070 (801) 990-1776 FAX

WA Certificate of Authorization: 2202

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR
324543	324543	324543	NONE	04/15/16	NAR1

DESCRIPTION

valmont

valmont MICROFLECT

VALMONT/MICROFLECT
3575 25TH ST. SE – P.O. BOX 12985
SALEM, OR 97302-1190
PHONE: 1-800-547-2151
ENGINEER: NAR
Reviewed by: NAR

SLAB FOUNDATION DESIGN CALCULATIONS

WA Certificate of Authorization: 2202

May 16, 2016
Project#: U1316-119-161

VECTOR ENGINEERS

9138 S. State Street, Suite 101 (801) 990-1775
Sandy, Utah 84070 (801) 990-1776 Fax

Valmont Order No.: 324543
Customer: ODELIA
Site: BELLEVUE STATION
Pole Ht: 169 ft

valmont MICROFLECT

Pole Foundation Mat Design

SLAB DESIGN			Date:	05/16/16	Time: 11:01
Project:	324543		Run by:	NAR	
Input (Blue):			Checked by:	NAR	
legs	1		1 = Pole \ 3 or 4 = Tower		
otm_t	8198	k-ft	total pole overturning moment		
sh_t	73.24	k	total pole shear		
sh_l	73.24	k			
wt	69.74	k	total pole weight * 0.9		
f_w	7.48	ft	anchor bolt circle dia		
b	26.00	ft	slab width (rigid square slab only)		
t	36.00	in	slab thickness		
net_p_a	9.00	ksf	ultimate soil bearing pressure		
s_f	1.00		allowable stress increase factor (rebar)		
c_h	72.00	in	cap height above slab		
c_s	114.00	in	cap dia		
d_f	8.50	ft.	depth from final grade to bottom of footing		
d_fl	66.00	in	depth of fill over slab		
dens_c	0.150	kcf	density of concrete		
dens_s	0.100	kcf	density of soil		
dens_fl	0.100	kcf	density of fill over slab		
f_c	4,000	psi	concrete compres. strength		
c_type			concrete type		
f_y	60,000	psi	rebar yield strength		
u	1.00		soil factor of safety: qult/qall		
Output Summary (see complete calculations below):					
s_r	1.03		OK (overturning F.S. OK)		
net_p	5.91	ksf	OK (net soil bearing pressure is OK)		
vol_c	90.86	cu.yd.	Total volume of concrete.		
slab two-way shear:			(punching shear ok)		
slab beam shear:			(beam shear ok)		

Slab Reinforcement (ASTM A615 Gr.60):

		Size	Quan. (E/W)	Len. (ft)	Spc. (in)	Total (lbs)	
	Top Bar	#4	63	25.50	4.94	2146	<---OK
	Options	#5	41	25.50	7.65	2181	<---OK
Y		#6	46	25.50	6.80	3524	<---OK
	As>=12.49	#7	21	25.50	15.30	2189	<---OK
		#8	16	25.50	20.40	2179	
		#9	13	25.50	25.50	2254	
	Bot.Bar	#4	168	25.50	1.83	5723	
	Options	#5	109	25.50	2.83	5798	
		#6	77	25.50	4.03	5898	<---OK
	As>=33.50	#7	56	25.50	5.56	5838	<---OK
		#8	43	25.50	7.29	5855	<---OK
Y		#9	46	25.50	6.80	7976	<---OK

(special design req'd for cap shear reinforcement)
(special design req'd for cap flexural/tensile reinforcement.)

VALMONT MICROFLECT
3575 25TH STREET SE
SALEM, OR 97302
PHONE: 1-800-547-2151

valmont MICROFLECT

Pole Foundation Mat Design Special Cap Reinforcement

Project 324543
Date: 05/16/16

Special Cap Reinforcement:

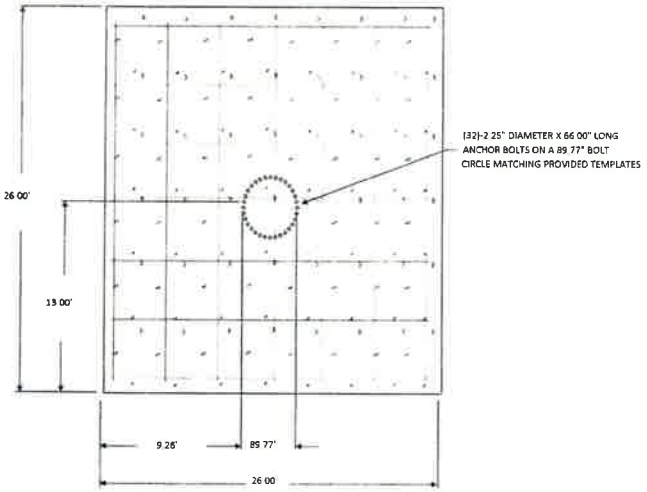
Vertical Reinforcement Size = #	11		
Quantity of vertical rebar =	50		
Total area of vert. rebar =	74.24	in2	>= 0.005*Acap = 51.04in2, OK
vertical rebar horiz. Spacing =	5.16	in	>= 1.5db and >= 1.5in, OK (ACI)
Factored max moment in cap = M + (V*h_{cap}) =	8656.1	ft-k	(conservatively neglect passive pressure of soil)
Section Modulus of rebar =	1986.0	in^3	
fb = M/S =	52.3	ksi	<=54ksi, OK
Req'd vert. bar dev. length = $(3d_b/40)*(f_y/f'_c{}^{0.5})*(1/2.5)$ =	39.13	in	provide min 40 in vert. rebar dev. length
concrete cover =	4.00	in	
length of vert rebar =	8.50	ft	
a =	102.00	in	> 40 in of vert. rebar dev. length OK
d* =	12.00	in	
b =	1.91	ft	
total wt of vert rebar=	2765	lbs	
radius of vert rebar =	51.67	in	
Shear tie rebar size = #	5		
vertical spacing =	12.00	in	
Factored max shear in cap =	73.2	k	
Concrete shear capacity = 0.85*2*sqrt(f'c)*bw*d =	1348.3	k, OK	
tie diameter (a) =	8.83	ft	
circumference =	27.75	ft	
# of ties =	10.00		
total wt of ties =	289	lbs	
d** =	2.50	in	
6db =	6.25	in	
Anchor Bolt Diameter =	2.25	in	
Length Of Anchor Bolts =	66.00	in	AB CHECK 60.4" < 66" OK
Anchor Bolt Projection =	12.00	in	
Depth of Pocket to Accommodate Anchor Bolts =	-51.00	in	
Total Depth from Final Grade =	8.50	ft	
Pocket Vol =	0.00	ft^3	

REINFORCEMENT STEEL SCHEDULE

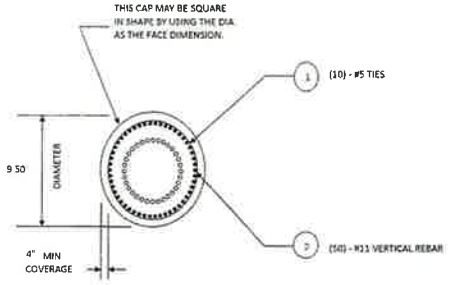
	Sym	Type	Rebar Size	Rebar Spacing	Dimensions a	b	c	d	(6db)	Weight (lbs)	Qty
CAP TIES	1	C	#5	EQUAL	8.83 ft			2.5 in	3.75 in	289	10
CAP VERTICAL REBAR	2	B	#11	-----	8.50 ft	1.91 ft		12 in		2765	50
SLAB TOP STEEL	3	A	#6	6.80 in	25.50 ft					3524	92
SLAB BOTTOM STEEL	4	A	#9	6.80 in	25.50 ft					7976	92
TOTAL STEEL WEIGHT FOR COMPLETE FOUNDATION INSTALLATION =										14555	

TOTAL VOLUME OF CONCRETE FOR FOUNDATION INSTALLATION = 90.86 yd^3

VALMONT MICROFLECT
3575 25TH STREET SE
SALEM, OR 97302
PHONE: 1-800-547-2151



SECTION A-A
No Scale



SECTION B-B
No Scale

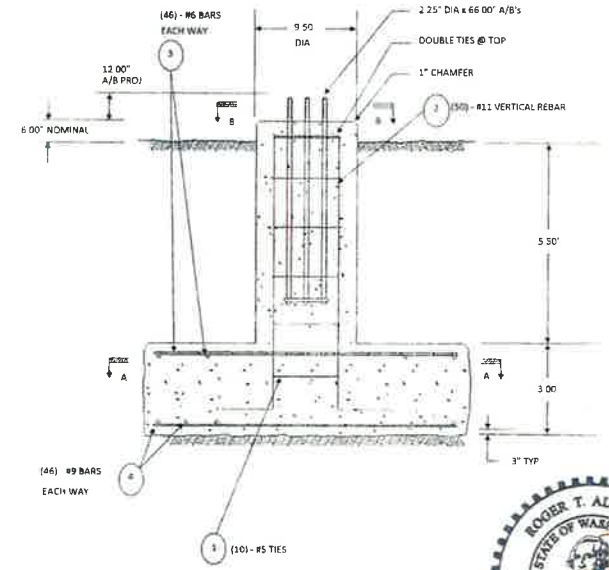
GENERAL NOTES: SLAB FOUNDATION

1. Prior to excavation, check the area for underground facilities.
2. All reinforcing shall be deformed bars conforming to ASTM A615 Grade 60 (60,000 psi min. yield) and shall be provided by the foundation contractor.
3. All concrete shall have a minimum compressive strength of 4000 psi @ 28 days. The requirement for the concrete shall be as given in the ACI "Building Code Requirements for Reinforced Concrete", ACI 318, the latest edition.
4. Trowel top of foundation smooth.
5. Concrete shall be placed against undisturbed soil to the depth indicated on the foundation drawing. The portion above grade shall be formed. If an area is excavated beyond the limits shown, this volume shall be filled with concrete or formed. After the forms are removed, the excess excavation shall be replaced and compacted.
6. Ground water was not encountered below grade during boring.
7. Foundation design based on vert. bearing pressure of 9000 psf.
8. Concrete is assumed to weigh 150 pcf.
9. Estimated concrete volume = **90.86 cubic yards total.**
10. Design Based on the following loads from installation drawing for order No: 324543.

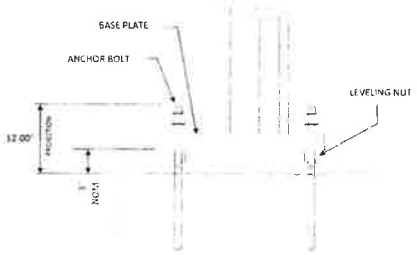
Factored Moment = 3198 FT-KIPS **Overturning Safety Factor = 1.03**
Factored Download = 69.7 KIPS **Max. Toe Bearing Pressure = 5.91 ksf**
Factored Shear = 73.2 KIPS

11. Backfill should be compacted to a density of 100 pcf.
12. Anchor bolts to be ASTM A615, Gr. 75 ksi.
13. Reference: TETRA TECH PROJECT NO. 114-570974 DATED 02/18/2016

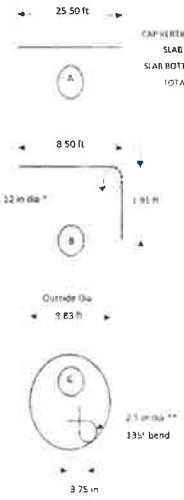
14. Ref Soils Report for installation recommendations.
15. Auger refusal encountered at 10' below grade during boring.
16. Foundation designed to not exceed 85% capacity



ELEVATION
No Scale



ANCHOR BOLT INSTALLATION
N T S
EXTREME CARE SHOULD BE TAKEN TO ASSURE THAT ALL LEVELING NUTS ARE LEVEL WITH RESPECT TO EACH OTHER PRIOR TO ERECTION OF THE STRUCTURE



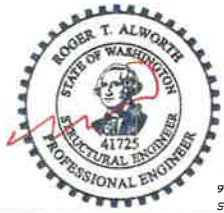
REINFORCEMENT STEEL SCHEDULE					
Item	Type	Rebar Size	Rebar Spacing	Weight (lbs)	Qty
CAP TIES	1	C	#5	EQUAL	289	10
CAP VERTICAL REBAR	2	B	#11	—	2765	50
SLAB TOP STEEL	3	A	#6	6.80 in	3524	92
SLAB BOTTOM STEEL	4	A	#9	6.80 in	7976	92
TOTAL STEEL WEIGHT FOR COMPLETE FOUNDATION INSTALLATION =					14555	

Grade 60 Rebar						
Size	Bar #	wt/ft	Edb (in)	d* (in)	d** (in)	
#3	11-97203	0 38	2 25	2 25	3 56	
#4	11-97204	0 67	3 00	3 00	3 00	
#5	11-97205	1 04	3 75	3 75	3 56	
#6	11-97206	1 50	4 50	4 50	4 50	
#7	11-97207	2 04	5 25	5 25	4 25	
#8	11-97208	2 67	6 00	6 00	6 00	
#9	11-97209	3 40	6 77	9 50		
#10	11-97210	4 30	7 62	10 75		
#11	11-97211	5 31	8 46	12 00		

* Refers to ACI standard hook detail chart
** Refers to ACI stirrup hook detail chart

Rebar Lap Splice					
Rebar Size	Rebar Grade	Specified Concrete Strength	Overlap (inches) Vert & Ties	Bottom Horiz	Top Horiz
#3	60	4000 psi	14	15	21
#4	60	4000 psi	18	20	29
#5	60	4000 psi	22	26	36
#6	60	4000 psi	26	34	46
#7	60	4000 psi	38	45	62
#8	60	4000 psi	43	59	82
#9	60	4000 psi	49	74	104
#10	60	4000 psi	58	95	132
#11	60	4000 psi	71	116	162

Splicing is an alternative to specified material listed in rebar schedule
Lap Splice may be used on ties when Seismic Hook not required



May 16, 2016
WA Certificate of Authorization: 2202
Project#: U1316-119-161

VECTOR ENGINEERS
9138 S. State Street, Suite 101 (801) 990-1775
Sandy, Utah 84070 (801) 990-1776 Fax

Rev	Description	Date	By/Ck

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES TOLERANCES ARE

valmont MICROFLECT
3535 25TH STREET SE SALEM, OR 97302
MAIN (503) 363-9267
FAX (503) 316-2040

By: NAR | SLAB FOUNDATION LAYOUT
Check: BAR | Customer ODELIA
Date: 05/31/16 | Site BELLEVUE STATION, WA

S.O. 324543 | SIZE B | Dwg No. B-143633 | Sheet 1 of 1

civil & structural
engineering & planning

STORM DRAINAGE REPORT

Bellevue Station 9

12412 Newcastle Way
Bellevue, WA 98006

7/27/2016

CG Project No.: 16015.902.1

250 4th Ave S Ste 200
Edmonds, WA 98020
Phone: (425) 778-8500
Fax: (425) 778-5536

Table of Contents

Section I – Project Overview

Section II –Existing Conditions Summary

Section III – Stormwater Pollution Prevention Plan (SWPPP) Narrative

Section IV – Permanent Stormwater Control Plan Narrative

ENGINEERING

250 4th Avenue South, Suite 200
Edmonds, WA 98020
ph. 425.778.8500 | f. 425.778.5536
www.cgengineering.com

Section I – Project Overview

Section I Summary

Narrative

Vicinity Map

Aerial Photograph

The proposed project is a tower site for a new King County Puget Sound Emergency Ratio Network (PSERN) 120' tower and associated equipment to provide emergency radio communications to reach and coordinate with emergency responders.

The site is located in the rear (north) of Fire Station 9 at 12412 Newcastle Way, Bellevue, WA 98006 (Parcel No: 195182-0080). In the existing condition, there is a fire station and its associated parking lot with a vegetated area on the north part of the parcel. The proposed lease area is undeveloped and heavily vegetated. In the proposed condition, the project will add 3,135 sq. ft. of impervious area (45 ft. by 45 ft. lease area with a 1,000 sq. ft. access driveway).

Figure 1.1 - Vicinity Map

Figure 1.2 - Aerial Photograph

Stormwater runoff currently disperses off the site towards the northwest on a slope of about 7 percent. The following on-site stormwater management BMPs are proposed and are further discussed in Section IV – Permanent Stormwater Control Plan Narrative:

1) Post-Construction Soil Quality and Depth (BMP T5.13) for disturbed pervious areas
2) Sheet Flow Dispersion (BMPT5.12) for all proposed impervious areas

The project is classified as a redevelopment since the tower site is located on a property that has 35% or more of existing coverage. Following Figure 2.3 "Flow Chart for Determining Requirements for Redevelopment" in the City of Bellevue's 2016 Surface Water Engineering Standards, the project must address Minimum Requirements #1-#5. These requirements are addressed as follows:

Minimum Requirement #1: Preparation of Stormwater Site Plans
A stormwater site plan has been prepared as part of the civil plan set.

Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP)
An erosion control plan and CSWPPP Short Form has been prepared. Refer to Section III – Stormwater Pollution Prevention Plan (SWPPP) Narrative.

Minimum Requirement #3: Source Control of Pollution
Source control BMPs will be implemented during construction according to the erosion control plan. Permanent source control BMPs is not required for the site.

Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls
The natural drainage pattern will be maintained.

Minimum Requirement #5:
Stormwater runoff from impervious areas will be managed with sheet flow dispersion. Refer to Section IV – Permanent Stormwater Control Plan Narrative.

Section II –Existing Conditions Summary

Section II Summary
Narrative
NRCS Soil Map

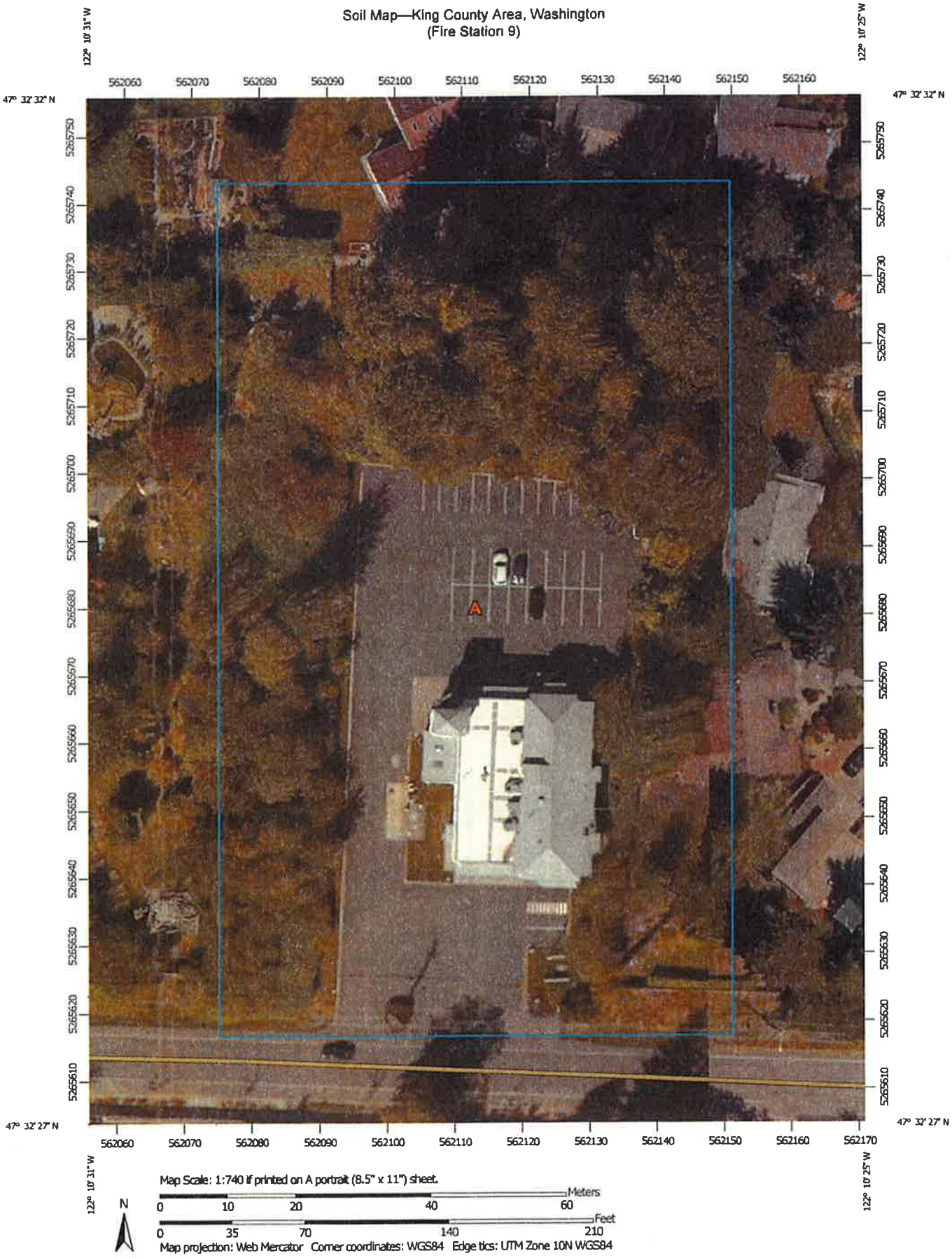
The proposed tower site is located behind (north of) Fire Station 9 at 12412 Newcastle Way, Bellevue, WA 98006. The total lot area is 1.61 acres. There is currently a fire station building, its associated parking lot, and a vegetated area on the north part of the parcel. The proposed lease area will be on a portion of this vegetated area.

In its existing condition, the site slopes towards the northwest into a vegetated area. The average slope is about 7% with about a 4 ft. change in elevation across the site. Immediately west of the tower site is an electric transmission line with a 75 ft. easement—the downstream area of the site appears to be directed towards this area. The lot is adjacent to single-family residential homes.

The underlying soil is Alderwood gravelly sandy loam according to the Natural Resources Conservation Service (NRCS) Soil Survey Map. Soil borings from the geotechnical report showed soft to medium stiff sandy silt with gravel extending to approximately 6 ft. Borings were conducted to 10.5 ft. below existing grade and groundwater was not encountered (October 8, 2015).

In the developed condition, the natural drainage pattern is to remain. The project will add about 2,600 sq. ft. of impervious surface for an access road and tower site.

Soil Map—King County Area, Washington
(Fire Station 9)



Map Scale: 1:740 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: King County Area, Washington
Survey Area Data: Version 11, Sep 14, 2015

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

Date(s) aerial images were photographed: Aug 31, 2013—Jul 15, 2014

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

Map Unit Legend

King County Area, Washington (WA633)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes	2.4	100.0%
Totals for Area of Interest		**2.4**	**100.0%**

Section III – Stormwater Pollution Prevention Plan (SWPPP) Narrative

Section III Summary

Narrative
CSWPPP Short Form
Erosion Control Plan (11x17)

This project has less than 7,000 square feet of clearing and less than 500 cubic yards of grading. Therefore, a CSWPPP short form and a site plan have been prepared to fulfill Minimum Requirement 2.

Construction Stormwater Pollution Prevention Plan (CSWPPP)
Short Form for Small Construction Projects

The Bellevue clearing and grading code (BCC 23.76.090) allows sites with land disturbing activities totaling less than 7,000 square feet and grading less than 100 cubic yards to prepare a simpler CSWPPP consisting of a checklist (short form) and a site plan. The purpose of the short form is to outline the actions that will be implemented on smaller construction sites to reduce or eliminate discharge of sediment and other pollutants into receiving waters.

Background Information

Property Owner: King County - Puget Sound Emergency Radio Network

Contact Person: Eric Camp (Camp+Associates)
(If different from the owner, all questions and correspondence will be directed to the individual listed as contact person.)

Address of Contact Person: 19401 40th Ave W Suite 304, Lynnwood, WA 98036

Phone Number: (425) 740-8392

Project Title: Bellevue Station 9

Site Address: 12412 Newcastle Way, Bellevue, WA 98006

Parcel Number: 195182-0080

Give an accurate, brief description of the proposed project's scope and nature:

1. General description:

   New King County Puget Sound Emergency Radio Network (PSERN) 120' tower and associated equipment to be sited on new gravel lease area with access road.

2. Area of site (square feet or acres): 70,131 sf
3. Proposed area of land disturbance (square feet or acres): 2,600 sf
4. Proposed quantity of excavation (cubic yards): 5
5. Proposed quantity of fill (cubic yards): 85
6. Square footage of buildings to be constructed: 360
7. Description of adjacent areas which may be affected by site disturbance (i.e. streams, lakes, wetlands, residential areas, roads)

   There are adjacent residential properties downstream (50-100 ft) of the site. Erosion control measures will be in place so that there is minimal disturbance to these properties.

8. Description of critical areas that are on or adjacent to the site.

   N/A

9. Describe potential erosion problems on site.

   N/A - Slopes are low with an average of about 7% downwards towards the northwest

Required Elements - Construction Stormwater Pollution Prevention Plan

Indicate the BMPs to be used for each element. If site conditions render an element unnecessary, check "other" and describe why it is not needed.

1. Mark Clearing Limits
   - ☑ Preserve existing vegetation – BMP C 101
   - ☑ High Visibility Plastic or Metal Fence – BMP C103
   - ☐ Stake and Wire Fence – BMP C104
   - ☑ Tree Protection During Construction – BMP T101
   - ☐ Other

2. Establish Construction Access
   - ☑ Stabilized Construction Entrance – BMP C105
   - ☐ Wheel Wash – BMP C106
   - ☐ Construction Road/Parking Area Stabilization – BMP C107
   - ☐ Other

3. Control Flow Rates
   - ☐ Sediment trap – BMP C240
   - ☐ Other

4. Install Sediment Controls
   - ☐ Vegetated strip – BMP C234
   - ☑ Silt Fence – BMP C233
   - ☐ Straw wattles – BMP C235
   - ☐ Other

5. Stabilize Soils
   - ☐ Mulching – BMP C121
   - ☐ Plastic Covering – BMP C123
   - ☐ Topsoiling – BMP C125
   - ☐ Sodding – BMP C124
   - ☑ Nets & blankets – BMP C122
   - ☑ Temporary & Permanent Seeding – BMP C120
   - ☐ Small project construction stormwater pollution prevention BMP C180
   - ☐ Other

6. Protect Slopes
   - ☑ Temporary & permanent seeding – BMP C120
   - ☐ Plastic covering – BMP C123
   - ☐ Interceptor dike and swale – BMP C200
   - ☑ Nets & blankets – BMP C122
   - ☐ Other

7. Protect Drain Inlets
   - ☐ Storm drain inlet protection – BMP C220
   - ☐ Other

8. Stabilize Channels and Outlets
   - ☐ Channel lining – BMP C202
   - ☐ Outlet protection – BMP C209
   - ☐ Other

9. Control Pollutants
   - ☑ Concrete Handling – BMP C151
   - ☐ Sawcutting and Surfacing Pollution Prevention – C152
   - ☑ Material Delivery, Storage Containment – C153
   - ☐ Other

10. Control De-Watering
   - ☐ Level Spreader – BMP C206
   - ☐ Infiltration (Provide details)
   - ☐ Discharge to sanitary sewer (METRO and Bellevue Utilities permits required)
   - ☐ Other

11. Maintain BMPs
   - ☑ Maintain and repair in accordance with BMP specifications
   - ☐ Other

12. Manage the Project

- Phase construction – describe

  Erosion control, clearing and excavation, pour foundation, install utilities, backfill and stabilize site, permanent seeding

- Limit work to the dry season

  Work will be done during the dry season, or incorporate additional BMP measures.

- Inspect and monitor all BMPs

  BMPs will be monitored regularly and after rainfall events. Update BMPs as needed.

- Pollution prevention contact list – attach a list to be maintained at the job site

  List will be maintained at job site.

- Reporting and recordkeeping – Attach inspection forms and site log

  Inspection and site log forms will be attached to this CSWPPP.

- Other

Site Plan

Attach a site plan (minimum 11" x 17") that includes the following:

a. Legal description of subject property.
b. North Arrow
c. Property boundaries
d. Boundaries of existing vegetation, e.g. tree lines, pasture areas, etc.
e. Identify and label areas of potential erosion problems.
f. Identify any on-site or adjacent surface waters, critical areas and associated buffers.
g. Identify FEMA base flood boundaries and Shoreline Management boundaries (if applicable)
h. Show existing and proposed contours.
i. Delineate areas that are to be cleared and graded.
j. Indicate location of BMPs and other required CSWPPP elements.
k. Name and phone number of person(s) responsible for preparation and maintenance of the CSWPPP.

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CONSTRUCTION EMERGENCY CONTACT SHEET

Date _____

Project Name: BELLEVUE STATION 9

Project Address: 12412 NEWCASTLE WAY, BELLEVUE WA 98006

Type of Work: NEW CONSTRUCTION - WIRELESS TOWER SITE

Developer: King County

Contact: Hai Phung Office: (206) 263-7846 24-hr: _____

General Contractor: TBD

Contact: _____ Office: _____ 24-hr: _____

Utilities Sub-Contractor: TBD

President/Owner: _____

Office: _____ Home: _____ 24-hr : _____

Project Manager: _____

Office: _____ Home: _____ 24-hr : _____

Superintendent: _____

Office: _____ Home: _____ 24-hr : _____

Foreman: _____

Office: _____ Home: _____ 24-hr : _____

Erosion Control Lead: _____

Office: _____ Home: _____ 24-hr: _____

City of Bellevue Inspectors

Clearing & Grading Inspector: _____

Office: (425) 452- _____

Building Inspector: _____

Office: (425) 452- _____

CONSTRUCTION EMERGENCY CONTACT SHEET

INJURY or FIRE– Call 911

Project Location or Address (If no address, describe the location of the construction access so that it can be relayed to emergency responders)

SPILL (Any hazardous materials including diesel fuel, gasoline, hydraulic fluid that enters the storm drain system or receiving waters)

- Call Washington State Department of Ecology (24 hrs) 425-649-7000
- Call Utilities Operations & Maintenance 425-452-7840
- Call Clearing & Grading Inspector or 425-452-4570

FISH KILL OR DISTRESS

- Call Washington Department of Fish and Wildlife Area Habitat Biologist, Larry Fisher 425-313-5683
- Call Clearing & Grading Inspector or 425-452-4570

WATER QUALITY IMPACTS (Site stormwater runoff turbidity exceeds 250 ntu)

- Call Washington State Department of Ecology (24 hrs) 425-649-7000
- Call Clearing & Grading Inspector or 425-452-4570

ARCHAEOLOGICAL FINDS

- Call Clearing & Grading Inspector or 425-452-4570
- Call Army Corps of Engineers, Seattle office, Lyz Ellis, 206-764-3634 (This is all you need to do under the permit)
  Or if there is no response and there is a need for immediate help, call Dr. Whitlam at the Washington State Office of Historic and Archaeological Program (OHAP), 360-407-0771

CSWPPP
SITE INSPECTION FORM

Project BELLEVUE STATION 9 Permit No. _____

Inspector _____ Date _____ Time _____

Inspection Type: ☐ After a rain event ☐ Weekly ☐ Turbidity benchmark exceedance

☐Other – explain: _____

Weather: _____

Precipitation: Since last inspection _____inches In last 24 hours _____ inches

Description of General Site Conditions: _____

_____

_____

Will existing BMPs need to be modified or removed, or other BMPs installed? ☐ YES ☐ NO

If YES, list the action items to be completed on the following table:

Actions to be Completed	Date Completed/ Initials
1.	
2.	
3.	
4.	
5.	

Was water quality sampling (turbidity and pH) part of this inspection? ☐ YES ☐ NO

If yes, attach Turbidity & pH Monitoring Data Sheet

Is the site in compliance with the CSWPPP and the permit requirements? ☐ YES ☐ NO

- If no, indicate the tasks necessary to bring the site into compliance on the "Actions to be Completed" table above, and include dates each job will be completed.
- **If no, has the non-compliance been reported to the City of Bellevue?** ☐ YES ☐ NO
- **If no, should the CSWPPP be modified?** ☐ YES ☐ NO

I certify that this report is true, accurate, and complete, to the best of my knowledge and belief.

Name of Inspector (print) _____ Title/Qualification _____

Signature _____ Date _____

CSWPPP
SITE INSPECTION FORM

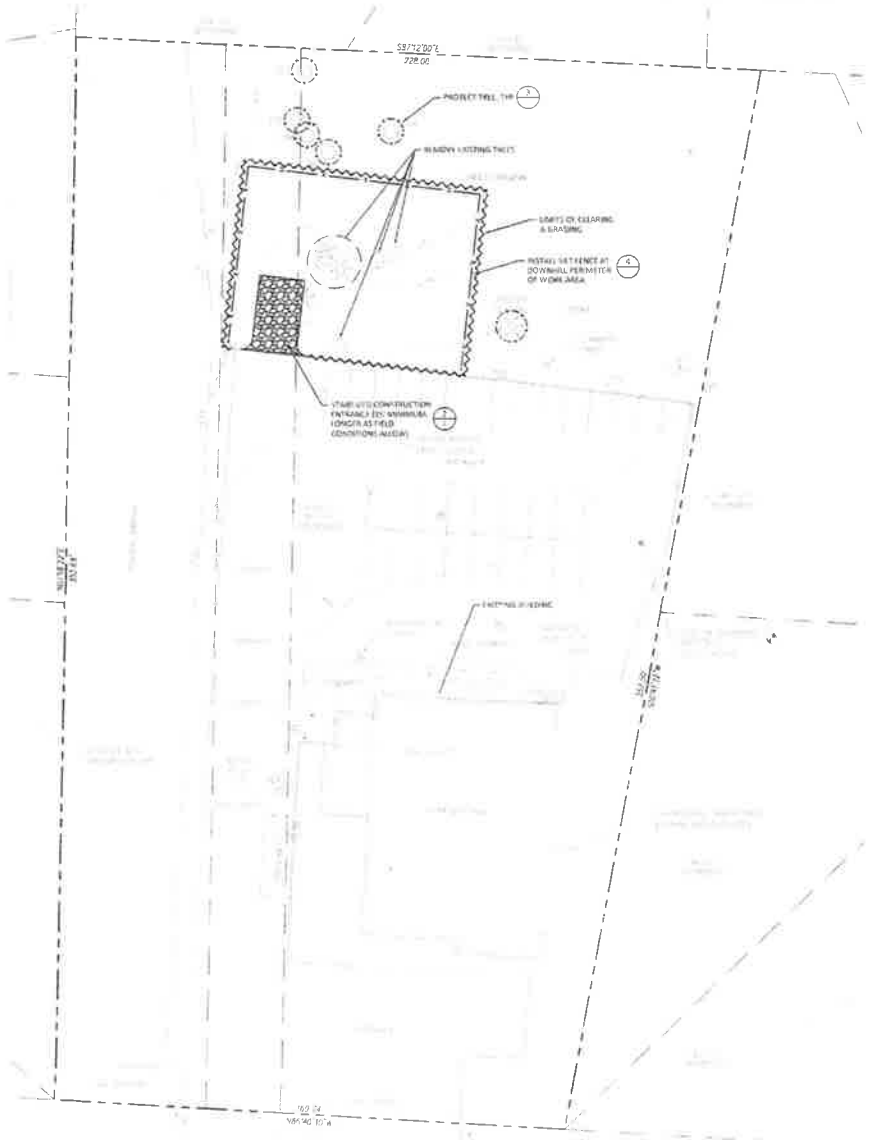
Project _____ Permit No. _____

Inspector _____ Date _____ Time _____

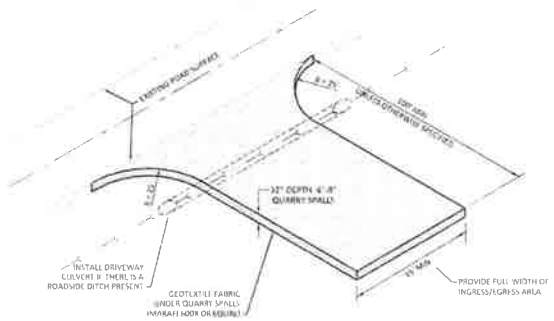
Site BMPs	Overall Condition	Need Repair?	Comments/Observations
Element 1: Clearing Limits			
• Existing vegetation	G F P	Y N	
• Plastic or Metal Fence	G F P	Y N	
•	G F P	Y N	
Element 2: Construction Access	G F P	Y N	
• Stabilized Construction Entrance	G F P	Y N	
•	G F P	Y N	
•			
Element 3: Control Flow Rates			
• Sediment trap	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
Element 4: Sediment Controls			
• Silt Fence	G F P	Y N	
• Straw wattles	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
Element 5: Stabilize Soils			
• Mulch	G F P	Y N	
• Plastic Covering	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
Element 6: Protect Slopes			
• Plastic covering	G F P	Y N	
• Seeding	G F P	Y N	
•	G F P	Y N	
Element 7: Protect Drain Inlets			
• Storm drain inlet protection	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
Element 8: Stabilize Channels & Outlets	G F P		
• Outlet protection	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
Element 9: Control Pollutants			
• Concrete Handling	G F P	Y N	
• Material Delivery, Storage Containment	G F P	Y N	
•	G F P	Y N	
	G F P	Y N	
Element 10: Control Dewatering	G F P	Y N	
•	G F P	Y N	
•	G F P	Y N	
•			

G=Good, F=Fair, P=PoorY=Yes, N=No

SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W M



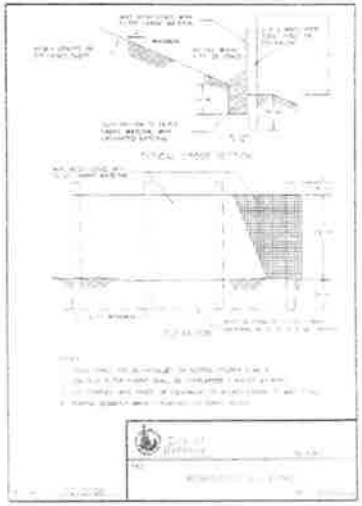
1 TEMPORARY EROSION CONTROL PLAN



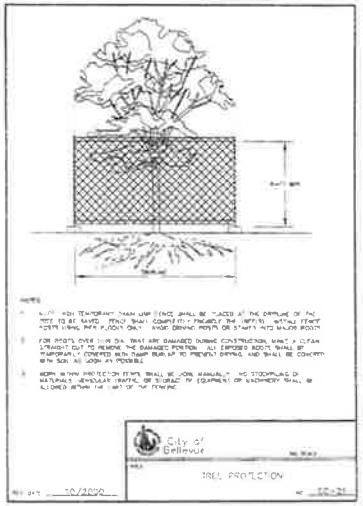
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. INSTALLATION: THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE QUARRY SPALLS SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS IN THE PLAN. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. AGGREGATE: 4" TO 8" QUARRY SPALLS PER WSDOT STD. SPECS. SEC. 9-13.6.1
3. ENTRANCE DIMENSIONS: THE AGGREGATE LAYER MUST BE AT LEAST 12" THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 100 FEET (UNLESS OTHERWISE APPROVED BY CIVIL INSPECTOR).
4. WASHING: IF CONDITIONS ON THE SITE ARE SUCH THAT MOST OF THE MUD IS NOT REMOVED FROM VEHICLE TIRES BY CONTACT WITH THE ROCK ENTRANCE, THEN THE TIRES MUST BE WASHED BEFORE VEHICLES ENTER A PUBLIC ROAD. WASH WATER MUST BE CARRIED AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE.
5. MAINTAINENCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAY OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY BY SWEEPING. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY.

2 STABALIZED CONSTRUCTION ENTRANCE



3 CITY OF BELLEVUE STANDARD DETAIL



4 CITY OF BELLEVUE STANDARD DETAIL

King County

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5538

CG PROJECT# 160159.302

PROJECT MANAGER JPU

PREPARED BY ZDS

APPROVED BY GAC

REV	DATE	DESCRIPTION

PLAN REVIEWERS SIGNATURE

SHEET NAME
TEMPORARY EROSION CONTROL PLAN

SHEET NUMBER
C2.1

Section IV – Permanent Stormwater Control Plan Narrative

Section IV Summary

Narrative

Grading and Drainage Plan (11 x 17)

Best Management Practices (BMPs) were evaluated according to Chapter D6 of the City of Bellevue's 2016 Surface Water Engineering Standards. BMPs were evaluated and selected in the order presented within each of the three tiers presented in Figure 6.1 of the manual.

Source control BMPs during construction are described in the CSWPPP, which addresses Minimum Requirement 2. It is not anticipated that structural source controls or other permanent measures not described in this report will be applicable.

The on-site stormwater management BMPs that will be implemented are:

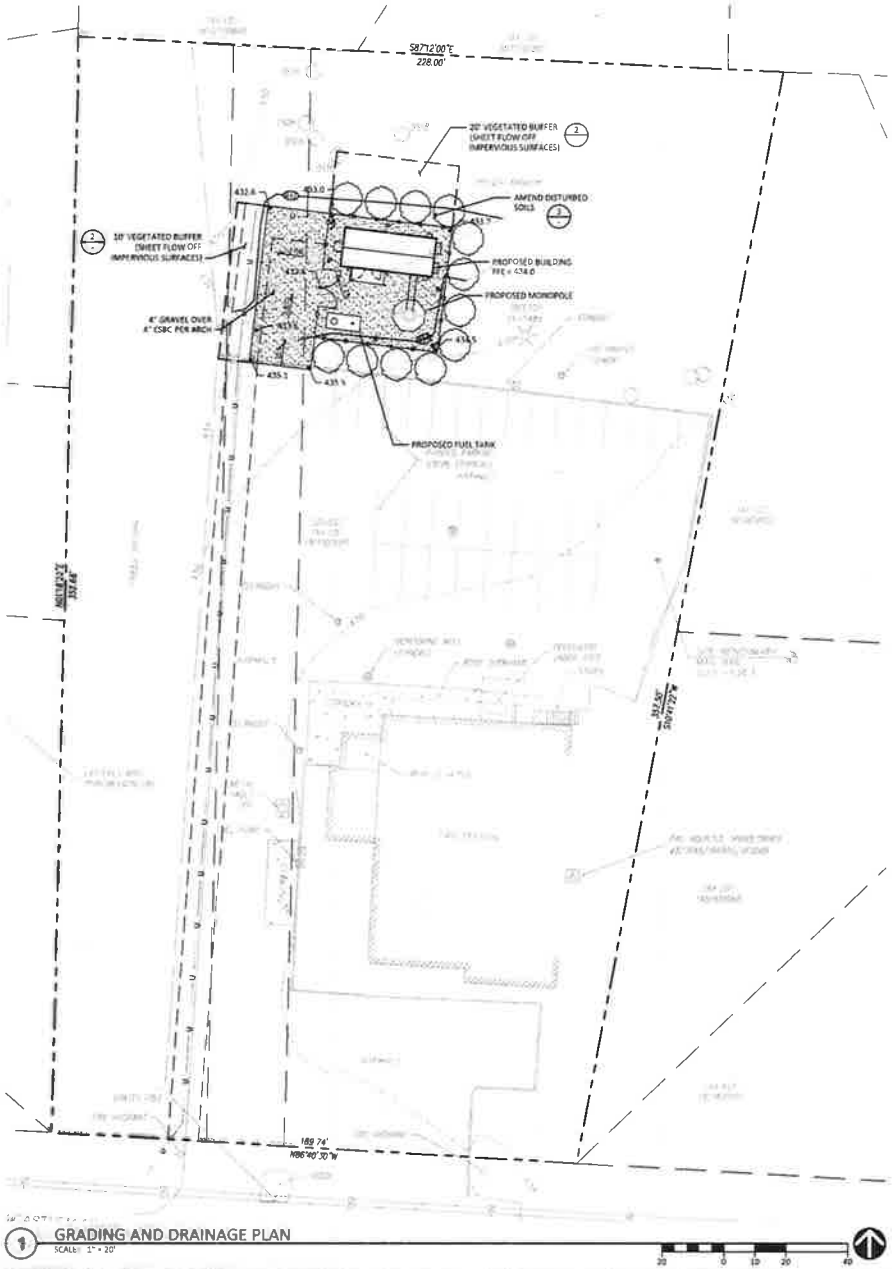
Tier 1:
Amended Soils – All disturbed pervious areas will be amended with compost to meet specifications of Post-Construction Soil Quality and Depth (BMP T5.13) per the current "Guidelines and Resources for Implementing Soil Quality and Depth BMP T5.13" at www.SoilforSalmon.org and as provided as Standard Detail NDP-1 in the Erosion Control Plan. Amended soils will be maintained per the Bellevue Maintenance Standards.

Tier 2:
Sheet Flow Dispersion – All impervious areas on the site will be managed with Sheet Flow Dispersion (BMP T5.12), including the equipment shelter, leased area, and access road. Cross slopes along the access road and leased area will be a minimum of 2%, and runoff will be dispersed into a vegetated buffer as shown in the attached C3.1 Grading and Drainage plan. Natural drainage patterns will be maintained with the dominant flow direction being towards the northwest towards the vegetated electric transmission corridor.

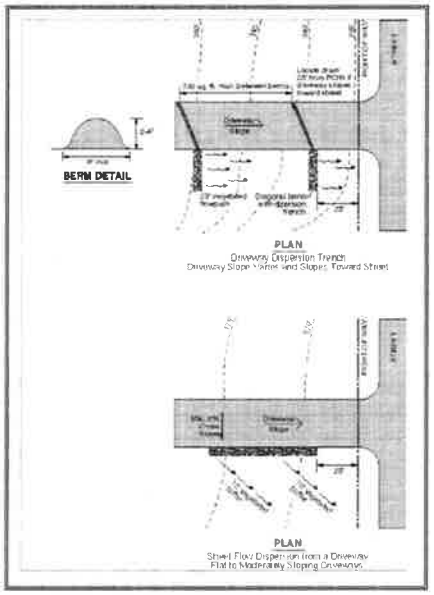
Tier 3:
N/A – On-site Stormwater Management has been met in Tier 2.

REGULAR / ROUTINE MAINTENANCE		
Recommended Frequency	**References and Images**	**Instructions**
M3-06-R1 Protect from Compaction and Erosion		
• Ongoing monitoring. • Aerate lawns yearly. • Turn over landscape areas in late spring and early fall.		• Protect amended areas and landscaped areas from vehicle access, maintenance equipment, and excessive foot traffic to prevent compaction. Boulders, shrubs, ground covers, and fencing can be used to limit traffic in the amended area. • Install stepping stones if foot traffic is not preventable.
M3-06-R2 Maintain Landscape Areas and Pervious Footprint for Site		
• Inspect yearly.		• Avoid converting landscape areas and permeable pavements to impervious areas. Landscaped areas with amended soils can restore soil water infiltration and storage capacities, as well as decrease surface water runoff and erosion.
M3-06-R3 Add Compost Mulch and Allow Plant Debris to Remain on Soil		
• Spring and Fall.	Compost helps to control weeds, conserves soil moisture, improves filtration, regulates soil temperatures, and adds nutrients. See The Natural Lawn and Garden- Growing Healthy Soils: http://www.ci.bellevue.wa.us/pdf/Utilities/Healthy_Soil.pdf See Building Soil-Guidelines and Resources for Implementing Soil Quality and Depth: http://www.soilsforsalmon.org/pdf/Soil_BMP_Manual.pdf	• In vegetative areas, apply 2 to 3-inches of compost layer carefully to avoid smothering and damaging plants. • Allow plant debris to remain on soil to replenish organic matter. For areas in rain gardens, see maintenance section on *Rain Gardens and Stormwater Planter.* • In turf areas, consider aerating then applying 1/2 to 1-inch of fine screen compost and over seed.

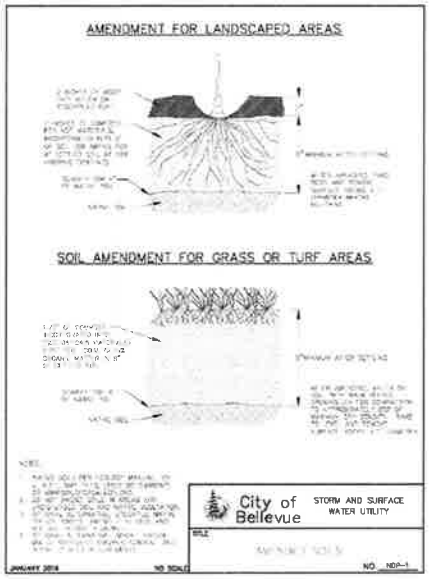
SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M



1 GRADING AND DRAINAGE PLAN
SCALE: 1" = 20'



2 SHEET FLOW DISPERSION DETAIL
SCALE: NTS



3 CITY OF BELLEVUE STANDARD DETAIL
SCALE: NTS

King County

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY BELLEVUE WA 98006

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
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CG PROJECT# 16015.902

PROJECT MANAGER	JPU
PREPARED BY	ZOS
APPROVED BY	GAC

REV	DATE	DESCRIPTION
1	6/13/2018	PERMIT SUBMITTAL

PLAN REVIEWERS SIGNATURE

SHEET NAME
GRADING AND DRAINAGE PLAN

SHEET NUMBER
C3.1

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

Aeronautical Study No.
2016-ANM-883-OE

Issued Date: 04/29/2016

Sean Douglas
Puget Sound Emergency Radio Network
401 5th Avenue
Suite 0600
Seattle, WA 98104

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

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

Structure:	Tower PSERN Bellevue Station 9 - NO FREQUENCIES SUBMITTE
Location:	Bellevue, WA
Latitude:	47-32-30.51N NAD 83
Longitude:	122-10-28.64W
Heights:	435 feet site elevation (SE)
	180 feet above ground level (AGL)
	615 feet above mean sea level (AMSL)

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

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

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

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 L.

This determination expires on 10/29/2017 unless:

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

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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

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

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

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

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

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

If we can be of further assistance, please contact our office at (817) 222-5928. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2016-ANM-883-OE.

Signature Control No: 285228102-290433203 (DNE)
Alice Yett
Technician

Attachment(s)
Additional Information

cc: FCC

Additional information for ASN 2016-ANM-883-OE

No frequencies submitted; therefore, none are approved by this determination. I will be necessary to file an additional study to obtain approval for all transmitting frequencies and the maximum power being used to transmit.

TETRA TECH

Report of

Geotechnical Investigation

PSERN – Communications Towers
Bellevue Station 9
Bellevue, Washington

February 2016

complex world CLEAR SOLUTIONS™

TETRA TECH

February 18, 2016

Mr. Mark Riley
Vice President
Odelia Pacific Corporation
1215 4th Avenue, Suite 1900
Seattle, WA 98161

SUBJECT: Geotechnical Investigation
PSERN – Bellevue Station 9
Bellevue, Washington
Tetra Tech Project No. 114-570974

Dear Mr. Riley:

Tetra Tech has performed a foundation investigation of the soil conditions at the proposed communications tower site 'Bellevue Station 9' located in Bellevue, Washington.

This report presents the geotechnical investigation and the foundation design recommendations. It is important that Tetra Tech provide consultation and review during the design phase, and field observation and testing services during construction, to ensure complete implementation of the geotechnical design recommendations.

If you have any questions, please contact myself or Marco Fellin at 406-543-3045.

Respectfully submitted,

TETRA TECH

Jeremy Dierking, P.E.
Project Geotechnical Engineer

Enclosure: 1 copy

2525 Palmer Street, Suite 2, Missoula, MT 59808
Tel 406.543.3045 Fax 406.543.3088 www.tetratech.com

Report of Geotechnical Investigation

PSERN – Bellevue Station 9
Enumclaw, Washington

Prepared for:

Odelia Pacific Corporation

Mr. Mark Riley
Vice President
1215 4th Avenue, Suite 1900
Seattle, WA 98161

Prepared by:

Tetra Tech

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Missoula MT 59808
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Fax (406) 543-3088
Tetra Tech Project No. 114-570974

February 18, 2016

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APPENDIX

- Important Information About Your Geotechnical Engineering Report (Published by ASFE)
- Explanation of Abbreviations and Descriptive Terms
- Classification of Soils for Engineering Purposes
- Drawing No. 0974-1 – Location of Exploratory Boring
- Field Soil Resistivity Test Results
- Figures:
  - Figure 1 – Log of Exploration Boring
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EXECUTIVE SUMMARY

The proposed tower site is located is behind Fire Station 9 at 12412 Newcastle Way, in Bellevue, Washington. The proposed tower will be located approximately 22 feet north from the north side curb of the parking lot. Site improvements will consist of a 120-foot tall communications tower with an equipment shelter to house electrical support equipment and a diesel generator. The site is located within a vacant lot behind the fire station in a heavily vegetated area. The site appeared relatively flat with an elevation difference on the order of 1 to 4 feet noted across the proposed lease area but was difficult to judge due to heavy vegetation restricting access.

Beneath a thin layer of topsoil, the subsurface profile generally consists of a soft to medium stiff sandy silt with gravel extending to approximately 6 feet. The sandy silt with gravel is underlain by a dense to very dense silty, clayey sand with gravel layer extending to approximately 8 feet. A dense to very dense poorly graded gravel with silt and sand was encountered below the silty, clayey sand with gravel layer and extends to the bottom of the boring (10.5 feet). Groundwater was not encountered in the boring at the time of the field investigation (October 8th, 2015).

For the soil conditions encountered at this site, the proposed tower should be supported on either; 1) a mat foundation bearing on the poorly-graded gravel with silt and sand or a zone of compacted engineered gravel fill extending to the natural gravel, or 2) a drilled pier foundation system. A mat foundation bearing on the poorly-graded gravel with silt and sand or a zone of compacted engineered gravel fill extending to the natural gravel is recommended to support the tower's structural loads and provide resistance for overturning moments. The mat should extend at least 48 inches below grade for frost protection. However, the depth of foundation embedment to resist overturning moments will likely control the actual foundation depth.

Due to site area constraints, a drilled pier foundation system will reduce the foundation footprint area, support the tower axial loads, and resist uplift and overturning forces induced by the tower. Drilled piers should be designed based on the ultimate (nominal) end bearing and ultimate (nominal) skin friction values presented in the recommendations below, and by applying the appropriate factor of safety (allowable stress design, ASD) or soil resistance factor (load and resistance factor design, LRFD). The equipment building should be supported on a conventional footing foundation placed below the frost depth, bearing on a minimum of 2 foot of engineered gravel fill.

This executive summary has been prepared solely to provide a general overview and should not be relied upon for any purpose except for that for which it was prepared. The full geotechnical report must be referenced for information about findings, recommendations and other concerns.

PURPOSE AND SCOPE OF STUDY

Tetra Tech drilled one subsurface exploration boring to obtain information on subsurface conditions at the proposed communications tower site (Drawing No. 0974-1). Soil samples obtained during the field exploration were tested in Tetra Tech's laboratory to determine physical and engineering characteristics of the on-site soils. Based on the proposed construction and subsurface conditions encountered, this report summarizes the field data and presents recommendations for design and construction of the proposed communications tower and equipment building foundations. The report also includes design parameters and

geotechnical engineering considerations related to construction. The investigation was performed in accordance with Tetra Tech's August 26th, 2015 proposal.

PROPOSED CONSTRUCTION

The proposed communications facility will consist of a 120-foot tall monopole tower with an equipment shelter to house electrical support equipment and a diesel generator. Based on experience with similar sized towers, the structural loads are estimated and assumed to be similar to the following conditions:

Condition	Load
Base Shear	75 kips
Maximum Overturning Moment	4,000 ft-kips
Axial Load	75 kips

It is anticipated that the equipment building to be constructed adjacent to the tower will be supported on a spread-footing or thickened-edge slab-on-grade foundation.

The foundation design recommendations presented in this report are based on the proposed construction presented above. If loadings, locations, or conditions are significantly different from those described above, Tetra Tech should be notified to conduct a geotechnical review of the project and perform additional analysis as required.

FIELD EXPLORATION

The field exploration was performed on October 8th, 2015. One boring was drilled near the proposed tower center (Drawing No. 0974-1) to explore subsurface conditions. The boring was advanced utilizing a truck-mounted drill rig equipped with an 8-inch diameter hollow-stem auger and was logged by a Tetra Tech field engineer.

Samples of the subsurface materials were taken with a 2-inch outside diameter (O.D.) split-spoon sampler. The sampler was driven into the various strata using a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6-inch increment was recorded; the total number of blows required to advance the sampler the second and third 6-inch increments is the penetration resistance (N value). The 2-inch O.D. sampler is the standard penetration test described by American Society for Testing and Materials (ASTM) Method D1586. Penetration resistance values indicate the relative density or consistency of the soils. Bulk samples of soil were obtained from the hollow-stem augers cuttings at select locations. The depth at which the samples were taken and the penetration resistance values are shown on the log of exploration boring.

LABORATORY TESTING

Samples obtained during the field exploration were taken to Tetra Tech's laboratory, where they were observed and visually classified in accordance with ASTM Method D2487, which is based on the Unified Soil Classification System. Representative samples were selected for testing to determine the physical properties of the soils in general accordance with ASTM or other approved procedures.

Tests Conducted:	To Determine:
Grain-size Distribution	Size and distribution of soil particles; that is, clay, silt, sand and gravel.
Atterberg Limits	The effect of varying water content on the consistency of fine-grained soils.
Natural Moisture Content	Moisture content representative of field conditions at the time samples were taken.
Moisture-Density Relationship	The optimum moisture content for compacting soil and the maximum dry unit weight (density) for a given compactive effort.
Resistivity and pH	The combination of these characteristics determines the potential of soil to corrode metal.
Sulfate Content	Potential of soils to deteriorate normal strength concrete.

Field and laboratory test results are summarized on Figures 2 and 3. These data, along with the field information, were used to prepare the exploration boring log on Figure 1.

SITE AND SUBSURFACE CONDITIONS

The proposed tower site is located is behind Fire Station 9 at 12412 Newcastle Way, in Bellevue, Washington. The proposed tower will be located approximately 22 feet north from the north side curb of the parking lot. Site improvements will consist of a 120-foot tall communications tower with an equipment shelter to house electrical support equipment and a diesel generator. The site is located within a vacant lot behind the fire station in a heavily vegetated area. The site appeared relatively flat with an elevation difference on the order of 1 to 4 feet noted across the proposed lease area but was difficult to judge due to heavy vegetation restricting access.

Beneath a thin layer of topsoil, the subsurface profile generally consists of a soft to medium stiff sandy silt with gravel extending to approximately 6 feet. The sandy silt with gravel is underlain by a dense to very dense silty, clayey sand with gravel layer extending to approximately 8 feet. A dense to very dense poorly graded gravel with silt and sand was encountered below the silty, clayey sand with gravel layer and extends to the bottom of the boring (10.5 feet).

Photo1: Looking northwest at BH-1 across proposed tower site.

Penetration resistance values on the order of 39 to greater than 50 blows per foot were recorded in the silty, clayey sand with gravel and the poorly graded gravel with silt and sand, indicating a dense to very dense soil stratum. Natural moisture contents in these layers range from 6 to 7 percent. A bulk sample obtained from an approximate depth of 7 to 10 feet classified as silty, clayey sand with gravel according to the ASTM Classification System (Figure 2). Results of a moisture-density relationship test (Figure 3) performed on the bulk sample of the clayey sand with gravel indicates a optimum moisture content of 10 percent and a maximum dry density of 126 pounds per cubic foot (pcf). The combination of pH (6.5) and resistivity (12,000 ohm-cm) indicate the potential for corrosion is negligible. Water soluble sulfate content testing results (11 mg/kg) indicate a negligible exposure to normal strength concrete from site soils.

The boring log should be referenced for a complete description of the soil conditions encountered.

Subsurface water was not encountered in the boring at the time of the field exploration (October 8th, 2015) and the boring was backfilled immediately after drilling. Groundwater levels may rise with seasonal precipitation and local irrigation practices. Numerous factors contribute to groundwater fluctuations, and evaluation of such factors is beyond the scope of this report.

SEISMIC DESIGN PARAMETERS

IBC 2012 design criteria are based on a 2 percent probability of exceedance, or in other words, a 98 percent probability of not being exceeded in a 50-year period. Based on the USGS National Seismic Design Mapping application, the peak ground acceleration at the project site in Bellevue, WA having a 2 percent probability of exceedance in any 50-year period is 0.585g. The

USGS application also provides spectral response acceleration data in bedrock for short (0.2 sec) periods (S_A) and for long (1 sec) periods (S_1) for similar probability and 50-year return periods. According to IBC design procedures, these acceleration data are then adjusted upward or amplified depending on soil classification to reflect magnification effects as the earthquake wave energies pass from bedrock into soil. The values are then reduced by a factor that accounts for partial damping of the wave energy by the structure. The final values obtained (known as S_{DS} and S_{D1}) become the basis for the structural design and in this case, at the proposed project sites, are estimated as 0.946g (S_{DS}) and 0.541g (S_{D1}).

The methods of IBC 2012 require that the properties of the soil at the proposed water tank site be classified as one of several site classes. The seismic design parameters for this site include a seismic zone soil profile type of (D), in accordance with the above referenced standard. Site Class D corresponds to a soil profile having stiff soil with an undrained shear strength between 1,000 and 2,000 psf and standard penetration resistance values between 15 and 50 blows per foot. This classification is based on the laboratory test data, the exploration boring information, and knowledge of the local geology.

Seismic Design Parameters

Site	Latitude (North)	Longitude (West)	PGA	S_s	S_1	Site Class	F_a	F_v	S_{DS}	S_{D1}
Bellevue Station 9	47.54181	-122.17462	0.585	1.419	0.541	D	1.0	1.5	0.946	0.541

Notes: **PGA** = Peak Ground Acceleration
S_s = 0.2 sec. Spectral Response Acceleration
S_1 = 1.0 sec. Spectral Response Acceleration
F_a = Short Period Seismic Design Factor
F_v = Long Period Seismic Design Factor
Return period = 2%
Time period = 50 years

SOIL RESISTIVITY TESTING

Tetra Tech performed soil resistivity testing of the in-situ conditions at the proposed communications tower site on October 7th, 2015. In summary, two electrode area arrays were completed at locations on the proposed site that are representative of "typical" site soil conditions. Due to the site constraints and limitations of gravel and shallow bedrock, each array was positioned in an areas that allowed the rods to be driven into the gravel.

The resistivity testing was completed in general accordance with ASTM method G57-06 (IEEE Standard 81) utilizing the Wenner Four-Electrode Method and the Nilsson Model 400 Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line with equal distance from one another. In consideration of space constraints and limitations at the site, each electrode is driven to 6 inches below ground surface at the 2-foot spacing interval, then a 4-foot interval, and finally a 5-foot spacing intervals. A low voltage current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation with its appropriate constant to convert the spacing in feet to centimeters is used to calculate the resistivity:

$$\rho = 191.5\ aR$$

Where:

ρ = measured soil resistance in ohm-cm, Ω-cm
a = equal electrode separation distance in feet
R = resistance measured from meter in ohms, Ω

An equally spaced electrode array was established at the proposed site through the anticipated lease area. The area (Area Array 1) was configured along a N-S axis that extended through the south east edge of the expected lease area. The second area (Area Array 2) was configured at E-W axis that also extended through the center of the expected lease area. As noted before, the area array axes were positioned in a line and spacing intervals were shortened due to site constraints and limitations.

The field data and subsequent results of the soil resistivity testing are presented in the Appendix. The project consultants and contractors will use these field test results in their design of the antenna grounding system.

ENGINEERING ANALYSIS AND RECOMMENDATIONS

Site Grading

Site grading plans were not available at the time of the subsurface investigation. The proposed site is relatively flat with an elevation difference on the order of 1 to 4 feet noted across the proposed lease area. Elevations differences were difficult to approximate due to dense vegetation on site. Site grading should provide positive drainage away from the equipment building and tower base. Excavations for the foundation will be made in the natural sandy silt and the silty, clayey sand with gravel. Excavation of the site soils can be accomplished with most heavy-duty earth excavating equipment.

The natural silty, clayey sand with gravel should be used for backfill around foundations, provided it is moisture conditioned and placed with proper moisture and density control. If additional material is required for backfill, engineered gravel fill should be imported to the site.

Data from the exploratory boring indicates that groundwater should not be encountered within the depth of the anticipated foundation excavation for the tower.

Design and construction criteria presented below should be observed for site preparation purposes and when preparing project documents.

1. All topsoil and organic material should be removed from the proposed construction locations.

2. All fill and backfill should be approved by the geotechnical engineer, moisture-conditioned to within 2 percent of optimum moisture content, and placed in uniform lifts of suitable thickness for the compaction equipment. It should then be compacted to the following minimum dry densities as determined by ASTM D698, or ASTM D4253 and D4254 if applicable.

ASTM D698 (%)	ASTM D4253 & ASTM D4254 (%)

Site Fill and Backfill	95	70
Below Foundations	98	75

3. Imported granular material used for site grading or as backfill within the foundation footprint should meet the following grading limits and be compacted in accordance with Item 2 above.

Sieve or Screen Size	Percent Passing
3-Inch	100
No. 4	30 – 50
No. 200	0 – 20

4. The silty to clayey sand with gravel is suitable for use as backfill around the foundations and as over-lot fill provided it is compacted in accordance with item 2 above.

5. The contractor is responsible for providing safe working conditions during underground excavations. Temporary construction excavations greater than 4 feet in depth that workers will enter will be governed by OSHA guidelines given in 29 CFR, Part 1926. For planning purposes, the soils classify as Type C.

6. Site grading should be developed and maintained during and after construction to provide positive drainage away from foundations.

Tower Foundation

The poorly graded gravel with silt and sand or a zone of engineered gravel fill extending to the natural gravel is capable of supporting the anticipated vertical compression and shear loads, but as is typical for self-supporting towers the critical load conditions are uplift and overturning. Supporting the proposed tower on either; 1) mat foundations bearing on poorly graded gravel with silt and sand or a zone of engineered gravel fill extending to the natural gravel, or 2) on a drilled pier foundation are the most suitable foundation alternatives.

Mat Foundation

The natural poorly-graded gravel with silt and sand is capable of supporting the anticipated vertical compression and shear loads, and as is typical for self-supporting towers the critical load conditions are uplift and overturning.

A single mat foundation bearing on the natural poorly-graded gravel with silt and sand or a zone of engineered gravel fill extending to the natural gravel is recommended to support the tower's structural loads and provide resistance for overturning moments. The mat should be proportioned for an ultimate bearing pressure of 9 kips per square foot (ksf) under transient load conditions and by applying the appropriate factor of safety (allowable stress design, ASD, typical standard FOS=3) or soil resistance factor (load and resistance factor design, LRFD). Based on the theory of elastic settlement, assuming a 20-foot by 20-foot square concrete mat foundation and a bearing pressure of 3 ksf, the estimated total settlement for a mat supported

on the natural gravel or engineered gravel fill will be less than 2 inches. The zone of engineered gravel fill should extend a minimum of 3 feet beyond the edges of the mat foundation.

The depth of foundation embedment to resist overturning moments will control the foundation depth. For a mat to fail from overturning loads, it must rotate about some point at the base. Resistance to overturning is provided by the bearing pressure across the base of the mat, combined with the weight of the mat and the weight of any soil above the mat. Under static conditions, the tower loads are relatively light. For the critical loading condition, which occurs due to wind and ice loads, the overturning moment for the tower will be relatively large.

The location of the resultant on the base of the mat caused by the overturning moment (rather than the allowable toe pressure) will probably control the size of the foundation. For transient loads (e.g., wind, ice and earthquake), it is permissible to allow the base resultant to be located within the middle half of the mat. As long as the resultant of the ASD bearing pressure is located within the middle half of the mat, the ASD factor of safety is equal or greater than 1.5 against overturning. If the resultant falls outside this area, the ASD factor of safety is less than 1.5, which is less than the normally acceptable minimum safety factor for this kind of structure.

The lateral resistance of a mat foundation is controlled by a combination of sliding resistance between the mat and the foundation materials, and the lateral pressure against the side of the footing. Criteria are presented below for determining the lateral resistance of mat foundations. The design and construction criteria presented below should be observed for a mat foundation system. Construction details should be considered when preparing project documents.

1. In preparation for construction of the mat foundation, the subgrade at foundation elevation should be moisture conditioned to within 2 percent of optimum, graded level, and compacted in accordance with Item 2 in Site Grading.

2. Support the tower structural loads with a concrete mat founded on the poorly-graded gravel with silt and sand or a zone of engineered gravel fill designed using an ultimate bearing pressure of 9 ksf, and by applying the appropriate factor of safety (ASD, FOS=3) or soil resistance factor (LRFD). It should be sized so that the factor of safety against overturning is at least 1.5.

3. Lateral loads of a mat foundation will be resisted by a combination of sliding resistance of the mat and the foundation materials and the lateral bearing pressure against the side of the mat. Resistance to sliding can be calculated based on a coefficient of friction 0.45 for the natural gravel or engineered gravel fill and a lateral bearing pressure of 350 pounds per square foot.

4. The mat footing should be placed a minimum of 48 inches below grade for frost protection.

5. The ultimate overturning resistance can be calculated using the full weight of the mat plus the weight of any material enclosed in the prism of soil above the mat. For estimating purposes, it should be assumed that the soil prism extends outward and upward from the top corners of the mat at an angle of 30 degrees from vertical. The unit weight of soil backfill within the prism should be calculated using a unit weight of 120 pounds per cubic foot provided the cover is compacted to at least 95 percent of the maximum dry density determined by ASTM Method D698.

6. A representative of the geotechnical engineer should observe all mat excavations prior to placement of concrete forms.

Drilled Piers

With the use of a drilled pier foundation system, loads are supported by individual piers. Loads applied to the piers are transmitted to the bearing strata partially through skin friction which develops on the sides of the pier and partially through end bearing. Drilled piers have the advantage of providing high supporting capacity with a relatively small amount of movement.

Due to the site congestion, a drilled pier foundation system will reduce the footprint of the tower foundation system, support the tower axial loads, and resist the uplift and overturning forces induced by the tower. The drilled pier foundation system should be sized so that the uplift force due to overturning does not exceed the dead weight of the pier plus the frictional resistance between the pier and the soil.

Care should be taken that drilled pier shafts are constructed straight sided and not oversized at their top. Mushroomed drilled pier tops can provide a bearing surface for freezing soils to exert uplift force on the piers causing potential unwanted movements.

The following design and construction recommendations should be observed for drilled pier foundation systems for the proposed structures.

1. Drilled piers should be designed based on the ultimate end bearing and ultimate skin friction values in the table below and by applying the appropriate factor of safety (ASD, typical standard FOS=3 for end bearing and 2.5 for skin friction) or soil resistance factor (LRFD). Skin friction should be neglected in the upper 5 feet of overburden soils.

Depth (ft)	Soil Type	End Bearing Pressure (psf)	Skin Friction (psf)
6	ML	0	500
8	SC-CM	0	600
12	GP-GM	12000	1000
18	GP-GM	18000	1500
24	GP-GM	24000	2000

2. Uplift due to structural loading on the shaft can be resisted by using 75 percent of the factored skin resistance plus an allowance for shaft weight

3. Cobbles and boulders were encountered in the boring starting at a depth of 8 feet. The presence, size, and thickness of cobble and boulders will vary and present difficult drilling and construction conditions, including installing temporary casing. These conditions must be fully considered by the drilling contractor when selecting the appropriate drilling and casing equipment. In our opinion, drilling will require heavy-duty drilling equipment, which may include core barrels, rock bits, downhole hammers, etc.

4. A minimum drilled pier length of 15 feet is recommended for the design of all drilled piers bearing in the native soils.

5. A minimum drilled pier diameter of 24 inches is recommended to facilitate proper cleaning and observation of the pier hole. A minimum spacing requirement between drill piers should be three diameters from center to center.

6. Drilled piers should be reinforced their full length.

7. Drilled piers should be properly cleaned prior to placement of concrete. Concrete should be placed in the drilled piers the same day they are drilled. Failure to place concrete the day of drilling will normally result in the requirement for additional penetration.

8. Concrete placed in the pier should be a fluid mix having a slump in the range of 6 to 8 inches. Concrete placement should occur as soon as possible after reinforcing steel placement. Concrete placement should be continuous from the bottom to the top elevation of the pier and should continue after pier excavation is full until good quality concrete is evident at the top of the pier.

9. Temporary casing will be necessary for drilled pier construction below groundwater. If groundwater enters the drilled pier holes, the use of dewatering equipment may be required or concrete could be pumped using a tremmie pipe from the bottom of the pier shaft upward to displace the water. In no case should concrete be placed in more than 3 inches of water using conventional concrete placement.

A representative of a geotechnical engineer should observe installation of the drilled piers on a full time basis to check the appropriate bearing stratum is being penetrated and to monitor other pier construction procedures.

Building Foundation

Equipment buildings are typically about 12 by 26 feet in plan and lightly loaded with about 20 kips total weight. In preparation for spread footing construction, the natural sandy silt with gravel subgrade should be scarified to a depth of 12 inches, moisture-conditioned to within 2 percent of optimum and compacted to at least 95 percent of the maximum dry density as determined by ASTM D698. The equipment building should be supported on continuous spread footings placed below normal frost depth on a minimum of 2 foot of engineered gravel fill. Continuous footings bearing on engineered gravel fill should be designed for an ultimate soil bearing pressure of 9 kips per square foot (ksf) and by applying the appropriate factor of safety (ASD, typical standard FOS=3) or soil resistance factor (LRFD).

CONTINUING SERVICES

Two additional elements of geotechnical engineering service are important to the successful completion of this project.

1. **Consultation with Tetra Tech during the design phase**. This is essential to ensure that the intent of the recommendations is incorporated in design decisions related to the project and that changes in the design concept consider geotechnical aspects.

2. **Observation and monitoring during construction**. Tetra Tech should be retained to observe the earthwork phases of the project, including the site grading and foundation

excavations, to determine that the subsurface conditions are compatible with those used in the analysis and design. During site grading, placement of fill should be observed and tested to confirm that the proper compaction has been achieved. In addition, if environmental contaminants or other concerns are discovered in the subsurface, Tetra Tech personnel are available for consultation.

LIMITATIONS

This study has been conducted in accordance with generally accepted geotechnical engineering practices in the region where the work was conducted. The conclusions and recommendations submitted in this report are based upon project information provided to Tetra Tech and data obtained from the exploratory boring drilled at the location indicated. The nature and extent of subsurface variations across the site may not become evident until construction. Tetra Tech should be on site during construction, to verify that actual subsurface conditions are consistent with those described herein.

This report has been prepared exclusively for the client. This report and the data included herein shall not be used by any third party without the express written consent of both the client and Tetra Tech. Tetra Tech is not responsible for technical interpretations by others. As the project evolves, Tetra Tech should provide continued consultation and field services during construction to review and monitor the implementation of the recommendations, and verify that the recommendations have been appropriately interpreted. Significant design changes may require additional analysis or modifications of the recommendations presented herein. On-site observation of excavations and foundation bearing strata and testing of fill should be performed by a representative of the geotechnical engineer.

Prepared by: Cole Duncan, E.I.T. Reviewed by: Jeremy Dierking, P.E.

APPENDIX

IMPORTANT INFORMATION
ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

More construction problems are caused by site subsurface conditions than any other factor. As troublesome as subsurface problems can be, their frequency and extent have been lessened considerably in recent years, due in large measure to programs and publications of ASFE/The Association of Engineering Firms Practicing in the Geosciences.

The following suggestions and observations are offered to help you reduce the Geotechnical-related delays, cost-overruns and other costly headaches that can occur during a construction project.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A Geotechnical engineering report is based on a subsurface exploration plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and configuration; the location of the structure on the site and its orientation; physical concomitants such as access roads, parking lots, and underground utilities, and the level of additional risk which the client assumed by virtue of limitations imposed upon the exploratory program. To help avoid costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of the report may affect its recommendations.

Unless your consulting Geotechnical engineer indicates otherwise, *your Geotechnical engineer report should not be used:*

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified:
- when there is a change of ownership, or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems which may develop if they are not consulted after factors considered in their reports' development have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by Geotechnical engineers who then render an opinion about overall subsurface conditions, their likely reaction to proposed conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those inferred to exist, because no Geotechnical engineer, no matter how qualified, and not subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be fare more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their Geotechnical consultants through the construction stage*, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a Geotechnical engineering report is based on conditions which existed at the time of subsurface exploration, *construction decisions should not be based on a Geotechnical engineering report whose adequacy may have been affected by time.* Speak with the Geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as flood, earthquakes or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

GEOTECHNICAL SERVICES ARE PREFORMED FOR SPECIFIC PURPOSES AND PERSONS

Geotechnical engineers' reports are prepared to meet the specific needs of specific individuals. A report prepared for a consulting civil engineer may not be adequate for a construction contractor, or even some other consulting civil engineer. Unless indicated otherwise, this report was prepared expressly for the client involved and expressly for purposes indicated by the client. Use by any other persons for any purpose, or by the client for a different purpose, may result in problems. *No individual other than the client should apply this report for its intended purpose without first conferring with the*

geotechnical engineer. No person should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plants based on misinterpretations of a geotechnical engineering report. To help avoid these problems, the geotechnical engineer should be retained to work with other appropriate design professionals to explain relevant geotechnical findings and to review the adequacy of their plans and specifications relative to geotechnical issues.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE ENGINEERING REPORT

Final boring logs are developed by geotechnical engineers based upon their interpretation of field logs (assembled by site personnel) and laboratory evalution of field samples. Only final boring logs customarily are included in geotechnical engineering reports. *These logs should not under any circumstances be redrawn* for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, *give contractors ready access to the complete geotechnical engineering report* prepared or authorized for their use. Those who do not provide such access may proceed under the *mistaken* impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical consultants. To help prevent this problem, geotechnical engineers have developed model clauses for use in written transmittals. These are *not* exculpatory clauses designed to foist geotechnical engineers' liabilities onto someone else. Rather, they are definitive clauses which identify where geotechnical engineers' responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report, and you are encouraged to read them closely. your geotechnical engineer will be pleased to give full and frank answers to your questions.

OTHER STEPS YOU CAN TAKE TO REDUCE RISK

Your consulting geotechnical engineer will be pleased to discuss other techniques which can be employed to mitigate risk. In addition, ASFE as developed a variety of materials which may be beneficial. Contact ASFE for a complimentary copy of its publications directory.

Published by

8811 Colesville Road/Suite G106/Silver Spring, Maryland 20910/(301)565-2733

TETRA TECH

LOGS OF EXPLORATIONS
EXPLANATION OF ABBREVIATIONS AND DESCRIPTIVE TERMS

SSS (SPT) - Standard penetration resistance test -- results recorded as the number of blows of a 140-pound hammer falling 30 inches required to drive a 2-inch O.D. split sample spoon the second and third 6-inch increments of an 18-inch distance.

LSS - Modified penetration test – results recorded as the number of blows of a 140-pound hammer falling 30 inches required to drive a 2.5-inch O.D. split spoon the second and third 6-inch increments of an 18-inch distance.

SRS - Split barrel ring sampler 2-inches I.D. for taking undisturbed samples.

LRS - Split barrel ring sampler 2.5 inches I.D. for taking undisturbed samples.

STS - Shelby tube sampler for taking undisturbed samples (2" to 3-5/16" I.D.).

Sack (SK) or Bag - Sample of disturbed soil placed in canvas sack or plastic bag.

GWL - Groundwater level on the date shown on the logs.

RQD - Rock quality designation (RQD) for the bedrock samples are determined for each core run by summing the length of all sound, hard pieces of core over four inches in length, and dividing this number by the total length of the core run. This value, along with the core recovery percentage, is recorded on the drill logs.

GRAIN SIZES

	U.S. Standard Series Sieve					Clear Square Sieve Openings	
	200	40	10	4	¾"	3"	12"
Silts & Clays Distinguished on Basis of Plasticity	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

CONSISTENCY		RELATIVE DENSITY	
Clays & Silts	SPT* Blows/foot	Sands & Gravels	SPT* Blows/foot
Very Soft	0 – 2	Very Loose	0 – 4
Soft	3 – 4	Loose	5 – 10
Firm	5 – 8	Medium Dense	11 – 30
Stiff	9 – 15	Dense	31 – 50
Very Stiff	15 – 30	Very dense	Over 50
Hard	Over 30		

*Standard Penetration Test; PL = Plastic Limit; LL = Liquid Limit

TETRA TECH

CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES

ASTM Designation: D 2487 – 83

(Based on Unified Soil Classification System)

MAJOR DIVISIONS				GROUP SYMBOL	GROUP NAME
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3^E$	GP	Poorly graded gravel [F]
		Gravels with Fines More than 12% fines	Fines classify as ML or MH	GM	Silty gravel [FGH]
			Fines classify as CL or CH	GC	Clayey gravel [FGH]
	Sands 50% or more of coarse faction passes No. 4 sieve	Clean Sands Less than 5% fines	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3^E$	SP	Poorly graded sand [I]
		Sands with Fines More than 12% fines	Fines classify as ML or MH	SM	Silty Sand [GHI]
			Fines classify as CL or CH	SC	Clayey sand [GHI]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI > 7 and plots on or above "A" line	CL	Lean clay [KLM]
			PI < 4 or plots below "A" line	ML	Silt [KLM]
		Organic	Liquid limit – oven dried / Liquid limit – not dried < 0.75	OL	Organic clay [KLMN] Organic silt [KLMO]
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line	CH	Fat clay [KLM]
			PI plots below "A" line	MH	Elastic silt [KLM]
		Organic	Liquid limit – oven dried / Liquid limit – not dried < 0.75	OH	Organic clay [KLMO] Organic silt [KLMO]
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay

[D] Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $Cc = (D_{30})^2 / (D_{10} \times D_{90})$

[F] If soil contains ≥15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥15% gravel, add "with gravel" to group name.
If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.

[L] If solid contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.

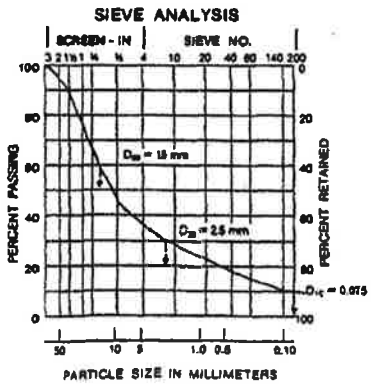
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

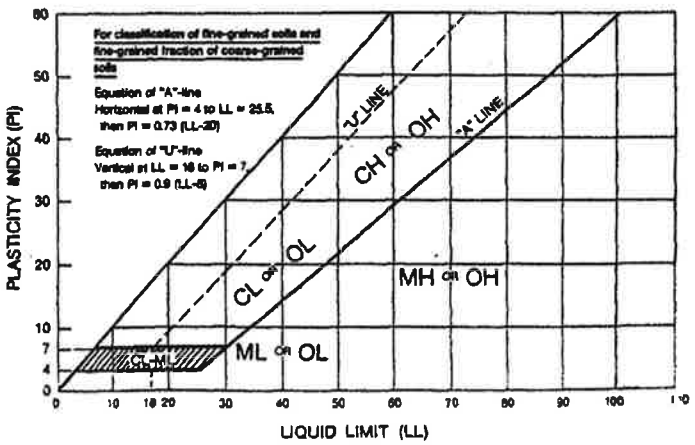
[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A: line.

[P] PI plots on or above "A: line.

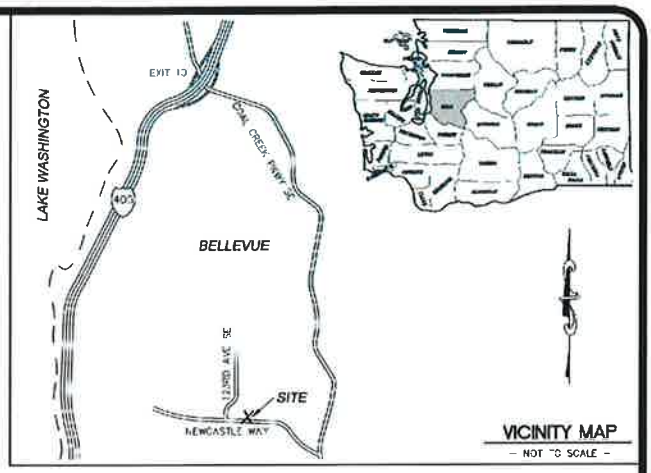
[Q] PI plots below "A: line.

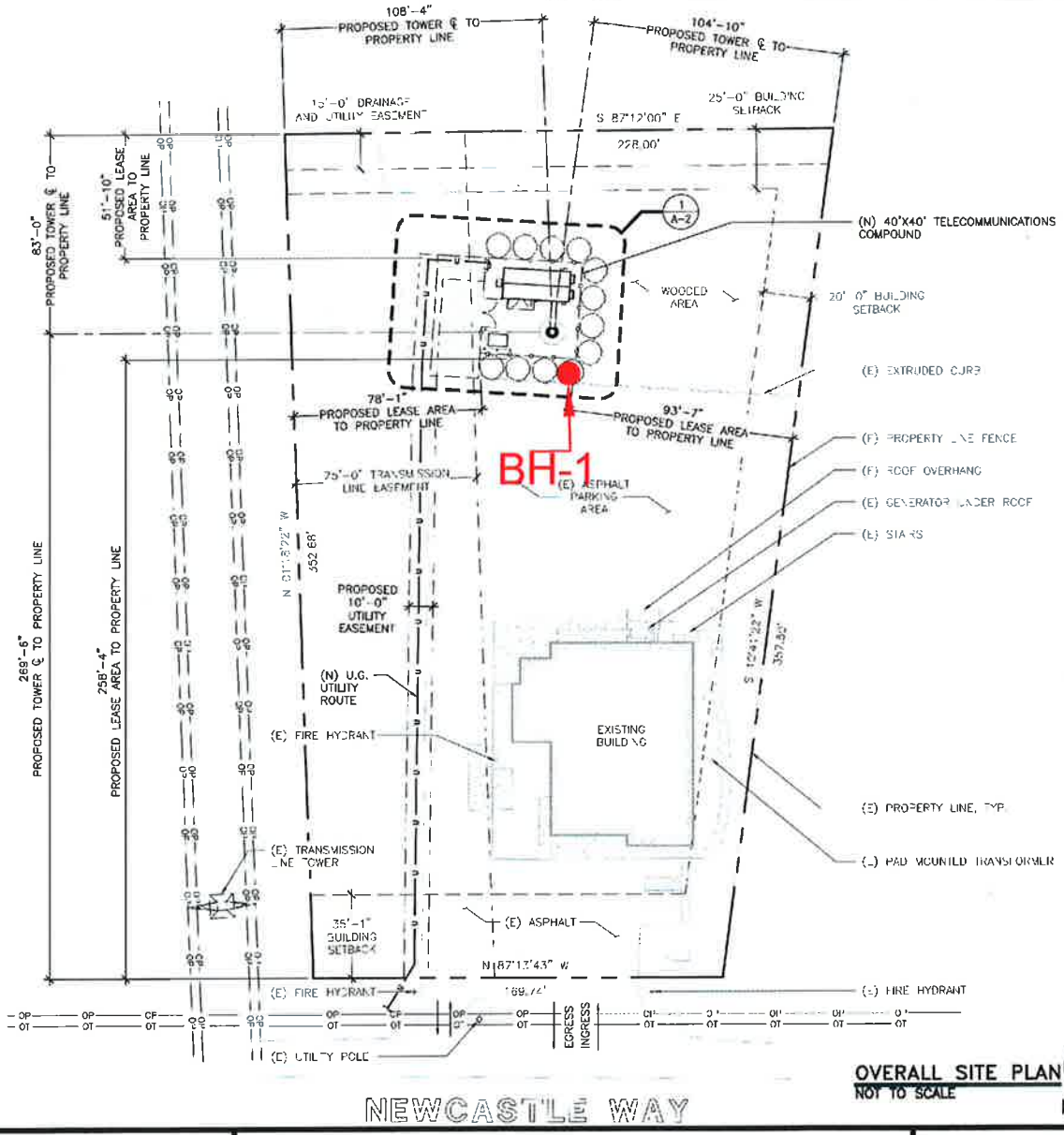




$C_u = \frac{D_{60}}{D_{10}} = \frac{15}{0.075} = 200$ $C_c = \frac{(D_{30})2}{D_{12} \times 10_{30}} + \frac{(2.5)-}{0.075 \times 15} = 5.6$

N::\Geotech\Forms\Soil





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TETRA TECH
www.tetratech.com
2525 Palmer St. Suite 2
Missoula, MT 59808
Phone: (406) 543-3045

Client: Odelia Pacific

Bellevue Station
Bellevue, WA
LOCATION OF EXPLORATORY BORING

Project No.:	114-470974
Date:	November 2015
Drawn By:	A. Hotaling
Drawing Number	0974-1

TETRA TECH

Soil Resistivity Testing Summary: Field Data and Results

Site Name and Address:		PSERN: Bellevue Station 9			
Company Performing Test (include name of person and date):		Tetra Tech, Cole Duncan October 7, 2015			
Test Instrument (Model #, Serial #, date of last calibration):		Nilsson Soil Resistance Meter - Model # 400 and Serial # 40-2192 Calibrated in October 2013			
Areas to be Measured	**Data Recordings**	**Separation Distance Between Test Rods or Electrodes (feet)**			
		2	**4**	**5**	
Area Array 1	Measured Resistance (ohms, Ω)	62	49	45	
(N-S)	Calculated Resistivity (ohm-cm, Ω-cm)	23,746	37,534	43,088	0
Area Array 2	Measured Resistance (ohms, Ω)	71	59	55	
(E-W)	Calculated Resistivity (ohm-cm, Ω-cm)	27,193	45,194	52,663	0

Additional Site Information	
Description of Soil as Seen on Site:	Sandy silt, organics, recently cleared brush.
Soil Condition (Wet, Damp, or Dry):	wet soil, muddy areas
Earth Condition:	existing communications tower facility, Recentley cleared brush
Weather for last 7 Days:	Mostly Clear or partly cloudy, with two hours of light rain on the 25th of september
Comments: The arrays were positioned in a line and spacing intervals were shortened due to site constraints and limitations	

Note - Soil Resistivity Formula: $\rho = 191.5\ aR$; ρ = measured soil resistance (Ω-cm), a = electrode separation (feet), R = meter resistance measurement (Ω)

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Figure No. 1

LOG OF BORING

Boring BH-1

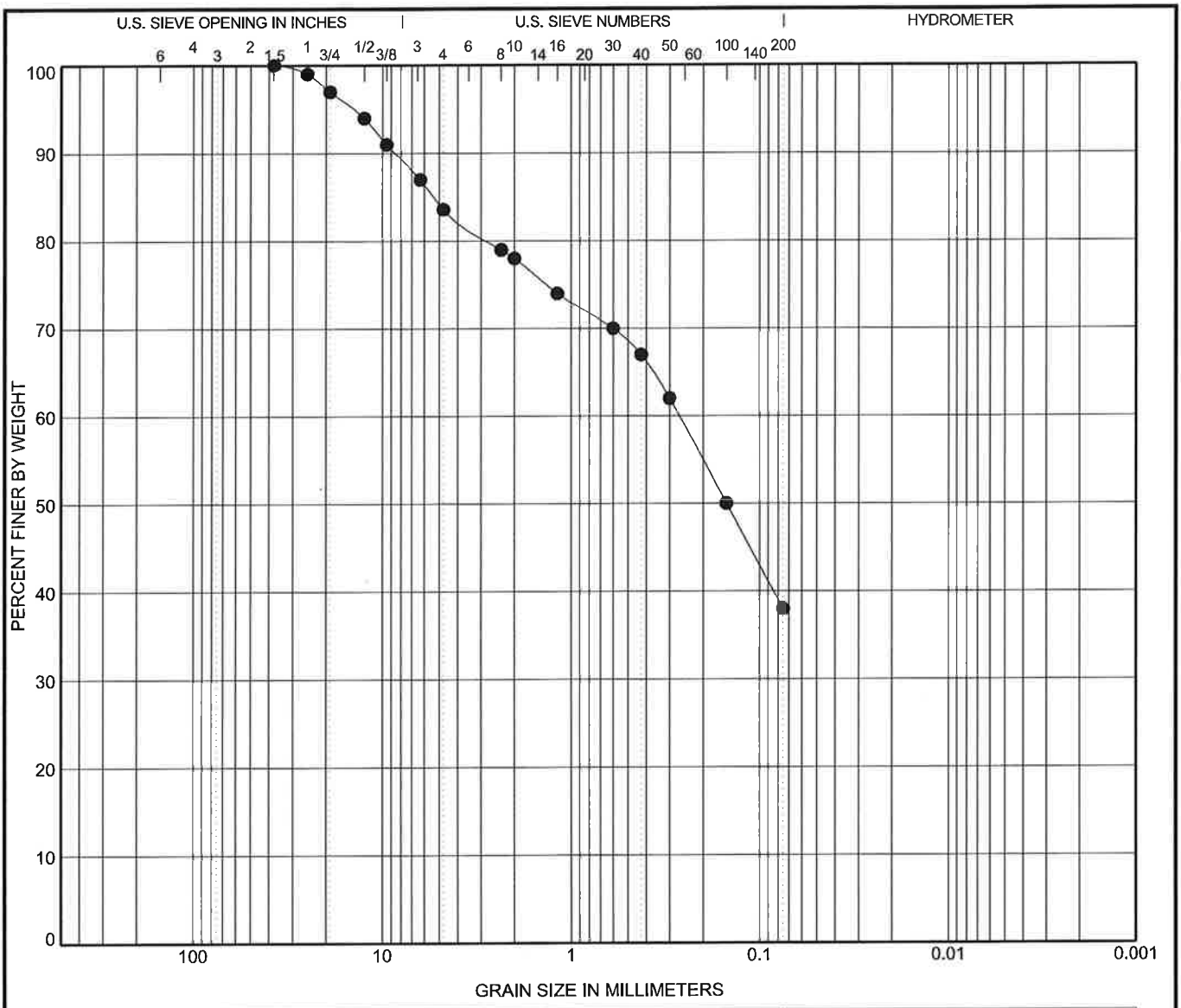
TETRA TECH

Project: Bellevue Station 9 Tower		**Rig:** GeoProbe **Hammer:** Auto	**Boring Location** N: 47.541774 **Coordinates** E: -122.174717
Project Number: 114-570974		**Boring Diameter:** 8"	**System:** Decimal Degrees **Datum:** NAD83 **Top of Boring Elevation:** 434.0 ft
Date Started: 10/8/15	**Date Finished:** 10/8/15	**Drilling Fluid:** None	**Abandonment Method:** Backfilled with Cuttings
Driller: ESN **Logger:** Cole Duncan		**Location:** North of Parking Lot	

Depth (ft) / Elev. (ft)	Operation	Sample Type	Recovery (%)	RQD (%)	Blow Count	Lithology	Material Description	Depth (ft) / Elev. (ft)	MC (%)	LL	PL	-200 (%)	DD	Remarks and Other Tests
0							TOPSOIL, SILT (ML), soft to very stiff, moist, brown.	0.3 / 433.7	7					
1 / 433.0			80		2 - 9 - 11		Sandy SILT with gravel (ML), soft to medium stiff, moist, tan/brown, fine to medium grained.							
2 / 432.0									7					
3 / 431.0			100		2 - 2 - 2									
4 / 430.0									4					
5 / 429.0			70		2 - 2 - 3									
6 / 428.0							Silty, Clayey SAND with gravel (SC-SM), dense to very dense, moist, tan/brown, fine to coarse grained, subrounded to subangular.	6.0 / 428.0						
7 / 427.0			100		14 - 25 - 33				7	19	15	38		pH: 6.5 Resistivity: 12,000 ohm*cm
8 / 426.0							Poorly-Graded GRAVEL with silt and sand (GP-GM), dense to very dense, moist, gray to tan/brown, fine to coarse grained, subangular to subrounded.	8.0 / 426.0						
9 / 425.0									6					
10 / 424.0			70		20 - 27 - 36									Auger Refusal, moved to the west and drilled another hole with refusal at 10' again
							Boring Depth: 10.5 ft, *Elevation: 423.5 ft*	10.5 / 423.5						

Water Level Observations		Remarks:
▽ After Drilling: Not Recorded	▽ During Drilling: Not Encountered ▼ After Drilling: Not Recorded	

TT LOG OF BORING - MDT_REVISED_2009+.GDT - 11/12/15 10:34 - N:\GEOTECH\REPORTS\REPORT 2015\CELL TOWERS\ODELIA\BELLEVUE STATION\BELLEVUE.GPJ



Specimen Identification	Classification	LL	PL	PI	Cc	Cu
BH-1 - (7 - 10 ft)	**SILTY, CLAYEY SAND with GRAVEL(SC-SM)**	**19**	**15**	**4**		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
BH-1 - (7 - 10 ft)	**37.5**	**0.267**			**16**	**46**	**38**	

TETRA TECH

GRAIN SIZE DISTRIBUTION

Project: Bellevue Station 9 Tower

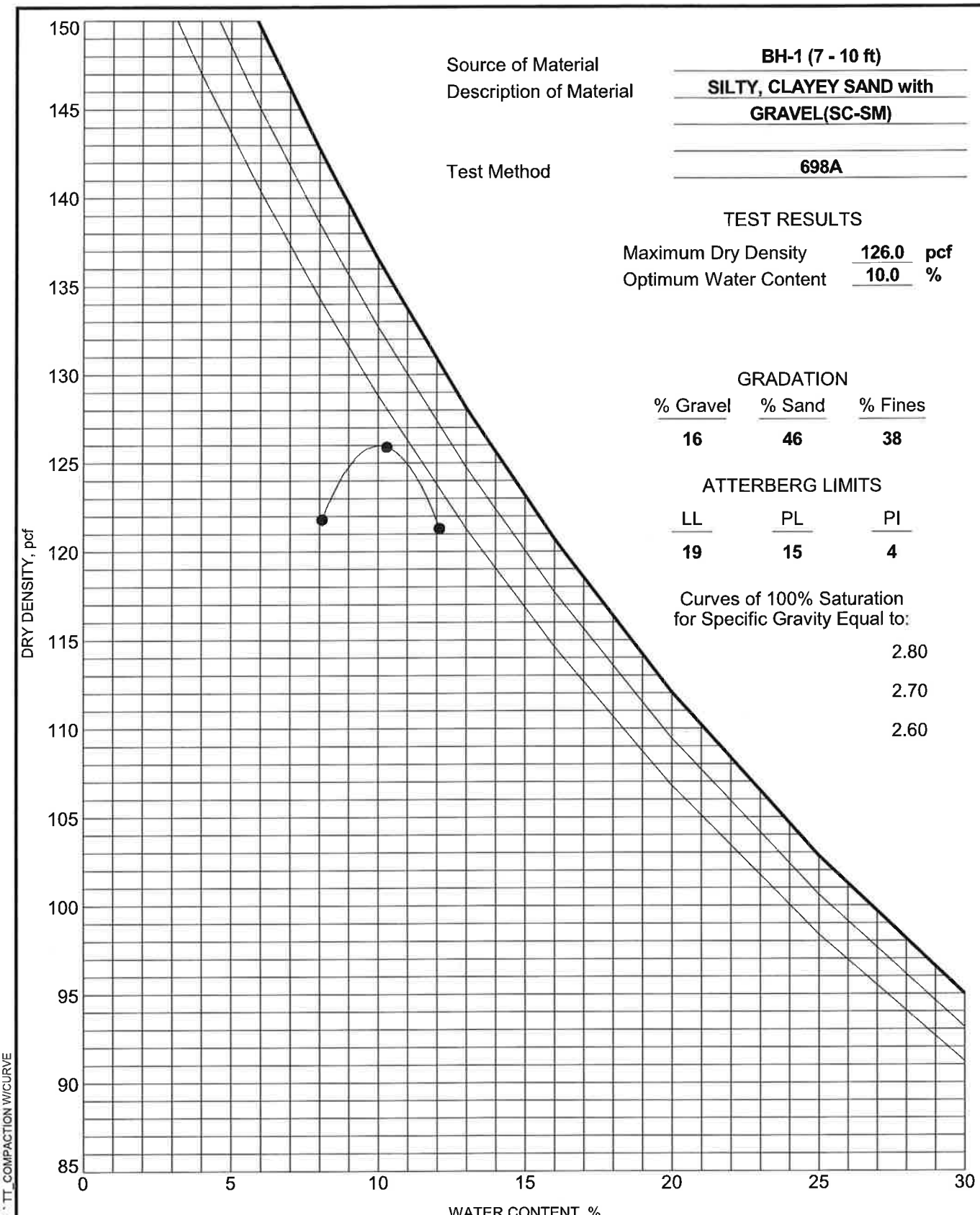
Location: North of Parking Lot

Number: 114-570974

Figure No. 2

BELLEVUE.GPJ ' 11-12-15 ' ' TT_US GRAIN SIZE

Revised 1-23-08 (MAT)



Source of Material	**BH-1 (7 - 10 ft)**
Description of Material	**SILTY, CLAYEY SAND with GRAVEL(SC-SM)**
Test Method	**698A**

TEST RESULTS

Maximum Dry Density	**126.0**	**pcf**
Optimum Water Content	**10.0**	**%**

GRADATION

% Gravel	% Sand	% Fines
16	**46**	**38**

ATTERBERG LIMITS

LL	PL	PI
19	**15**	**4**

Curves of 100% Saturation for Specific Gravity Equal to:

2.80

2.70

2.60

TETRA TECH

MOISTURE-DENSITY RELATIONSHIP

Project: Bellevue Station 9 Tower

Location: North of Parking Lot

Number: 114-570974

Figure No. 3

BELLEVUE.GPJ ` 11-12-15 ` ` TT_COMPACTION W/CURVE

Revised 1-23-08 (MAT)

Integra Realty Resources
Seattle

Market Study

Bellevue Station 9
Monopole Telecommunications Tower
12412 SE 69th Way
Bellevue, King County, Washington 98006

Prepared For:
Odelia Pacific Corporation

Effective Date of the Appraisal:
June 17, 2016

Report Format:
Appraisal Report – Standard Format

IRR - Seattle
File Number: 2016-0215

Bellevue Station 9
12412 SE 69th Way
Bellevue, Washington

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Seattle, WA 98101

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August 2, 2016

Sarah Telschow
Odelia Pacific Corporation
5506 6th Avenue South
Seattle, WA 98108

SUBJECT: Market Study
Bellevue Station 9
12412 SE 69th Way
Bellevue, King County, Washington 98006
IRR - Seattle File No. 2016-0215

Dear Ms. Telschow:

Integra Realty Resources – Seattle is pleased to submit the accompanying market study of the referenced property. The client for the assignment is Odelia Pacific Corporation. The intended user for the assignment is Odelia Pacific Corporation and no others. The intended use is to assist the intended user in evaluating the market value impacts of monopole telecommunications towers on residential properties.

The market study is intended to conform with the Uniform Standards of Professional Appraisal Practice (USPAP), the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute, and applicable state appraisal regulations.

To report the assignment results, we use the Appraisal Report option of Standards Rule 2-2(a) of the 2016-2017 edition of USPAP. As USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal, we adhere to the Integra Realty Resources internal standards for an Appraisal Report – Standard Format. This type of report has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. It meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station at 12412 SE 69th Way.

Market Study Conclusion

Based on the preceding valuation analysis and subject to the definitions, assumptions, and limiting conditions expressed in the report, it is our opinion that there is no discernable negative impact on single-family home values resulting from the presence of the subject telecommunication tower.

This market study is not based on any extraordinary assumptions or hypothetical conditions that may impact the assignment results.

If you have any questions or comments, please contact the undersigned. Thank you for the opportunity to be of service.

Respectfully submitted,

INTEGRA REALTY RESOURCES - SEATTLE

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Addenda

A. Appraiser Qualifications
B. Comparison of Report Formats
C. Property Information

General Information

Identification of Subject

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station located at 12412 SE 69th Way.

Current Ownership and Sales History

The owner of the proposed telecommunications tower will be King County.

The owner of the underlying land is the Bellevue Fire Department. To the best of our knowledge, no sale or transfer of ownership of the underlying land has occurred within the past three years and as of the effective date of this market study, the underlying land is not subject to an agreement of sale or option to buy, nor is it listed for sale.

Purpose of the Market Study

The purpose of the market study is to determine the impact, if any, on residential property values as a result of the presence of the subject telecommunications tower.

Effective Date and Report Date

The effective date of the market study is June 17, 2016 and the market study is valid only as of the stated effective date. The date of the report is August 2, 2016.

Definition of Market Value

Market value is defined as:

"The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- Buyer and seller are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their own best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale."

(Source: Code of Federal Regulations, Title 12, Chapter I, Part 34.42[g]; also Interagency Appraisal and Evaluation Guidelines, Federal Register, 75 FR 77449, December 10, 2010, page 77472)

Intended Use and User

The intended use of the market study is to assist the intended user in evaluating the market value impacts of monopole telecommunications towers on residential properties. The client, as well as the intended user, is Odelia Pacific Corporation.

No party or parties other than aforementioned intended users may use or rely on the information, opinions, and conclusions contained in this report.

Applicable Requirements

This appraisal is intended to conform to the requirements of the following:

- Uniform Standards of Professional Appraisal Practice (USPAP);
- Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute;
- Applicable state appraisal regulations.

Report Format

This report is prepared under the Appraisal Report option of Standards Rule 2-2(a) of the 2016-2017 edition of USPAP. As USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal, we adhere to the Integra Realty Resources internal standards for an Appraisal Report – Standard Format. This type of report has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. It meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP. For additional information, please refer to Addendum B – Comparison of Report Formats.

Prior Services

We have not performed any services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.

Scope of Work

To determine the appropriate scope of work for the assignment, we considered the intended use of the market rent study, the needs of the user, the complexity of the property, and other pertinent factors. Our concluded scope of work is described below.

Data Collection

Three types of data are normally gathered while completing a market study: general, specific, and competitive supply and demand.

General Data

General data concerns the social, economic, governmental, and environmental forces that impact property values. General data presented in this appraisal is found in the Economic Analysis and the Surrounding Area sections. We have gathered the market study data from a variety of sources and publications. The sources are noted in the analyses. General data concerning the neighborhood is also based upon observations made during our inspection of the neighborhood.

Specific Data

Data relating to the property being appraised and to comparable properties is referred to as specific data. We have relied upon documents regarding the subject improvements provided by the client. Additional data pertaining to the subject has been gathered from zoning maps, tax records, the Federal Communications Commission, and other resources maintained in our library.

Data pertaining to residential sales in the immediate area has been gathered from Northwest Multiple Listing Service (NWMLS). Confirmation of individual sales is beyond the scope of this assignment and parties involved in these transactions were not contacted.

Competitive Supply and Demand Data

A complete supply and demand analysis is not part of the scope of work and is not included as part of this report.

Inspection

Allen Safer, MAI, MRICS and Robert A. Hartner conducted an on-site inspection of the subject on June 17, 2016.

Economic Analysis

Area Analysis

The subject property is located in Bellevue, which is a part of the Seattle-Tacoma-Bellevue Metropolitan Statistical Area (MSA).

Seattle-Tacoma-Bellevue MSA Analysis

The Seattle-Tacoma-Bellevue Metropolitan Statistical Area (hereafter called the Seattle MSA) lies in the northwest corner of the continental United States on Puget Sound, a saltwater arm of the Pacific Ocean 110 miles to the west. Situated in western Washington, the Seattle MSA is the 15th most populous metropolitan area in the nation and is the largest concentration of population north of San Francisco and west of Chicago. The Seattle MSA, as defined by the U.S. Office of Management and Budget, comprises King, Pierce and Snohomish Counties.

Seattle is the economic and cultural capital of the northwestern United States. With a number of major corporations headquartered in or near the city, Seattle is also the leading financial center of the Pacific Northwest. Both Seattle and Tacoma possess modern ports on excellent deep-water harbors and as a result, the Seattle MSA has good transportation connections to the outside world. The growth of the Pacific Northwest helped propel Seattle to its current stature and the economic expansion of the Pacific Rim is expected to sustain the Seattle MSA's growth well into the future.

Population

The Seattle MSA has an estimated 2016 population of 3,737,408, which represents an average annual 1.4% increase over the 2010 census of 3,439,809. The Seattle MSA added an average of 49,600 residents per year over the 2010-2016 period, and its annual growth rate exceeded the State of Washington rate of 1.1%.

Population Trends

	Population			Compound Ann. % Chng	
	2010 Census	2016 Est.	2021 Est.	2010 - 2016	2016 - 2021
King County	1,931,249	2,117,076	2,268,280	1.5%	1.4%
Pierce County	795,225	846,531	894,206	1.0%	1.1%
Snohomish County	713,335	773,801	825,060	1.4%	1.3%
Seattle MSA	3,439,809	3,737,408	3,987,546	1.4%	1.3%
Washington State	6,724,540	7,185,383	7,601,010	1.1%	1.1%

Source: The Nielsen Company

Looking forward, the Seattle MSA's population is projected to increase at a 1.3% annual rate from 2016-2021, equivalent to the addition of an average of 50,028 residents per year. The Seattle MSA's growth rate is expected to exceed that of Washington, which is projected to be 1.1%.

Employment

The Puget Sound region is the economic heartland of Washington State and the Pacific Northwest. Seattle dominates this region, which contains two-thirds of the state's total employment. Historically, the aerospace, forest products, and shipping industries, along with the military, have formed the economic base of the Puget Sound region, and these activities still play an important role in the regional economy. However, emerging industries such software, retail, biotechnology, tourism, internet services, and telecommunications have become increasingly influential on the region's economy.

Total employment in the Seattle MSA is currently estimated at 1,922,200 jobs. Between year-end 2005 and the present, employment rose by 227,000 jobs, equivalent to a 13.4% increase over the entire period. There were gains in employment in eight out of the past ten years despite the national economic downturn and slow recovery. The Seattle MSA's rate of employment growth over the last decade surpassed that of Washington, which experienced an increase in employment of 11.4% or 327,500 jobs over this period.

Employment Trends

	Total Employment (Year End)				Unemployment Rate (Ann. Avg.)	
Year	Seattle MSA	% Change	Washington	% Change	Seattle MSA	Washington
2005	1,695,200		2,870,700		4.8%	5.6%
2006	1,740,000	2.6%	2,937,800	2.3%	4.2%	5.0%
2007	1,790,800	2.9%	3,009,800	2.5%	3.7%	4.7%
2008	1,759,600	-1.7%	2,960,300	-1.6%	4.5%	5.4%
2009	1,669,600	-5.1%	2,832,400	-4.3%	8.7%	9.1%
2010	1,687,500	1.1%	2,859,100	0.9%	9.7%	10.0%
2011	1,718,900	1.9%	2,894,900	1.3%	8.7%	9.3%
2012	1,764,000	2.6%	2,955,200	2.1%	7.2%	8.1%
2013	1,816,800	3.0%	3,028,400	2.5%	5.8%	7.0%
2014	1,872,000	3.0%	3,117,900	3.0%	5.3%	6.1%
2015	1,922,200	2.7%	3,198,200	2.6%	4.6%	5.7%
Overall Change 2005-2015	227,000	13.4%	327,500	11.4%		
Avg Unemp. Rate 2005-2015					6.1%	6.9%
Unemployment Rate - April 2016					5.1%	5.6%

Source: Bureau of Labor Statistics and Economy.com. Employment figures are from the Current Employment Survey (CES). Unemployment rates are from the Current Population Survey (CPS). The figures are not seasonally adjusted.

Major employers in the Seattle MSA are shown in the following table.

Major Employers - Seattle MSA

	Name	Number of Employees
1	Boeing	77,497
2	Joint Base Lewis-McChord	56,000
3	Microsoft Corporation	43,618
4	Navy Region Northwest	43,000
5	University of Washington	30,200
6	Amazon.com	24,700
7	Providence Health & Services	19,456
8	Wal-Mart Stores	19,350
9	Fred Meyer Stores	15,450
10	King County Government	13,400

Source: seattle.about.com; boeing.com; microsoft.com

Gross Domestic Product

The Seattle MSA is the eleventh largest metropolitan area economy in the nation based on Gross Domestic Product (GDP).

Economic growth, as measured by annual changes in GDP, has been somewhat higher in the Seattle MSA than Washington overall during the past eight years. The Seattle MSA has grown at a 1.9% average annual rate while Washington has grown at a 1.2% rate. As the national economy improves, the Seattle MSA continues to perform better than Washington. GDP for the Seattle MSA rose by 3.4% in 2014 while Washington's GDP rose by 3.1%.

The Seattle MSA has a per capita GDP of $75,874, which is 39% greater than Washington's GDP of $54,710. This means that Seattle MSA industries and employers are adding relatively more value to the economy than their counterparts in Washington.

Gross Domestic Product

Year	($ Mil) Seattle MSA	% Change	($ Mil) Washington	% Change
2007	244,186		354,959	
2008	248,287	1.7%	359,219	1.2%
2009	240,144	-3.3%	350,880	-2.3%
2010	247,187	2.9%	357,826	2.0%
2011	252,854	2.3%	360,618	0.8%
2012	262,604	3.9%	370,454	2.7%
2013	269,434	2.6%	374,731	1.2%
2014	278,570	3.4%	386,335	3.1%
Compound % Chg (2007-2014)		1.9%		1.2%
GDP Per Capita 2014	$75,874		$54,710	

Source: Bureau of Economic Analysis and Economy.com; data released September 2015. The release of state and local GDP data has a longer lag time than national data. The data represents inflation-adjusted "real" GDP stated in 2009 dollars.

Income, Education and Age

The Seattle MSA has a higher level of household income than Washington. Median household income for the Seattle MSA is $71,126, which is 14.2% greater than the corresponding figure for Washington.

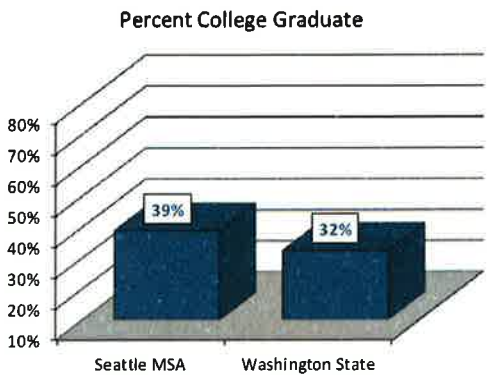
Median Household Income - 2016

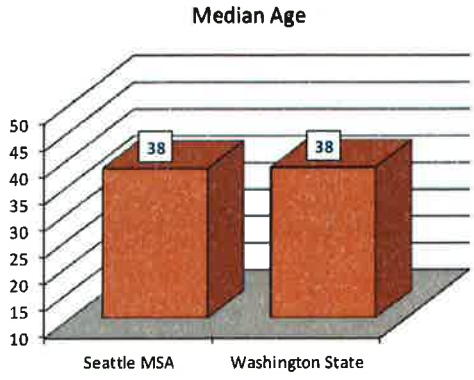
	Median
Seattle MSA	$71,126
Washington State	$62,284
Comparison of Seattle MSA to Washington State	+ 14.2%

Source: The Nielsen Company

Residents of the Seattle MSA have a higher level of educational attainment than those of Washington. An estimated 39% of Seattle MSA residents are college graduates with four-year degrees, versus 32% of Washington residents. People in the Seattle MSA are similar in age to their Washington counterparts. The median age of both the Seattle MSA and Washington is 38 years.

Education & Age - 2016





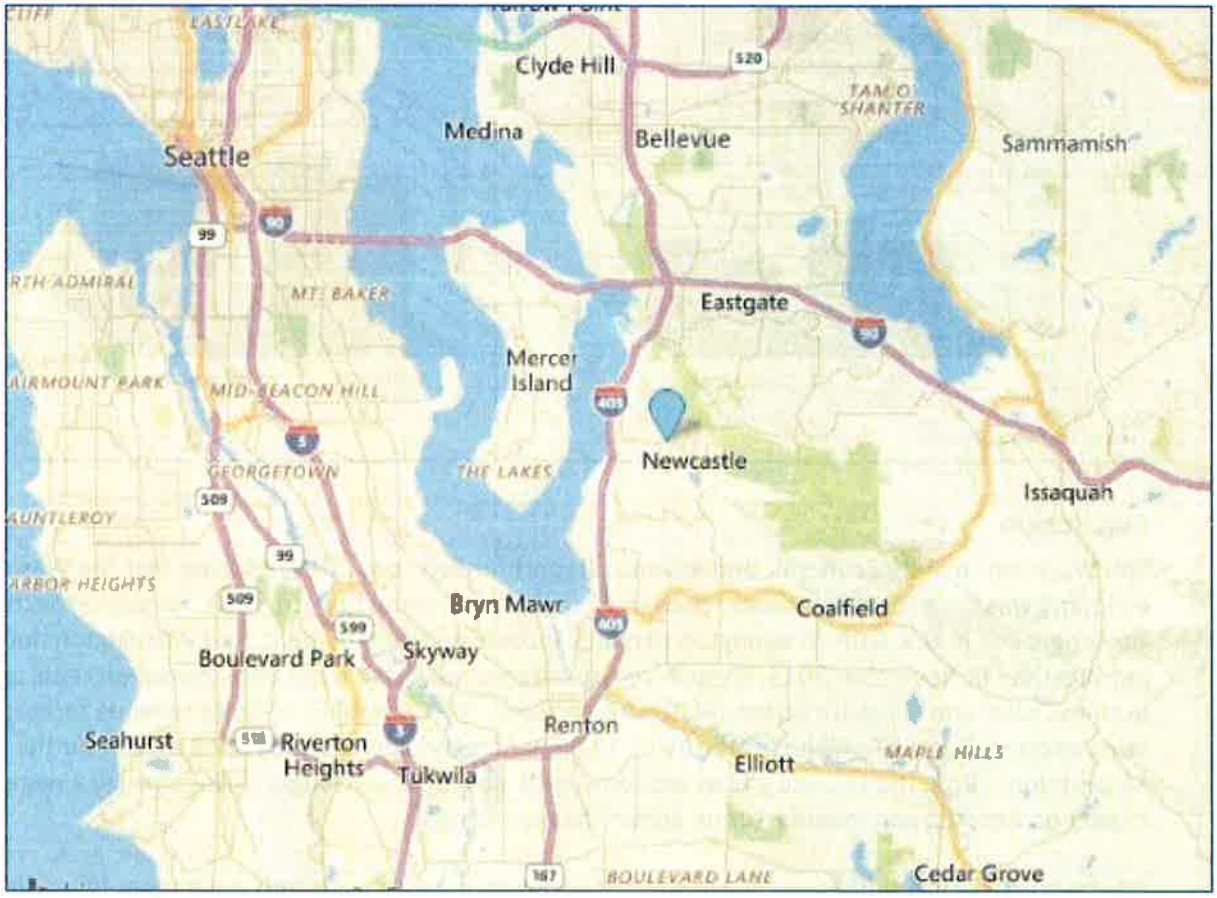
Source: The Nielsen Company

Conclusion

The Washington State Economic and Revenue Report for February 2016 reported that the Washington economy was expanding at a slower pace than expected. Overall the economic forecast expects slower growth in U.S. GDP, Washington personal income and employment, and Washington housing permits than in November 2015. These forecast changes may have a negative impact on retail and business sales and on construction-related tax receipts. The General Fund-State revenue forecast has been decreased by $67 million for the 2015-17 biennium and decreased by $442 million for the 2017-19 biennium. Both the U.S and global economy have slowed, the stronger dollar has had a negative impact on exports, and manufacturing activity has weakened.

On the positive side, hourly wages are starting to increase, housing permits have room for additional growth, and lower oil and gasoline prices are a positive for consumers. The Seattle MSA is expected to continue outperforming the U.S. economy in both employment and personal income growth.

Area Map


Clyde Hill
Medina
Bellevue
Sammamish
Seattle
Eastgate
Mercer Island
Newcastle
Issaquah
Bryn Mawr
Coalfield
Boulevard Park
Skyway
Renton
Seahurst
Riverton Heights
Tukwila
Elliott
Cedar Grove
MT. BAKER
MID-BEACON HILL
GEORGETOWN
THE LAKES
BOULEVARD LANE
MAPLE HILLS

Property Analysis

Underlying Land Description

Underlying Land Description	
Assessor's Parcel Number (APN)	195182-0080
Land Area	1.61 acres; 70,131 SF
Source of Land Area	King County Office of the Assessor
Primary Street Frontage	SE 69th Way
Shape	Irregular
Topography	Generally level and at street grade
Drainage	No problems reported or observed
Environmental Hazards	None reported or observed
Ground Stability	No problems reported or observed
Flood Area Panel Number	53033C0666F
Date	May 16, 1995
Zone	X
Description	Outside of 500-year floodplain
Insurance Required?	No
Zoning; Other Regulations	
Zoning Jurisdiction	King County
Zoning Designation	R-5
Description	Single-Family Residential
Legally Conforming?	Yes
Zoning Change Likely?	No
Permitted Uses	Encourages residential development of low- to moderate-density.
Other Land Use Regulations	None
Utilities	
Service	Provider
Water	City of Bellevue
Sewer	City of Bellevue
Electricity	Puget Sound Energy
Natural Gas	Puget Sound Energy
Local Phone	CenturyLink

Subject Improvements Description

The subject of this market study is a proposed 170' monopole telecommunications tower known as Bellevue Station 9. The tower and base equipment would be located in the northwest portion of the Bellevue Fire Station at 12412 SE 69th Way.

The underlying parcel is improved with a municipal fire station and associated site improvements. There is already a significant amount of utility infrastructure in the area. A corridor of high-tension

overhead powerlines is already located just west of the proposed tower, and existing cellular dishes are mounted on a tower adjacent to the fire station building (see photos on the following page).

View of fire station on subject property facing NE.
(Photo Taken on June 17, 2016)

View of fire station on subject property facing SE.
(Photo Taken on June 17, 2016)

View of proposed location of new tower in rear of site.
(Photo Taken on June 17, 2016)

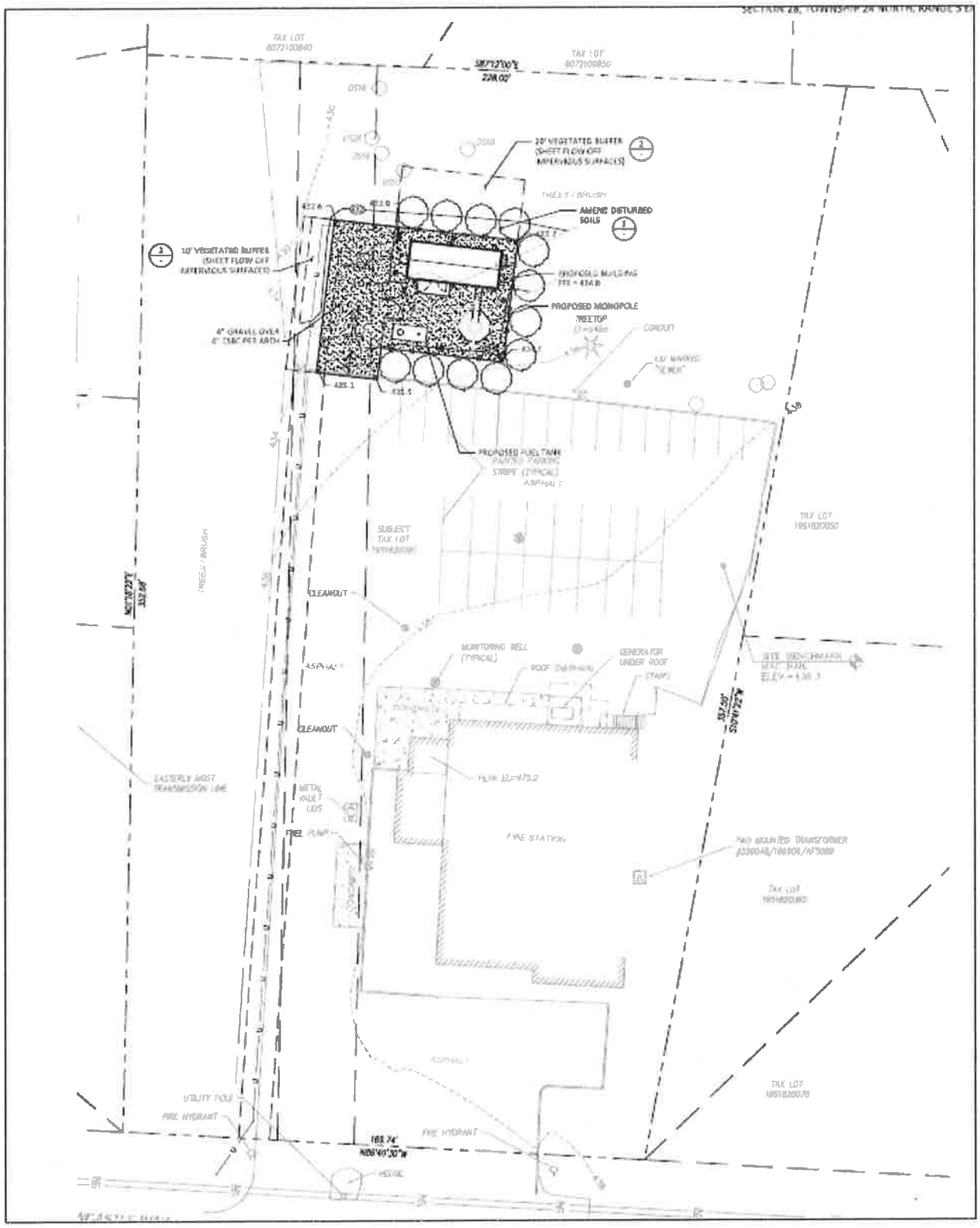
View of existing transmission tower adjacent to site.
(Photo Taken on June 17, 2016)

View of proposed location of tower from north.
(Photo Taken on June 17, 2016)

View of adjacent powerlines from north.
(Photo Taken on June 17, 2016)

Proposed Telecommunications Tower

The telecommunications tower will be constructed in the northwest corner of the parcel. The proposed location is mostly wooded and lies just north of the rear of the fire station's parking lot.


TAX LOT
TAX LOT
20' VEGETATED BUFFER
AMENE DISTURBED SOILS
10' VEGETATED BUFFER
PROPOSED MONOPOLE
CONDUIT
PROPOSED FUEL TANK
SUBJECT TAX LOT
CLEANOUT
MONITORING WELL (TYPICAL)
GENERATOR UNDER ROOF
CLEANOUT
EASTERLY MOST TRANSMISSION LINE
METAL VAULT LIDS
FUEL PUMP
FIRE STATION
PAD MOUNTED TRANSFORMER
UTILITY POLE
FIRE HYDRANT
FIRE HYDRANT
ASPHALT

Residential Market Study

Methodology

The purpose of the market study is to determine the impact, if any, on residential property values as a result of the presence of the proposed subject telecommunications tower.

In order to make this determination, we analyzed single-family home sales near four existing telecommunications towers in King County. Two of the towers studied are PSERN towers similar to the one proposed at the subject property. In order to determine whether properties immediately adjacent to the proposed tower will be impacted, we also studied two local cell towers. These towers were chosen since multiple properties, immediately adjacent to each, have transacted since the time they were constructed.

During our research, we exclude all non-arm's length transactions such as partial transfers, foreclosures, trustee sales and tax sales. We utilize a paired data analysis of individual home sales. Paired data analysis is defined by *The Dictionary of Real Estate Appraisal, 6th Edition* as:

> *A quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties. To apply this technique, sales or rental data on nearly identical properties, or adjusted data, is compared to isolate and estimate a single characteristic's effect on value or rent.*

PSERN Tower Analysis

In our analysis, we compare sales of single-family homes within 0.25-miles of two PSERN towers to otherwise similar homes within a 0.5-1.0 mile radius that fall outside the towers' spheres of influence. Our analysis does not extend to properties further than one mile from the towers since doing so would increase the chance price differences would result due to location. Sales of homes within the towers' spheres of influence without suitably similar pairings have been excluded from our analysis.

PSERN Northeast

PSERN Northeast is a Monopole Telecommunications Tower located at 8526 Roosevelt Way NE, Seattle, King County, WA. The tower is 170' in height, and underlying the equipment is situated in the northeast corner of Maple Leaf Reservoir Park, a roughly 25-acre parcel of land in an urban residential-type area.

The tower is located directly on Roosevelt Way NE, a mixed-use street featuring commercial and residential uses. The areas abutting Roosevelt Way NE are predominantly residential in nature and are characterized with small residential lots. We have compared sale prices of single-family homes within the tower's sphere of influence (within ¼ mile) to those located within 0.5 and 1.0 miles from the tower. We have considered every single-family sale that has occurred within 0.25 miles of the tower since the beginning of 2013. Excluded are non-arm's-length sales, bank-owned foreclosure sales (REO) and short-sales, and those sales for which we were not able to find a suitable paired-sale. Among other qualifications for consideration, we limit the paired-sale sets to properties featuring 150 square

feet of building area, or less, to each other. The per-unit prices of properties with greater differences in size run an increased risk of being skewed due building size differences.

Our paired data analysis illustrating the increase/decrease in price for homes located within the towers' sphere of influence is presented in the following table.

Paired Data Analysis

Address	Distance From	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Differenc
111 NE 92nd Street, Seattle	0.6 mile NW	1,120	0.14	1947	8/16/2013	$338,000	$302	
1021 NE 91st Street, Seattle	0.2 mile N	1,290	0.15	1942	12/9/2013	$355,000	$275	-8.8%
2228 NE 83rd Street, Seattle	0.7 mile E	1,040	0.16	1942	7/2/2014	$425,000	$409	
536 NE 86th Street, Seattle	0.2 mile W	930	0.15	1940	7/14/2014	$395,000	$425	3.9%
1723 NE 92nd Street, Seattle	0.50 mile NE	1,100	0.15	1925	6/1/2015	$414,900	$377	
849 NE 89th Street, Seattle	0.1 mile NW	1,000	0.15	1912	9/29/2014	$407,000	$407	7.9%
2318 NE 94th Street, Seattle	0.8 mile NE	1,460	0.16	1946	5/13/2013	$411,500	$282	
1019 NE 91st Street, Seattle	0.2 mile N	1,430	0.15	1942	7/30/2013	$417,500	$292	3.6%
2056 NE 98th Street, Seattle	0.9 mile NE	2,280	0.37	1922	9/3/2014	$452,000	$198	
8607 15th Avenue NE, Seattle	0.2 mile E	2,230	0.16	1926	4/17/2013	$470,000	$211	6.3%
8020 Corliss Ave N, Seattle	0.7 mile SW	1,800	0.13	1948	10/16/2013	$489,000	$272	
8924 8th Avenue NE, Seattle	0.2 mile NW	1,790	0.12	1939	7/11/2013	$484,555	$271	-0.4%
1717 N 82nd Street, Seattle	0.9 mile W	1,900	0.09	1941	12/8/2014	$482,000	$254	
8829 8th Avenue NE, Seattle	0.2 mile NW	2,050	0.12	1938	5/11/2015	$495,000	$241	-4.8%
8210 20th Avenue NE, Seattle	0.5 mile E	1,640	0.15	1942	5/21/2015	$510,000	$311	
822 NE 90th Street, Seattle	0.2 mile N	1,660	0.15	1945	12/1/2014	$525,000	$316	1.7%
8011 20th Avenue NE, Seattle	0.6 mile SE	2,091	0.07	1930	5/19/2014	$530,000	$253	
8612 8th Avenue NE, Seattle	0.1 mile W	2,100	0.11	1930	7/14/2014	$548,800	$261	3.1%
802 NE 103rd Street, Seattle	0.8 mile NE	2,230	0.12	2005	12/20/2013	$561,000	$252	
525 NE 83rd Street, Seattle	0.2 mile SW	2,080	0.07	1992	8/22/2013	$555,000	$267	6.1%
8223 2nd Avenue NE, Seattle	0.5 mile SW	1,660	0.07	1946	5/10/2016	$600,000	$361	
823 NE 89th Street, Seattle	0.2 mile NW	1,670	0.13	1953	5/13/2016	$585,000	$350	-3.1%
8625 Ravenna Avenue, NE, Seattle	0.7 mile E	1,850	0.12	1920	11/25/2015	$645,000	$349	
826 NE 84th Street, Seattle	0.1 mile SW	1,800	0.11	1925	7/15/2015	$627,500	$349	0.0%
8809 25th Place NE, Seattle	0.8 mile E	2,580	0.14	1960	8/6/2015	$652,000	$253	
8305 8th Avenue NE, Seattle	0.2 mile SW	2,708	0.14	1950	2/27/2014	$657,500	$243	-3.9%
8014 20th Avenue NE, Seattle	0.6 mile SE	2,160	0.10	1936	9/24/2015	$644,500	$298	
815 NE 82nd Street, Seattle	0.2 mile SW	2,270	0.10	1946	4/10/2015	$645,000	$284	-4.8%
8106 21st Avenue NE, Seattle	0.6 mile SE	2,350	0.08	1930	8/24/2015	$661,000	$281	
826 NE 81st Street, Seattle	0.2 mile SW	2,440	0.11	1927	6/12/2015	$678,000	$278	-1.2%

Minimum	-8.8%
Maximum	7.9%
Average	0.4%
Median	0.0%

There is no consistent pattern of negative value impact for the sales located within the subject's sphere of influence. The paired sales indicate a price difference ranging from -8.8% to 7.9% with an average price difference of 0.4% and a median of 0.0%. Seven pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining eight pairings do not indicate any decrease in value for one sale, and a price trend increase for the other seven sales located within the subject's sphere of influence.

PSERN Northeast

PSERN Northeast is a Monopole Telecommunications Tower located at 6900 36th Avenue SW, Seattle, King County, WA. The tower is 140' in height, and the tower and underlying equipment are situated on a 5.67-acre parcel of land in a suburban-type area.

The tower's immediate area is characterized by smaller urban residential lots. We have compared sale prices of single-family homes within the tower's sphere of influence (within 0.25 mile) to those located within 0.5 and 1.0 miles from the tower. We have considered every single-family sale that has occurred within 0.25 miles of the tower since the beginning of 2013. Excluded are non-arm's-length sales, REO and short-sales, and those sales for which we were not able to find a suitable paired-sale.

Our paired data analysis illustrating the increase/decrease in price for homes located within the towers' sphere of influence is presented in the following table.

Paired Data Analysis

Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Difference
4216 SW Raymond St., Seattle	0.7 mile NW	1,594	0.04	1926	10/10/2014	$390,000	$245	
7157 32nd Ave. SW, Seattle	0.2 mile SE	1,620	0.12	1925	8/18/2014	$392,000	$242	-1.1%
5980 26th Avenue SW, Seattle	0.8 mile NE	1,710	0.26	1922	9/2/2015	$410,000	$240	
7132 34th Avenue SW, Seattle	0.2 mile SE	1,790	0.12	1924	7/15/2015	$400,000	$223	-6.8%
3519 SW Elmgrove St., Seattle	.7 mile S	1,300	0.12	1951	6/23/2015	$410,000	$315	
7149 35th Avenue SW, Seattle	0.2 mile S	1,250	0.13	1948	8/17/2015	$413,000	$330	4.8%
5652 Fauntleroy Way SW, Seattle	0.7 mile NW	800	0.11	1914	9/9/2015	$415,000	$519	
7142 32nd Avenue SW, Seattle	0.2 mile SE	800	0.12	1927	7/20/2015	$426,000	$533	2.7%
8438 41st Avenue SW, Seattle	0.9 mile SW	1,550	0.10	1953	11/17/2014	$415,000	$268	
6534 36th Avenue SW, Seattle	0.2 mile N	1,650	0.14	1942	7/14/2014	$430,000	$261	-2.7%
6627 Fauntleroy Way SW, Seattle	0.6 mile NW	2,100	0.18	1940	3/11/2015	$425,000	$202	
7146 35th Avenue SW, Seattle	0.2 mile SE	2,040	0.11	1927	7/30/2015	$433,000	$212	4.9%
3920 Portland Street, Seattle	0.6 mile SW	1,800	0.12	1941	12/20/2013	$365,000	$203	
6926 37th Avenue SW, Seattle	0.0 mile SW	1,800	0.15	1942	2/28/2014	$355,000	$197	-2.7%
4016 SW Thistle Street, Seattle	0.8 mile SW	1,890	0.15	1932	4/29/2014	$438,000	$232	
6929 37th Avenue SW, Seattle	0.1 mile SW	1,860	0.13	1920	8/13/2014	$435,000	$234	0.9%
7170 27th Avenue SW, Seattle	0.5 mile E	1,663	0.03	2014	10/16/2015	$379,900	$228	
3408 SW Holly Street, Seattle	0.2 mile NE	1,580	0.03	2010	11/25/2015	$370,000	$234	2.5%
7166 Shinkle Place SW, Seattle	0.6 mile E	1,663	0.03	2014	8/1/2015	$374,900	$225	
6559 34th Avenue SW, Seattle	0.2 mile NE	1,520	0.03	2010	5/16/2015	$380,000	$250	10.9%
6005 48th Avenue SW, Seattle	0.9 mile NW	1,640	0.11	1925	8/4/2014	$363,000	$221	
7326 36th Avenue SW, Seattle	0.2 mile S	1,620	0.21	1918	5/29/2014	$342,400	$211	-4.5%
6022 21st Avenue SW, Seattle	1.0 mile NE	1,390	0.16	1928	12/19/2014	$315,000	$227	
7114 32nd Avenue SW, Seattle	0.2 mile E	1,460	0.12	1927	8/11/2014	$316,000	$216	-4.5%
6034 38th Avenue SW, Seattle	0.5 mile S	1,580	0.15	1914	3/11/2016	$417,000	$264	
6727 37th Avenue SW, Seattle	0.1 mile S	1,540	0.15	1927	3/22/2016	$405,000	$263	-0.4%

Minimum	-6.8%
Maximum	10.9%
Average	0.3%
Median	-0.4%

There is no consistent pattern of negative value impact for the sales located within the subject's sphere of influence. The paired sales indicate a price difference ranging from -6.8% to 10.9% with an

average price difference of 0.3% and a median of -0.4%. Seven pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining six pairings do not indicate any decrease in value for the sales located within the subject's sphere of influence.

Close-Proximity Tower Analysis

We also completed an analysis on properties adjacent to, or in very close proximity, telecommunication/cellular towers.

In order to make this determination, we analyzed single-family home sales in close proximity to two existing telecommunications towers in King County. During our research, we exclude all non-arm's length transactions such as partial transfers, foreclosures, trustee sales and tax sales. We utilize a paired data analysis of individual home sales. Paired data analysis is defined by *The Dictionary of Real Estate Appraisal, 6th Edition* as:

> *A quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties. To apply this technique, sales or rental data on nearly identical properties, or adjusted data, is compared to isolate and estimate a single characteristic's effect on value or rent.*

In our analysis, we compare sales of single-family homes within 200 feet of two telecommunication towers to otherwise similar homes within a 1.0 mile radius. Due to limited available data, we included paired-sales located within 0.5 miles but further than 0.25 miles from the towers. Our analysis does not extend to properties further than one mile from the towers since doing so would increase the chance price differences might result due to location. Sales of homes within the towers' spheres of influence, without suitably similar pairings, have been excluded from our analysis. The towers analyzed also represent lattice-type towers as opposed to mono-pole towers. Lattice-type towers are generally considered more visually disruptive than mono-pole towers.

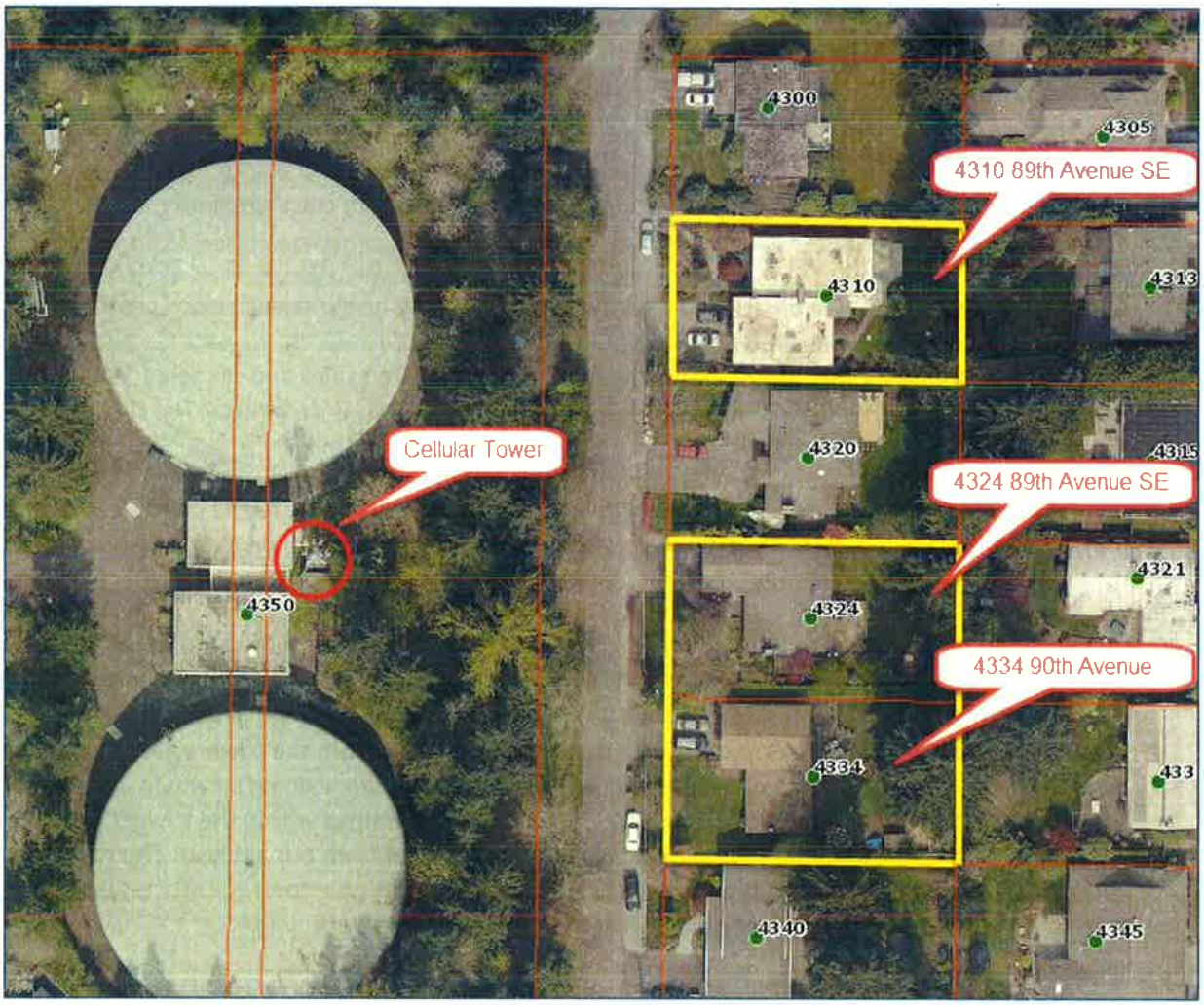
T-Mobile Tower Comparable

This T-Mobile Tower is a Lattice-Type Telecommunications Tower located at 4350 88th Avenue SE, Mercer Island, King County, WA. The tower, which is 120' in height, is situated in the east portion of Rotary Park, a roughly 3.55-acre parcel of land in a suburban residential-type area.

The tower is adjacent to 89th Avenue SE, a street with primarily residential uses. The residential lots abutting 89th Avenue SE are typically medium in size. We have compared sale prices of single-family homes within 200 feet of the tower to those located within 0.25 and 1.0 miles from the tower.

Among other qualifications for consideration, we limit the paired-sale sets to properties which have 150 square feet (or less) to each other to control for variable prices per square foot due to significant size differences. The per-unit prices of properties with greater differences in size run an increased risk of being skewed. We also focused on properties featuring similar building styles. In order to collect an adequate amount of data for analysis, we have utilized multiple pairings of each sale if possible.

We located three such sales. The three sales located all involve properties located directly across the street from the tower analyzed. The properties and tower are shown in the following aerial photo.



Our paired data analysis illustrating the increase/decrease in price for homes located within 200 feet of the tower is presented in the following table.

Paired Data Analysis

Pairs	Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Differenc
1A	4515 Ferncroft Road, Mercer Island	0.4 mile SE	3,040	0.74	1974	4/4/2016	$1,165,000	$383	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	6.3%
1B	8420 SE 47th Street, Mercer Island	0.45 mile SW	3,210	0.25	1963	1/8/2016	$1,300,000	$405	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	0.6%
1C	4645 88th Avenue SE, Mercer Island	0.4 mile S	3,050	0.23	1966	7/17/2016	$1,303,475	$427	
	4310 89th Avenue SE, Mercer Island	180 ft NE	3,130	0.23	1966	4/28/2016	$1,274,950	$407	-4.7%
2A	3820 80th Avenue SE, Mercer Island	0.75 mile NW	3,070	0.27	1972	5/29/2002	$534,000	$174	
	4324 89th Avenue SE, Mercer Island	155 ft E	3,150	0.23	1963	6/21/2002	$549,000	$174	0.2%
2B	4859 86th Avenue SE, Mercer Island	0.70 mile SW	3,090	0.36	1963	4/5/2003	$555,000	$180	
	4324 89th Avenue SE, Mercer Island	155 ft. E	3,150	0.23	1963	6/21/2002	$549,000	$174	-3.0%
3	4215 Island Crest Way, Mercer	0.35 mile NW	2,200	0.32	1955	1/7/2013	$595,000	$270	
	4334 89th Avenue SE, Mercer Island	170 ft. E	2,190	0.23	1962	5/23/2013	$616,000	$281	4.0%

Minimum	-4.7%
Maximum	6.3%
Average	0.6%
Median	0.4%

There is no consistent pattern of negative value impact for the sales located within 200 feet of the tower. The paired sales indicate a price difference ranging from -4.7% to 6.3% with an average price difference of 0.6% and a median of 0.4%. Two pairings indicated a decrease in value for the sales located within the subject's sphere of influence. The remaining four pairings indicate a price trend increase for the sales located within 200 feet of the cell tower in the subject's sphere of influence.

Comcast Tower Comparable

This Comcast Tower is a Lattice-Type Telecommunications Tower located at 8914 Roosevelt Way, Seattle, King County, WA. The tower is 200' in height, and the tower and underlying equipment are situated on a 0.49-acre parcel of land in an urban-type area.

The tower's immediate area is characterized by smaller urban residential lots and commercial parcels along the arterial. We have compared sale prices of single-family homes within 200 feet of the tower to those located within 0.25 and 1.0 miles from the tower.

We located such sales, shown in the following aerial photo.

Our paired data analysis of multiple sales matched to the above sales, illustrating the increase/decrease in price for homes located in close proximity to the tower, is presented in the following table.

Paired Data Analysis

Pair	Address	Distance From Subject	Home Size (SF)	Lot Size (Ac)	Year Built	Sale Date	Sale Price	Price/SF	$/SF Difference
1A	1017 NE 91st Street, Seattle	0.1 mile N	2,200	0.15	1941	8/19/2005	$425,000	$193	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	1.9%
1B	1018 NE 96th Street, Seattle	0.35 mile N	2,022	0.12	1942	9/29/2005	$375,000	$185	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	6.1%
1C	815 NE 96th Street, Seattle	0.35 mile NW	2,280	0.16	1946	4/22/2005	$413,000	$181	
	1020 NE 89th Street, Seattle	100 feet E	2,160	0.14	1928	10/11/2005	$425,000	$197	8.6%
2	8024 11th Avenue NE, Seattle	0.4 mile S	2,660	0.17	1908	12/29/2008	$561,500	$211	
	1019 NE 90th Street, Seattle	100 feet E	2,500	0.15	1930	6/14/2008	$540,000	$216	2.3%
3A	8024 11th Avenue NE, Seattle	0.4 mile S	2,660	0.17	1908	12/29/2008	$561,500	$211	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	10.7%
3B	839 NE 97th Street, Seattle	0.4 mile N	2,430	0.15	1927	8/14/2015	$565,000	$233	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	0.5%
3C	1007 103rd Street, Seattle	0.65 mile N	2,540	0.10	1940	11/20/2015	$605,000	$238	
	1010 NE 89th Street, Seattle	55 feet E	2,568	0.15	1915	10/28/2015	$600,000	$234	-1.9%

Minimum	-1.9%
Maximum	10.7%
Average	4.0%
Median	2.3%

There is no consistent pattern of negative value impact for the sales located within the cell tower's sphere of influence. The paired sales indicate a price difference ranging from -1.9% to 10.7% with an average price difference of 4.0% and a median of 2.3%. One pairing indicated a decrease in value for the sale located in close proximity to the tower. The remaining five pairings do not indicate any decrease in value for the sales located within close proximity to the tower.

Literature Review

We also reviewed existing literature to determine whether other studies have shown a link between cellular towers/utility infrastructure and diminished residential property values.

Our review revealed that a limited number of studies have been completed analyzing the impact of cellular towers on residential property values in the United States., much less in the Pacific Northwest. Of particular interest however, is a study completed by J.R. Cowger, Steven C. Bottmiller, MAI and James Cahill, the results of which were published in the September/October 1996 issue of *Right of Way Magazine*. This study analyzed residential home prices in two different Oregon Counties (Washington & Clackamas) and two different Washington Counties (Clark & King,) that were in proximity to BPA high-voltage transmission lines varying in voltage from 115 kV to 500 kV. The analysis was completed incorporating a paired-sales analysis.

The analysis concluded that "overhead transmission lines had minimal impacts on residential property values in these metropolitan areas". This is relevant to the subject property and the proposed monopole tower since market participants typically consider transmission lines to be more disruptive than monopole cellular towers.

Market Study Conclusion

Based on the preceding valuation analysis and subject to the definitions, assumptions, and limiting conditions expressed in the report, it is our conclusion that there will not be a discernable negative impact on single-family home values resulting from the presence of the proposed subject telecommunication tower.

Furthermore, there is already significant existing electric utility infrastructure located in the area of the proposed tower, including a corridor of high-tension power lines and associated towers (with a cellular dish). The presence of the adjacent high-tension electric transmission lines and existing cellular dish mounted on the transmission tower adjacent to the firehouse, is a pre-existing condition already impacting the immediate neighborhood.

This market study is not based on any extraordinary assumptions or hypothetical conditions that may impact the assignment results.

Certification

We certify that, to the best of our knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
3. We have no present or prospective interest in the property that is the subject of this report and no personal interest with respect to the parties involved.
4. We have not performed any services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
5. We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
6. Our engagement in this assignment was not contingent upon developing or reporting predetermined results.
7. Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
8. Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice as well as applicable state appraisal regulations.
9. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute.
10. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
11. Allen Safer, MAI, MRICS and Robert A. Hartner made a personal inspection of the property that is the subject of this report.
12. No one provided significant real property appraisal assistance to the persons signing this certification.
13. We have experience in appraising properties similar to the subject and are in compliance with the Competency Rule of USPAP.
14. As of the date of this report, Allen Safer, MAI, MRICS has completed the continuing education program for Designated Members of the Appraisal Institute.

15. As of the date of this report, Robert A. Hartner has completed the Standards and Ethics Education Requirements for Candidates of the Appraisal Institute.

Allen Safer, MAI, MRICS
Certified General Real Estate Appraiser
Washington Certificate # 1100662

Robert A. Hartner
Certified General Real Estate Appraiser
Washington Certificate # 1102293

Assumptions and Limiting Conditions

This appraisal and any other work product related to this engagement are limited by the following standard assumptions, except as otherwise noted in the report:

1. The title is marketable and free and clear of all liens, encumbrances, encroachments, easements and restrictions. The property is under responsible ownership and competent management and is available for its highest and best use.
2. There are no existing judgments or pending or threatened litigation that could affect the value of the property.
3. There are no hidden or undisclosed conditions of the land or of the improvements that would render the property more or less valuable. Furthermore, there is no asbestos in the property.
4. The revenue stamps placed on any deed referenced herein to indicate the sale price are in correct relation to the actual dollar amount of the transaction.
5. The property is in compliance with all applicable building, environmental, zoning, and other federal, state and local laws, regulations and codes.
6. The information furnished by others is believed to be reliable, but no warranty is given for its accuracy.

This appraisal and any other work product related to this engagement are subject to the following limiting conditions, except as otherwise noted in the report:

1. An appraisal is inherently subjective and represents our opinion as to the value of the property appraised.
2. The conclusions stated in our appraisal apply only as of the effective date of the appraisal, and no representation is made as to the effect of subsequent events.
3. No changes in any federal, state or local laws, regulations or codes (including, without limitation, the Internal Revenue Code) are anticipated.
4. No environmental impact studies were either requested or made in conjunction with this appraisal, and we reserve the right to revise or rescind any of the value opinions based upon any subsequent environmental impact studies. If any environmental impact statement is required by law, the appraisal assumes that such statement will be favorable and will be approved by the appropriate regulatory bodies.
5. Unless otherwise agreed to in writing, we are not required to give testimony, respond to any subpoena or attend any court, governmental or other hearing with reference to the property without compensation relative to such additional employment.
6. We have made no survey of the property and assume no responsibility in connection with such matters. Any sketch or survey of the property included in this report is for illustrative purposes only and should not be considered to be scaled accurately for size. The appraisal

covers the property as described in this report, and the areas and dimensions set forth are assumed to be correct.

7. No opinion is expressed as to the value of subsurface oil, gas or mineral rights, if any, and we have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in our appraisal.

8. We accept no responsibility for considerations requiring expertise in other fields. Such considerations include, but are not limited to, legal descriptions and other legal matters such as legal title, geologic considerations such as soils and seismic stability; and civil, mechanical, electrical, structural and other engineering and environmental matters. Such considerations may also include determinations of compliance with zoning and other federal, state, and local laws, regulations and codes.

9. The distribution of the total valuation in the report between land and improvements applies only under the reported highest and best use of the property. The allocations of value for land and improvements must not be used in conjunction with any other appraisal and are invalid if so used. The appraisal report shall be considered only in its entirety. No part of the appraisal report shall be utilized separately or out of context.

10. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraisers, or any reference to the Appraisal Institute) shall be disseminated through advertising media, public relations media, news media or any other means of communication (including without limitation prospectuses, private offering memoranda and other offering material provided to prospective investors) without the prior written consent of the persons signing the report.

11. Information, estimates and opinions contained in the report and obtained from third-party sources are assumed to be reliable and have not been independently verified.

12. Any income and expense estimates contained in the appraisal report are used only for the purpose of estimating value and do not constitute predictions of future operating results.

13. If the property is subject to one or more leases, any estimate of residual value contained in the appraisal may be particularly affected by significant changes in the condition of the economy, of the real estate industry, or of the appraised property at the time these leases expire or otherwise terminate.

14. Unless otherwise stated in the report, no consideration has been given to personal property located on the premises or to the cost of moving or relocating such personal property; only the real property has been considered.

15. The current purchasing power of the dollar is the basis for the values stated in the appraisal; we have assumed that no extreme fluctuations in economic cycles will occur.

16. The values found herein is subject to these and to any other assumptions or conditions set forth in the body of this report but which may have been omitted from this list of Assumptions and Limiting Conditions.

17. The analyses contained in the report necessarily incorporate numerous estimates and assumptions regarding property performance, general and local business and economic

conditions, the absence of material changes in the competitive environment and other matters. Some estimates or assumptions, however, inevitably will not materialize, and unanticipated events and circumstances may occur; therefore, actual results achieved during the period covered by our analysis will vary from our estimates, and the variations may be material.

18. The Americans with Disabilities Act (ADA) became effective January 26, 1992. We have not made a specific survey or analysis of the property to determine whether the physical aspects of the improvements meet the ADA accessibility guidelines. We claim no expertise in ADA issues, and render no opinion regarding compliance of the subject with ADA regulations. Inasmuch as compliance matches each owner's financial ability with the cost to cure the non-conforming physical characteristics of a property, a specific study of both the owner's financial ability and the cost to cure any deficiencies would be needed for the Department of Justice to determine compliance.

19. The appraisal report is prepared for the exclusive benefit of the Client, its subsidiaries and/or affiliates. It may not be used or relied upon by any other party. All parties who use or rely upon any information in the report without our written consent do so at their own risk.

20. No studies have been provided to us indicating the presence or absence of hazardous materials on the subject property or in the improvements, and our valuation is predicated upon the assumption that the subject property is free and clear of any environment hazards including, without limitation, hazardous wastes, toxic substances and mold. No representations or warranties are made regarding the environmental condition of the subject property. Integra Realty Resources – Seattle, Integra Realty Resources, Inc., Integra Strategic Ventures, Inc. and/or any of their respective officers, owners, managers, directors, agents, subcontractors or employees (the "Integra Parties"), shall not be responsible for any such environmental conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because we are not experts in the field of environmental conditions, the appraisal report cannot be considered as an environmental assessment of the subject property.

21. The persons signing the report may have reviewed available flood maps and may have noted in the appraisal report whether the subject property is located in an identified Special Flood Hazard Area. We are not qualified to detect such areas and therefore do not guarantee such determinations. The presence of flood plain areas and/or wetlands may affect the value of the property, and the value conclusion is predicated on the assumption that wetlands are non-existent or minimal.

22. Integra Realty Resources – Seattle is not a building or environmental inspector. Integra Seattle does not guarantee that the subject property is free of defects or environmental problems. Mold may be present in the subject property and a professional inspection is recommended.

23. The appraisal report and value conclusions for an appraisal assume the satisfactory completion of construction, repairs or alterations in a workmanlike manner.

24. It is expressly acknowledged that in any action which may be brought against any of the Integra Parties, arising out of, relating to, or in any way pertaining to this engagement, the appraisal reports, and/or any other related work product, the Integra Parties shall not be

responsible or liable for any incidental or consequential damages or losses, unless the appraisal was fraudulent or prepared with intentional misconduct. It is further acknowledged that the collective liability of the Integra Parties in any such action shall not exceed the fees paid for the preparation of the appraisal report unless the appraisal was fraudulent or prepared with intentional misconduct. Finally, it is acknowledged that the fees charged herein are in reliance upon the foregoing limitations of liability.

25. Integra Realty Resources – Seattle, an independently owned and operated company, has prepared the appraisal for the specific intended use stated elsewhere in the report. The use of the appraisal report by anyone other than the Client is prohibited except as otherwise provided. Accordingly, the appraisal report is addressed to and shall be solely for the Client's use and benefit unless we provide our prior written consent. We expressly reserve the unrestricted right to withhold our consent to your disclosure of the appraisal report or any other work product related to the engagement (or any part thereof including, without limitation, conclusions of value and our identity), to any third parties. Stated again for clarification, unless our prior written consent is obtained, no third party may rely on the appraisal report (even if their reliance was foreseeable).

26. The conclusions of this report are estimates based on known current trends and reasonably foreseeable future occurrences. These estimates are based partly on property information, data obtained in public records, interviews, existing trends, buyer-seller decision criteria in the current market, and research conducted by third parties, and such data are not always completely reliable. The Integra Parties are not responsible for these and other future occurrences that could not have reasonably been foreseen on the effective date of this assignment. Furthermore, it is inevitable that some assumptions will not materialize and that unanticipated events may occur that will likely affect actual performance. While we are of the opinion that our findings are reasonable based on current market conditions, we do not represent that these estimates will actually be achieved, as they are subject to considerable risk and uncertainty. Moreover, we assume competent and effective management and marketing for the duration of the projected holding period of this property.

27. All prospective value opinions presented in this report are estimates and forecasts which are prospective in nature and are subject to considerable risk and uncertainty. In addition to the contingencies noted in the preceding paragraph, several events may occur that could substantially alter the outcome of our estimates such as, but not limited to changes in the economy, interest rates, and capitalization rates, behavior of consumers, investors and lenders, fire and other physical destruction, changes in title or conveyances of easements and deed restrictions, etc. It is assumed that conditions reasonably foreseeable at the present time are consistent or similar with the future.

Addendum A

Appraiser Qualifications

Allen Safer, MAI, MRICS

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Experience

Senior Managing Director for Integra Realty Resources-Seattle in Washington State. Integra Realty Resources Seattle is part of Integra Realty Resources (IRR), a national valuation and consulting firm with 66 offices in the U.S. and Caribbean.

Mr. Safer and his firm are experienced in the analysis of various property types including: vacant land, residential plats, master planned communities, multi family developments, retail, office, industrial and special purpose properties in Washington State and Alaska. Clients served include various financial concerns, law and public accounting firms, private and public agencies, pension and advisory companies, investment firms, and the general public. Further, utilizing the resources of Integra's nationwide coverage, the firm is actively involved in the completion of large portfolio engagements.

Mr. Safer's background includes 35+ years of consultation and valuation analysis for the general public on commercial and residential properties in Washington and Alaska. Entered the appraisal profession with Coldwell Banker Appraisal Services from 1977 to 1981. Founded Safer & Company in 1982 and transitioned to Property Counselors from 1986 to 2001.

Professional Activities & Affiliations

Appraisal Institute, Member (MAI)
President: Local Chapter of the Appraisal Institute, January 2007 - December 2007
Chairman: Seattle Chapter Real Estate Fall Conference, January 2008 - December 2010
Chairman: National Appraisal Institute Regional Chairs, January 2000 - December 2000
Chairman: National Appraisal Institute Executive Committee, January 2000 - December 2000
Chairman: Pacific NW Region 1 Board of Directors, January 1998 - December 1999
Board of Director: Appraisal Institute, January 1996 - December 2001
Member: Appraisal Institute Finance Committee, January 1996 - December 1997
Board of Director: General Appraisal Board of the Appraisal Institute, January 1994 - December 1996
Chairman: National Comprehensive Exam Subcommittee of the Appraisal Institute, Jan. 1990 -Dec.1992
Member: National Comprehensive Exam Subcommittee of the Appraisal Institute, Jan. 1983 -Dec.1992
Member: Government Relations Committee, January 2002 December 2004
Member: National Admissions Committee of the Appraisal Institute, January 1990 December 1993
Board of Director: Seattle Chapter of the Appraisal Institute, January 1989 December 1992
Member: Regional Professional Standards Panel of the Appraisal Institute, January 1984
Chairman: Local Chapter Admissions and Programs, January 1986 December 1991

Licenses

Alaska, Appraiser, 412
Washington, Appraiser, 1100662, Expires September 2015
Washington, Designated Broker, 3341, Expires December 2015

Education

Bachelor of Science, Real Estate, University of Colorado, Boulder, Colorado

Qualified Before Courts & Administrative Bodies

United States Bankruptcy Court, Seattle Washington
King County Superior Court, Washington
King County Board of Equalization
Pierce County District Court
Washington State Board of Tax Appeals
Various Arbitration & Land Use Hearings

Miscellaneous

Recipient of the Seattle AI Chapter's "Appraiser of the Year" Award for 2001.
Recipient of the Seattle AI Chapter's 2009 "President's Award".
IRR Certified Reviewer

asafer@irr.com - 206.436.1190

Robert A. Hartner

Experience

Robert Hartner is a Senior Analyst with Integra Realty Resources. He provides valuation services for office, industrial, land, multi-family, and retail properties for the purposes of eminent domain, acquisition, financing, asset management, portfolio analysis and valuation. Robert has been actively engaged in Commercial Real Estate Valuation since 2006. Prior to joining Integra Realty Resources - Seattle, he worked for Integra in Milwaukee, Wisconsin.

Robert focuses primarily on appraisal and valuation but does other real estate consulting assignments including highest and best use analysis, ground leases, estate valuations, and lease arbitration. He specializes in appraisals for eminent domain and right-of-way matters.

Professional Activities & Affiliations

Appraisal Institute, Affiliate Member

Licenses

Washington, Certified General Real Estate Appraiser, 1102293, Expires May 2016
Wisconsin, Certified General Real Estate Appraiser, 2002-10, Expires December 2015

Education

Bachelor of Arts, Finance, Production & Operations Mgmt. - University of Wisconsin - Milwaukee

Robert is working toward his MAI designation. The following courses sponsored by the Appraisal Institute have been successfully completed:

- Basic Appraisal Principles
- Basic Appraisal Procedures
- National USPAP Course
- General Appraiser Sales Comparison Approach
- General Appraiser Site Valuation and Cost Approach
- Business Practices and Ethics
- General Appraiser Report Writing and Case Studies
- General Appraiser Income Approach / Part 1
- General Appraiser Income Approach / Part 2
- Real Estate Finance Statistics and Valuation Modeling
- General Market Analysis and Highest & Best Use
- Standards and Ethics Education Requirement of the Appraisal Institute for associate members

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Integra Realty Resources, Inc.
Corporate Profile

Integra Realty Resources, Inc. offers the most comprehensive property valuation and counseling coverage in the United States with 62 independently owned and operated offices in 34 states and the Caribbean. Integra was created for the purpose of combining the intimate knowledge of well-established local firms with the powerful resources and capabilities of a national company. Integra offers integrated technology, national data and information systems, as well as standardized valuation models and report formats for ease of client review and analysis. Integra's local offices have an average of 25 years of service in the local market, and virtually all are headed by a Senior Managing Director who is an MAI member of the Appraisal Institute.

A listing of IRR's local offices and their Senior Managing Directors follows:

ATLANTA, GA - Sherry L. Watkins., MAI, FRICS
AUSTIN, TX - Randy A. Williams, MAI, SR/WA, FRICS
BALTIMORE, MD - G. Edward Kerr, MAI, MRICS
BIRMINGHAM, AL - Rusty Rich, MAI, MRICS
BOISE, ID - Bradford T. Knipe, MAI, ARA, CCIM, CRE, FRICS
BOSTON, MA - David L. Cary, Jr., MAI, MRICS
CHARLESTON, SC - Cleveland "Bud" Wright, Jr., MAI
CHARLOTTE, NC - Fitzhugh L. Stout, MAI, CRE, FRICS
CHICAGO, IL - Eric L. Enloe, MAI, FRICS
CINCINNATI, OH - Gary S. Wright, MAI, FRICS, SRA
CLEVELAND, OH - Douglas P. Sloan, MAI
COLUMBIA, SC - Michael B. Dodds, MAI, CCIM
COLUMBUS, OH - Bruce A. Daubner, MAI, FRICS
DALLAS, TX - Mark R. Lamb, MAI, CPA, FRICS
DAYTON, OH - Gary S. Wright, MAI, FRICS, SRA
DENVER, CO - Brad A. Weiman, MAI, FRICS
DETROIT, MI - Anthony Sanna, MAI, CRE, FRICS
FORT WORTH, TX - Gregory B. Cook, SR/WA
GREENSBORO, NC - Nancy Tritt, MAI, SRA, FRICS
GREENVILLE, SC - Michael B. Dodds, MAI, CCIM
HARTFORD, CT - Mark F. Bates, MAI, CRE, FRICS
HOUSTON, TX - David R. Dominy, MAI, CRE, FRICS
INDIANAPOLIS, IN - Michael C. Lady, MAI, SRA, CCIM, FRICS
JACKSON, MS - J. Walter Allen, MAI, FRICS
JACKSONVILLE, FL - Robert Crenshaw, MAI, FRICS
KANSAS CITY, MO/KS - Kenneth Jaggers, MAI, FRICS
LAS VEGAS, NV - Charles E. Jack IV, MAI
LOS ANGELES, CA - John G. Ellis, MAI, CRE, FRICS
LOS ANGELES, CA - Matthew J. Swanson, MAI
LOUISVILLE, KY - Stacey Nicholas, MAI, MRICS
MEMPHIS, TN - J. Walter Allen, MAI, FRICS
MIAMI/PALM BEACH, FL - Scott M. Powell, MAI, FRICS
MIAMI/PALM BEACH, FL- Anthony M. Graziano, MAI, CRE, FRICS
MINNEAPOLIS, MN - Michael F. Amundson, MAI, CCIM, FRICS
NAPLES, FL - Carlton J. Lloyd, MAI, FRICS
NASHVILLE, TN - R. Paul Perutelli, MAI, SRA, FRICS
NEW JERSEY COASTAL - Halvor J. Egeland, MAI
NEW JERSEY NORTHERN - Barry J. Krauser, MAI, CRE, FRICS
NEW YORK, NY - Raymond T. Cirz, MAI, CRE, FRICS
ORANGE COUNTY, CA - Larry D. Webb, MAI, FRICS
ORLANDO, FL - Christopher Starkey, MAI, MRICS
PHILADELPHIA, PA - Joseph D. Pasquarella, MAI, CRE, FRICS
PHOENIX, AZ - Walter 'Tres' Winius III, MAI, FRICS
PITTSBURGH, PA - Paul D. Griffith, MAI, CRE, FRICS
PORTLAND, OR - Brian A. Glanville, MAI, CRE, FRICS
PROVIDENCE, RI - Gerard H. McDonough, MAI, FRICS
RALEIGH, NC - Chris R. Morris, MAI, FRICS
RICHMOND, VA - Kenneth L. Brown, MAI, CCIM, FRICS
SACRAMENTO, CA - Scott Beebe, MAI, FRICS
ST. LOUIS, MO - P. Ryan McDonald, MAI, FRICS
SALT LAKE CITY, UT - Darrin W. Liddell, MAI, CCIM, FRICS
SAN ANTONIO, TX - Martyn C. Glen, MAI, CRE, FRICS
SAN DIEGO, CA - Jeff A. Greenwald, MAI, SRA, FRICS
SAN FRANCISCO, CA - Jan Kleczewski, MAI, FRICS
SARASOTA, FL - Carlton J. Lloyd, MAI, FRICS
SAVANNAH, GA - J. Carl Schultz, Jr., MAI, FRICS, CRE, SRA
SEATTLE, WA - Allen N. Safer, MAI, MRICS
SYRACUSE, NY - William J. Kimball, MAI, FRICS
TAMPA, FL - Bradford L. Johnson, MAI, MRICS
TULSA, OK - Robert E. Gray, MAI, FRICS
WASHINGTON, DC - Patrick C. Kerr, MAI, SRA, FRICS
WILMINGTON, DE - Douglas L. Nickel, MAI, FRICS
CARIBBEAN/CAYMAN ISLANDS - James Andrews, MAI, FRICS

Corporate Office
1133 Avenue of the Americas, 27th Floor, New York, New York 10036
Telephone: (212) 255-7858; Fax: (646) 424-1869; E-mail info@irr.com
Website: www.irr.com

Addendum B

Comparison of Report Formats

Comparison of Report Formats

Reporting Options in 2014-2015 Edition of USPAP	Integra Reporting Formats Effective January 1, 2014	Corresponding Reporting Options in 2012-2013 Edition of USPAP
Appraisal Report	Appraisal Report – Comprehensive Format	Self-Contained Appraisal Report
	Appraisal Report – Standard Format	Summary Appraisal Report
	Appraisal Report – Concise Summary Format	Minimum Requirements of Summary Appraisal Report
Restricted Appraisal Report	Restricted Appraisal Report	Restricted Use Appraisal Report

USPAP Reporting Options

The 2014-2015 edition of USPAP requires that all written appraisal reports be prepared under one of the following options: Appraisal Report or Restricted Appraisal Report.

An Appraisal Report summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. The requirements for an Appraisal Report are set forth in Standards Rule 2-2 (a) of USPAP.

A Restricted Appraisal Report states the appraisal methods employed and the conclusions reached but is not required to include the data and reasoning that supports the analyses, opinions, and conclusions. Because the supporting information may not be included, the use of the report is restricted to the client, and further, the appraiser must maintain a work file that contains sufficient information for the appraiser to produce an Appraisal Report if required. The requirements for a Restricted Appraisal Report are set forth in Standards Rule 2-2 (b).

Integra Reporting Formats under the Appraisal Report Option

USPAP gives appraisers the flexibility to vary the level of information in an Appraisal Report depending on the intended use and intended users of the appraisal. Accordingly, Integra Realty Resources has established internal standards for three alternative reporting formats that differ in depth and detail yet comply with the USPAP requirements for an Appraisal Report. The three Integra formats are:

- Appraisal Report – Comprehensive Format
- Appraisal Report – Standard Format
- Appraisal Report – Concise Summary Format

An Appraisal Report – Comprehensive Format has the greatest depth and detail of the three report types. It describes and explains the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. This format meets or exceeds the former Self-Contained Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

An Appraisal Report – Standard Format has a moderate level of detail. It summarizes the information analyzed, the appraisal methods employed, and the reasoning that supports the analyses, opinions, and conclusions. This format meets or exceeds the former Summary Appraisal Report requirements that were contained in the 2012-2013 edition of USPAP.

An Appraisal Report - Concise Summary Format has less depth and detail than the Appraisal Report – Standard Format. It briefly summarizes the data, reasoning, and analyses used in the appraisal process while additional supporting documentation is retained in the work file. This format meets the minimum requirements of the former Summary Appraisal Report that were contained in the 2012-2013 edition of USPAP.

On occasion, clients will request, and Integra will agree to provide, a report that is labeled a Self-Contained Appraisal Report. Other than the label, there is no difference between a Self-Contained Appraisal Report and an Appraisal Report - Comprehensive Format. Both types of reports meet or

exceed the former Self-Contained Appraisal Report requirements set forth in the 2012-2013 edition of USPAP.

Integra Reporting Format under Restricted Appraisal Report Option

Integra provides a Restricted Appraisal Report format under the USPAP Restricted Appraisal Report option. This format meets the requirements of the former Restricted Use Appraisal Report that were contained in the 2012-2013 edition of USPAP.

Addendum C

Property Information

New Search | Property Tax Bill | Map This Property | Assessor's Website | Area Report | Print Property Detail

PARCEL DATA

Parcel	195182-0080	Jurisdiction	BELLEVUE
Name	BELLEVUE FIRE DEPARTMENT	Levy Code	0516
Site Address	12412 SE 69TH WAY 98006	Property Type	C
Geo Area	75-40	Plat Block / Building Number	
Spec Area		Plat Lot / Unit Number	TR A
Property Name	FIRE DIST #25	Quarter-Section-Township-Range	NE-28-24-5

Legal Description

DEL MAR WOODS DIV 4
PLat Block:
Plat Lot: TR A

LAND DATA

Highest & Best Use As If Vacant	COMMERCIAL SERVICE	Percentage Unusable	0
Highest & Best Use As Improved	PRESENT USE	Unbuildable	NO
Present Use	Governmental Service	Restrictive Size Shape	YES
Land SqFt	70,131	Zoning	R-5
Acres	1.61	Water	WATER DISTRICT
		Sewer/Septic	PUBLIC
		Road Access	PUBLIC
		Parking	ADEQUATE
		Street Surface	PAVED

Views

Rainier	
Territorial	
Olympics	
Cascades	
Seattle Skyline	
Puget Sound	
Lake Washington	
Lake Sammamish	
Lake/River/Creek	
Other View	

Waterfront

Waterfront Location	
Waterfront Footage	0
Lot Depth Factor	0
Waterfront Bank	
Tidel/Shore	
Waterfront Restricted Access	
Waterfront Access Rights	NO
Poor Quality	NO
Proximity Influence	NO

Designations

Historic Site	
Current Use	(none)
Nbr Bldg Sites	
Adjacent to Golf Fairway	NO
Adjacent to Greenbelt	NO
Other Designation	NO
Deed Restrictions	NO
Development Rights Purchased	NO
Easements	NO
Native Growth Protection Easement	NO
DNR Lease	NO

Nuisances

Topography	
Traffic Noise	
Airport Noise	
Power Lines	NO
Other Nuisances	NO

Problems

Water Problems	NO
Transportation Concurrency	NO
Other Problems	NO

Environmental

Environmental	NO

BUILDING

Building Number	1
Building Description	FIRE STATION
Number Of Buildings Aggregated	1
Predominant Use	FIRE STATION (STAFFED) (322)
Shape	Rect or Slight Irreg
Construction Class	MASONRY
Building Quality	AVERAGE

Picture of Building 1

Stories	1
Building Gross Sq Ft	6,977
Building Net Sq Ft	6,877
Year Built	1975
Eff. Year	1991
Percentage Complete	100
Heating System	FORCED AIR UNIT
Sprinklers	No
Elevators	

Section(s) Of Building Number: 1

Section Number	Section Use	Description	Stories	Height	Floor Number	Gross Sq Ft	Net Sq Ft
1	FIRE STATION (STAFFED) (322)		1	24		6,977	6,877

TAX ROLL HISTORY

This is a government owned parcel.
Change to state law (RCW 84. 40.045 and 84.40.175) by the 2013 Legislature eliminated revaluation of government owned parcels.

SALES HISTORY

Excise Number	Recording Number	Document Date	Sale Price	Seller Name	Buyer Name	Instrument	Sale Reason
1411782	199501060570	12/30/1994	$0.00	KING CO FIRE DIST #25	CITY OF BELLEVUE	Quit Claim Deed	Other

REVIEW HISTORY

PERMIT HISTORY

HOME IMPROVEMENT EXEMPTION

New Search | Property Tax Bill | Map This Property | Glossary of Terms | Levy Report | Print Property Detail

Account/Parcel Summary

Tax Account Number	195182008001
Parcel Number	1951820080
Account Status	This account is active.
Tax Payer Name	BELLEVUE FIRE DEPARTMENT 640815
Mailing Address	766 BELLEVUE WAY SE BELLEVUE WA 98004
Payment Status	**NO TAXES ARE DUE AT THIS TIME.**
Annual Statement Requested By	
Statement Request	Request Statement to be Mailed
Select Payment Amount	
Actions	Disabled View Cart Search Again

TO PAY MULTIPLE ACCOUNTS WITH ONE PAYMENT: After clicking on the appropriate select box(es) and the "Add to Cart" button, click "Search Again" to continue locating and adding parcels/accounts.

If you would like to pay by mail, make your check payable to King County Treasury. Write your tax account number on your check and send it to:

King County Treasury
500 Fourth Avenue, Room 600
Seattle, WA 98104

Tax Year Details Receipts 2016 Tax/Fee Distribution

2016 Tax Information

Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 3.53	Levy code:0816
Conservation	$ 9.25	Status: Exempt
Total billed:	**$ 12.78**	Omit year: 0000
Amount paid: $ 12.78		
Interest: $ 0.00		
Penalty: $ 0.00		
2016 Balance:	**$ 0.00**	

2015 Tax Information

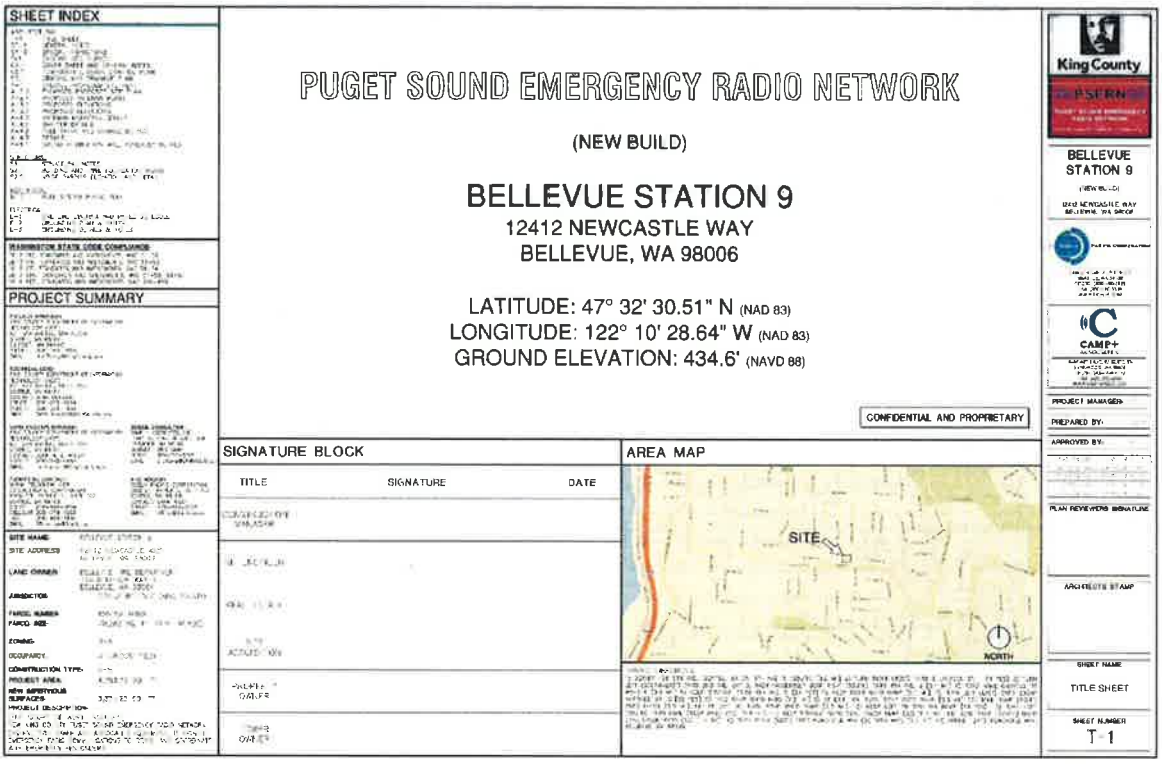
Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 3.53	Levy code:0816
Conservation	$ 9.25	Status: Exempt
Total billed:	**$ 12.78**	Omit year: 0000
Amount paid: $ 12.78		
Interest: $ 0.00		
Penalty: $ 0.00		
2015 Balance:	**$ 0.00**	

2014 Tax Information

Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 2.40	Levy code:0816
Conservation	$ 5.08	Status: Exempt
Total billed:	**$ 7.48**	Omit year: 0000
Amount paid: $ 7.48		
Interest: $ 0.00		
Penalty: $ 0.00		
2014 Balance:	**$ 0.00**	

2013 Tax Information

Tax:	$ 0.00	Land value: $ 0
Other Charges		Improvement value: $ 0
Noxious Weed	$ 2.40	Levy code:0816
Conservation	$ 5.08	Status: Exempt
Total billed:	**$ 7.48**	Omit year: 0000
Amount paid: $ 7.48		
Interest: $ 0.00		
Penalty: $ 0.00		
2013 Balance:	**$ 0.00**	



SHEET INDEX

PROJECT SUMMARY

PUGET SOUND EMERGENCY RADIO NETWORK

(NEW BUILD)

BELLEVUE STATION 9

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

LATITUDE: 47° 32' 30.51" N (NAD 83)
LONGITUDE: 122° 10' 28.64" W (NAD 83)
GROUND ELEVATION: 434.6' (NAVD 88)

CONFIDENTIAL AND PROPRIETARY

SIGNATURE BLOCK

TITLE	SIGNATURE	DATE

AREA MAP

SITE

NORTH

King County

BELLEVUE STATION 9

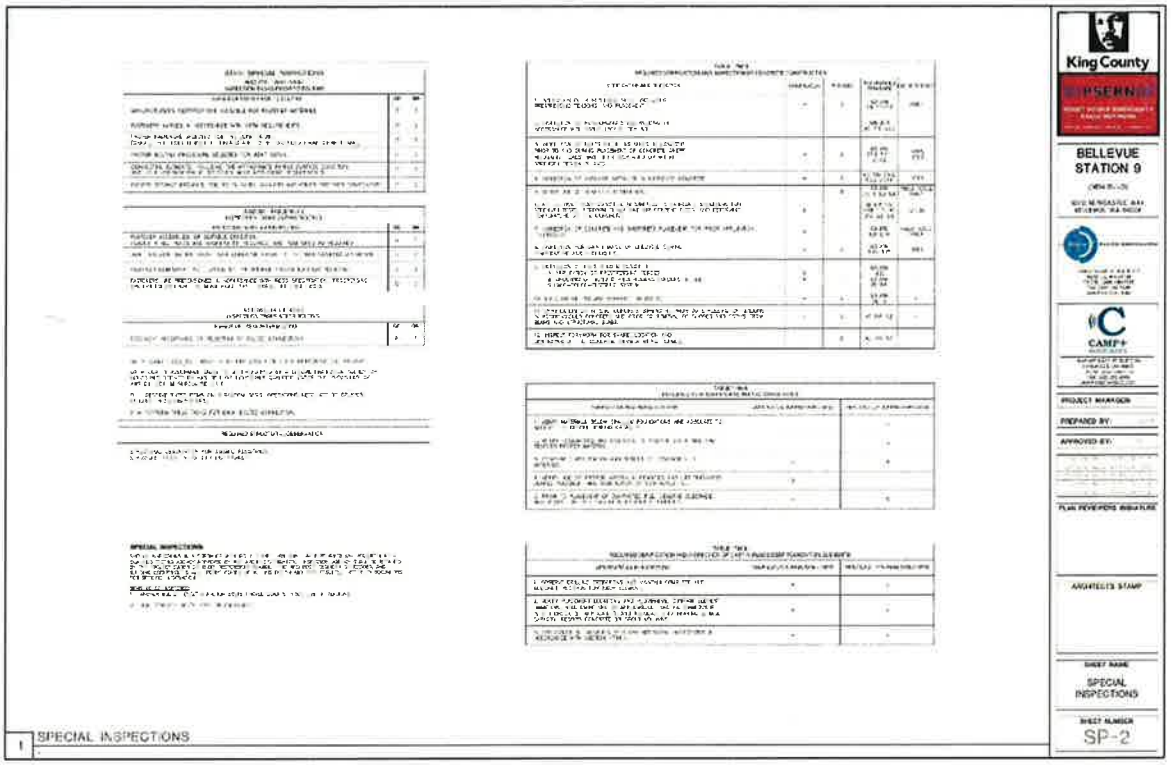
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME: TITLE SHEET
SHEET NUMBER: T-1

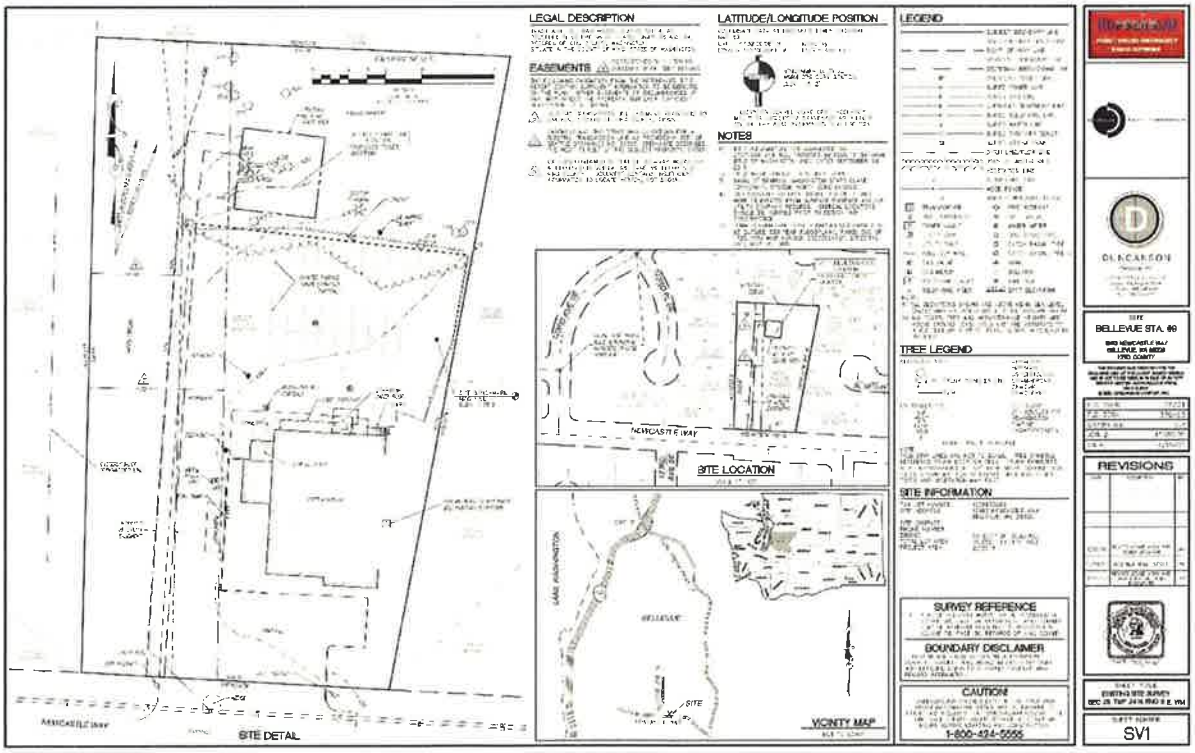
GENERAL NOTES

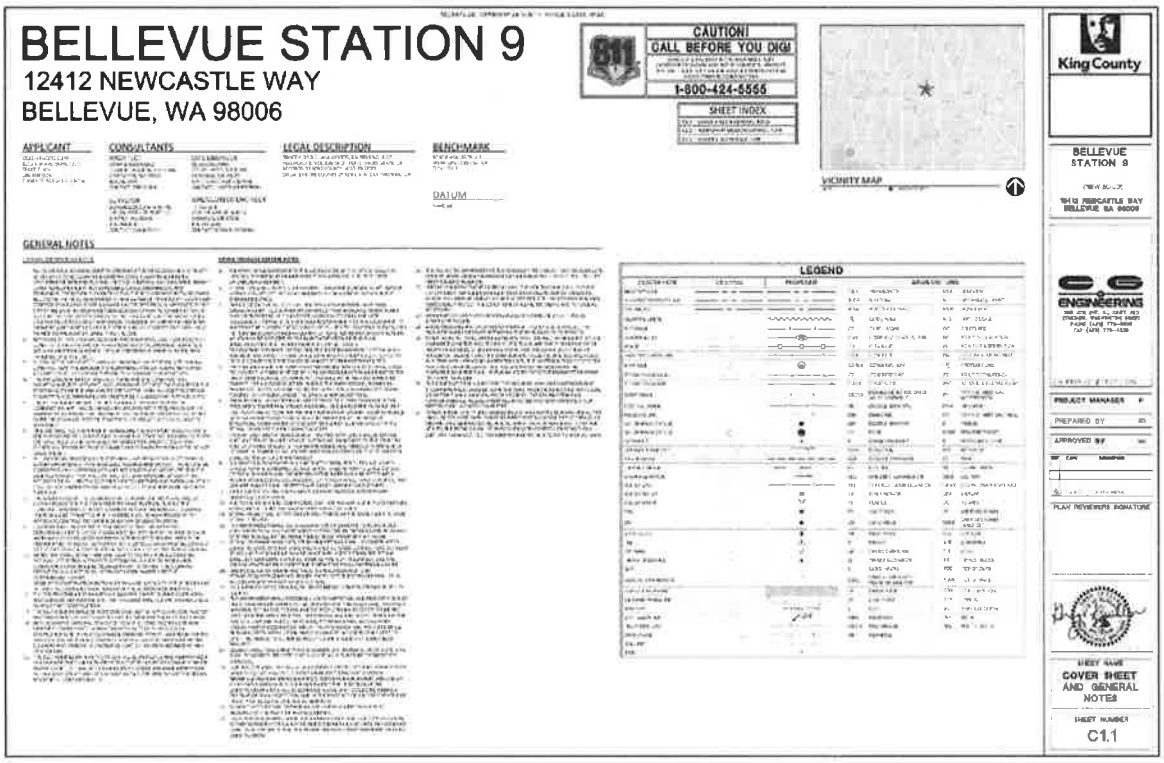
King County

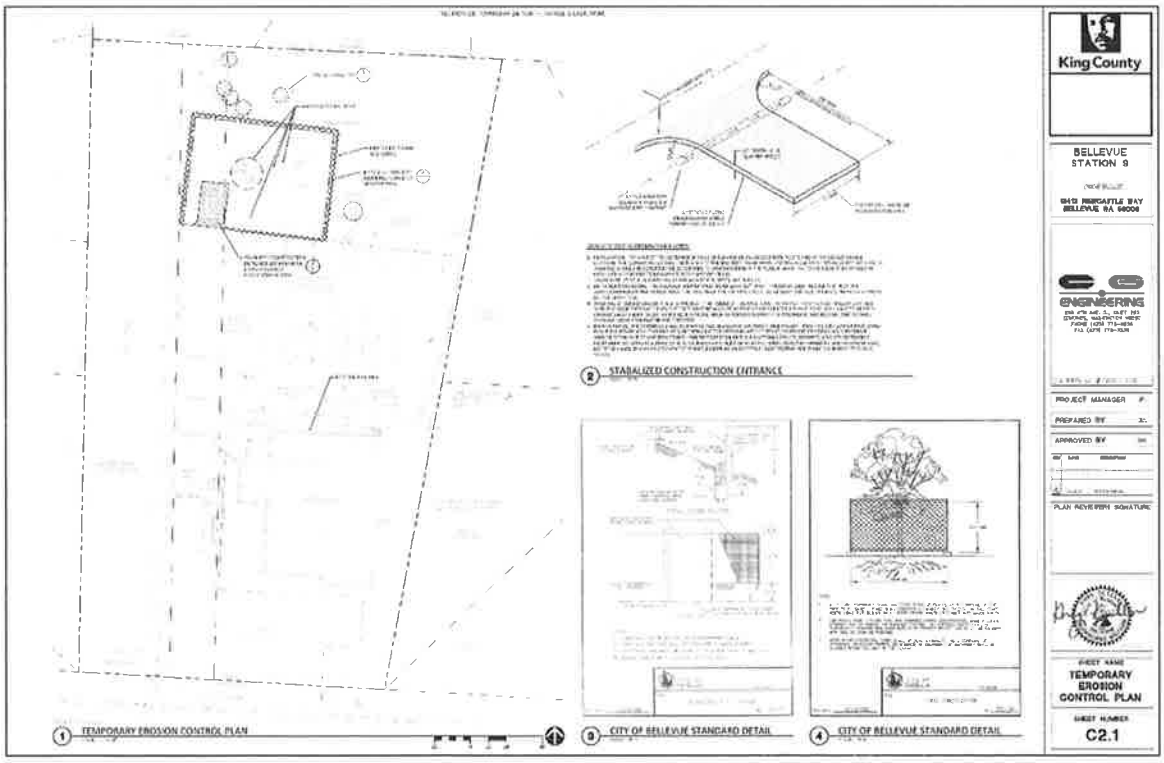
BELLEVUE STATION 9

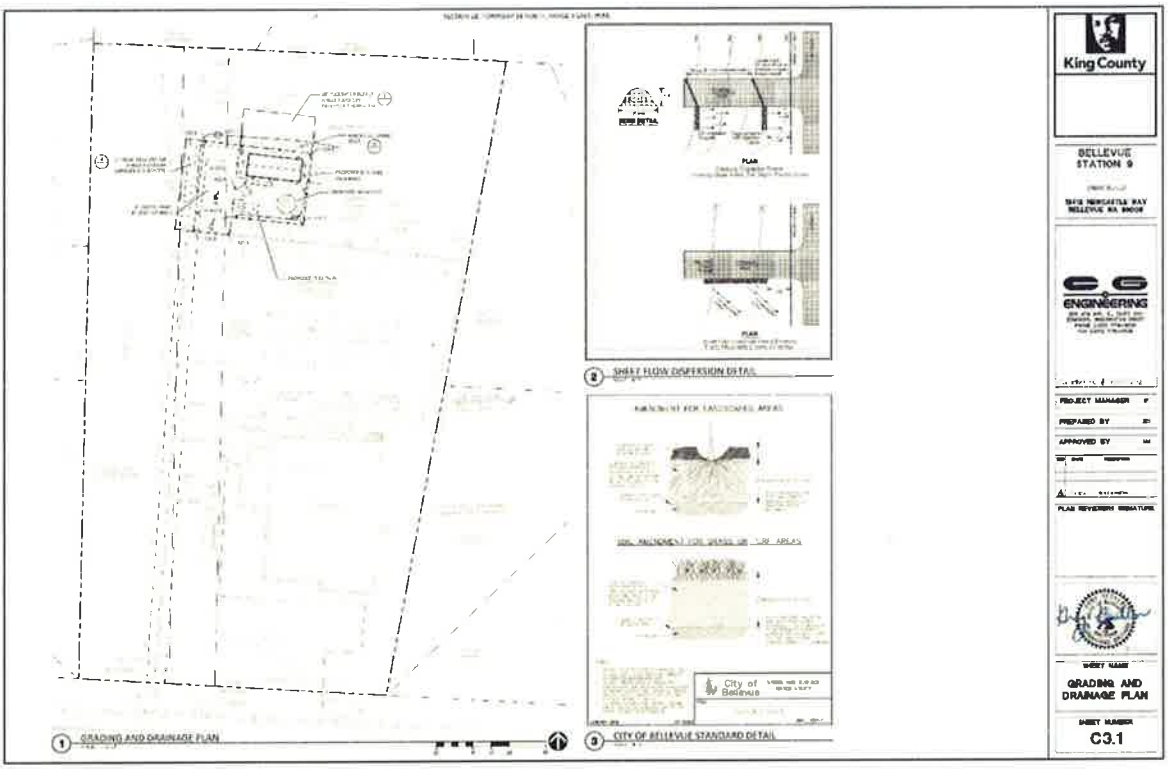
PROJECT MANAGER:
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME: GENERAL NOTES
SHEET NUMBER: SP-1

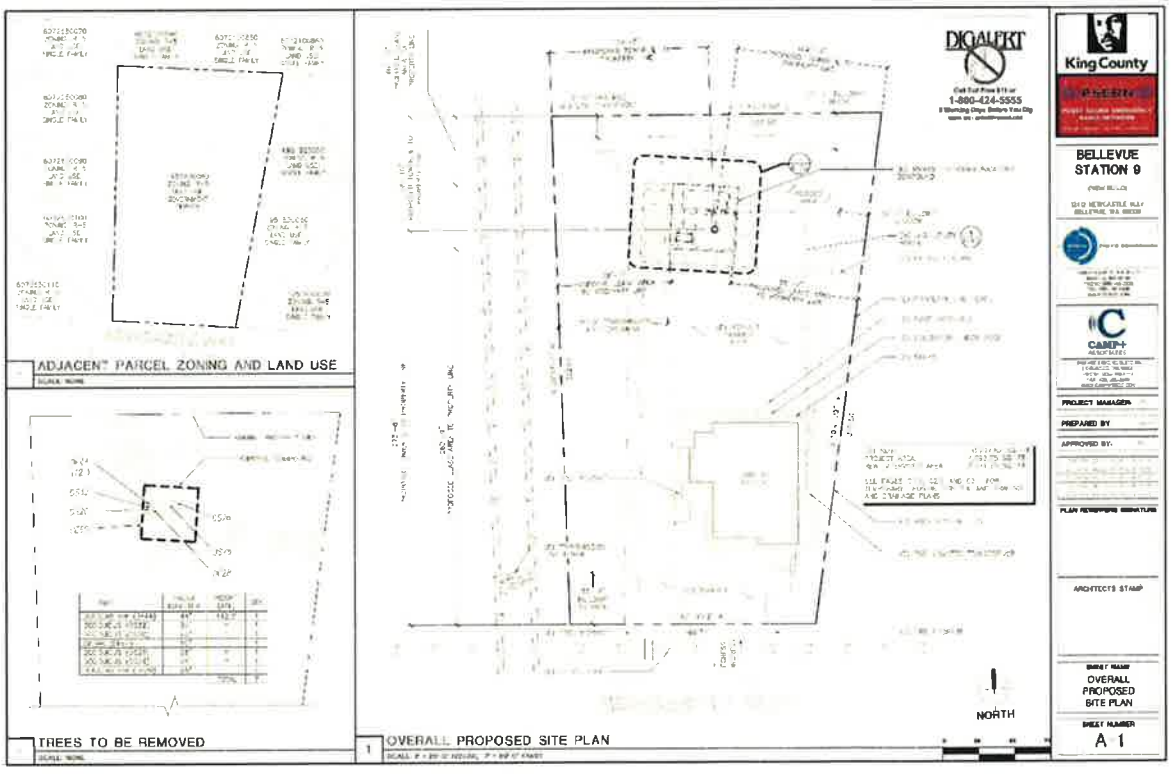

King County
BELLEVUE STATION 9
CAMP+
SPECIAL INSPECTIONS
SP-2
1 SPECIAL INSPECTIONS

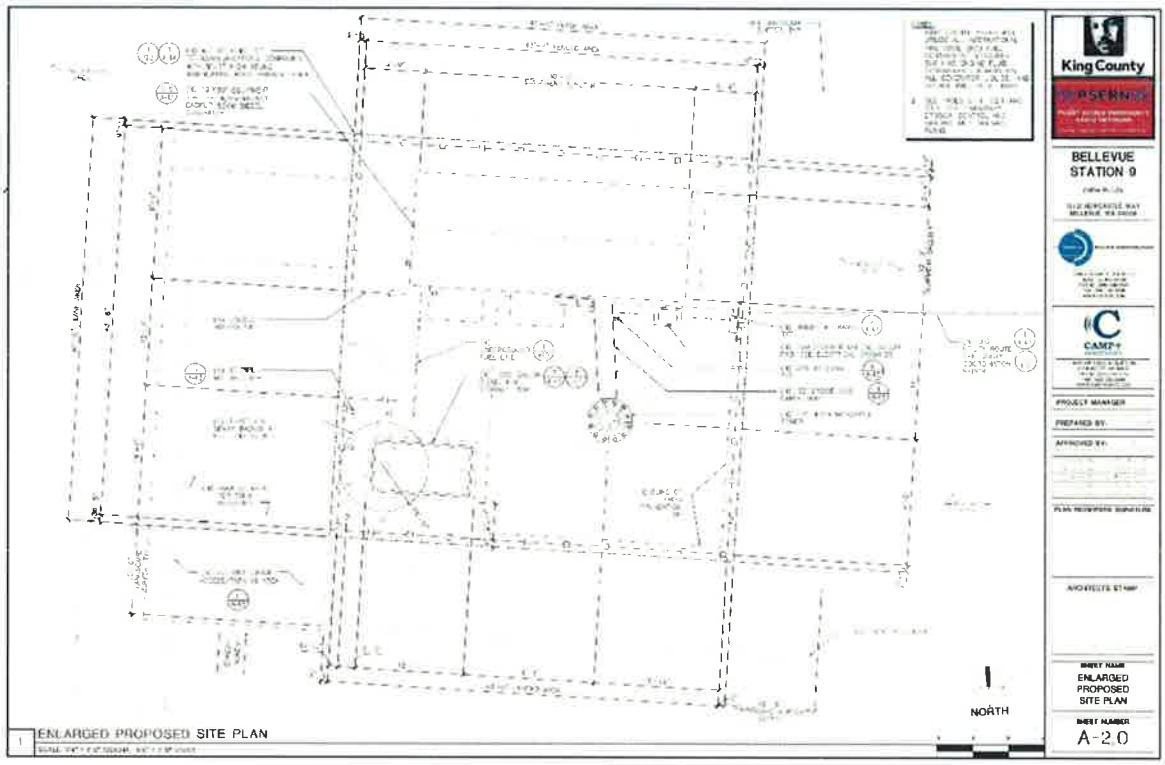

LEGAL DESCRIPTION
EASEMENTS
LATITUDE/LONGITUDE POSITION
NOTES
LEGEND
TREE LEGEND
SITE INFORMATION
SURVEY REFERENCE
BOUNDARY DISCLAIMER
CAUTION
1-800-424-5555
NORTH
SITE DETAIL
NORTHEAST 8TH WAY
SITE LOCATION
LAKE WASHINGTON
BELLEVUE
SITE
VICINITY MAP
BELLEVUE STA. #9
REVISIONS
SV1

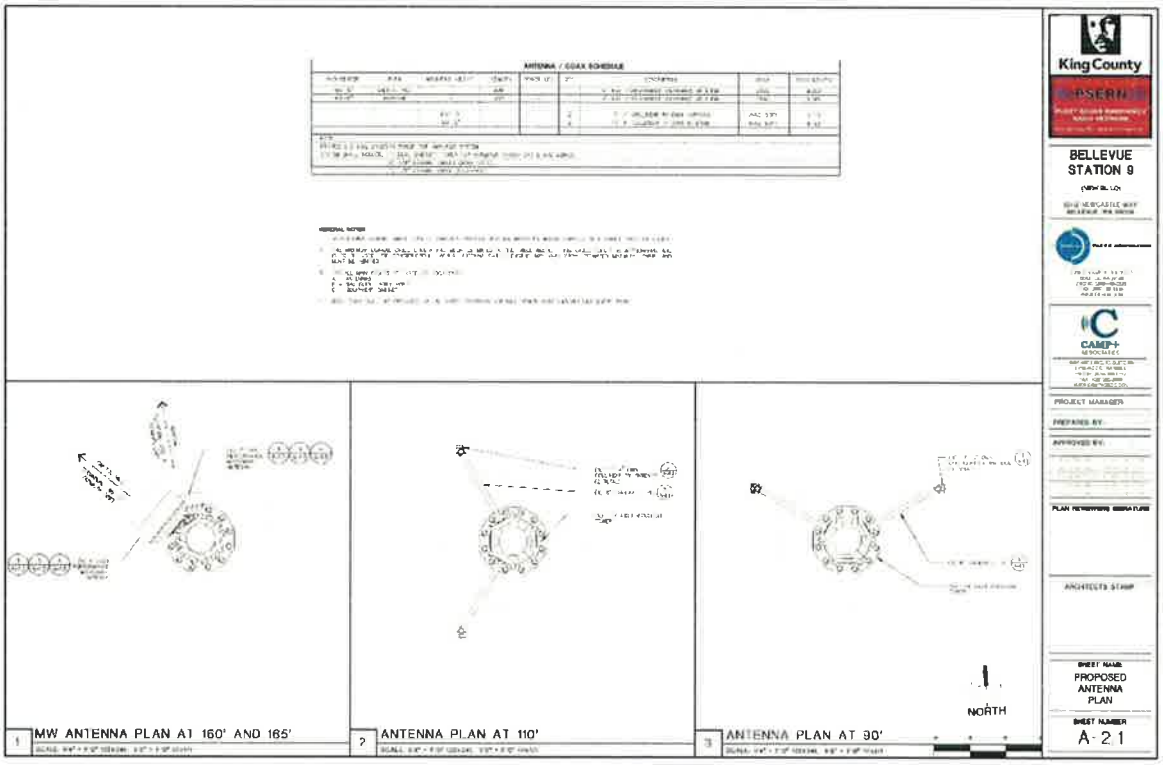

BELLEVUE STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
CAUTION!
CALL BEFORE YOU DIG!
1-800-424-5555
SHEET INDEX
VICINITY MAP
APPLICANT
CONSULTANTS
LEGAL DESCRIPTION
BENCHMARK
DATUM
GENERAL NOTES
LEGEND
King County
BELLEVUE STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWERS SIGNATURE
SHEET NAME
COVER SHEET AND GENERAL NOTES
SHEET NUMBER
C1.1

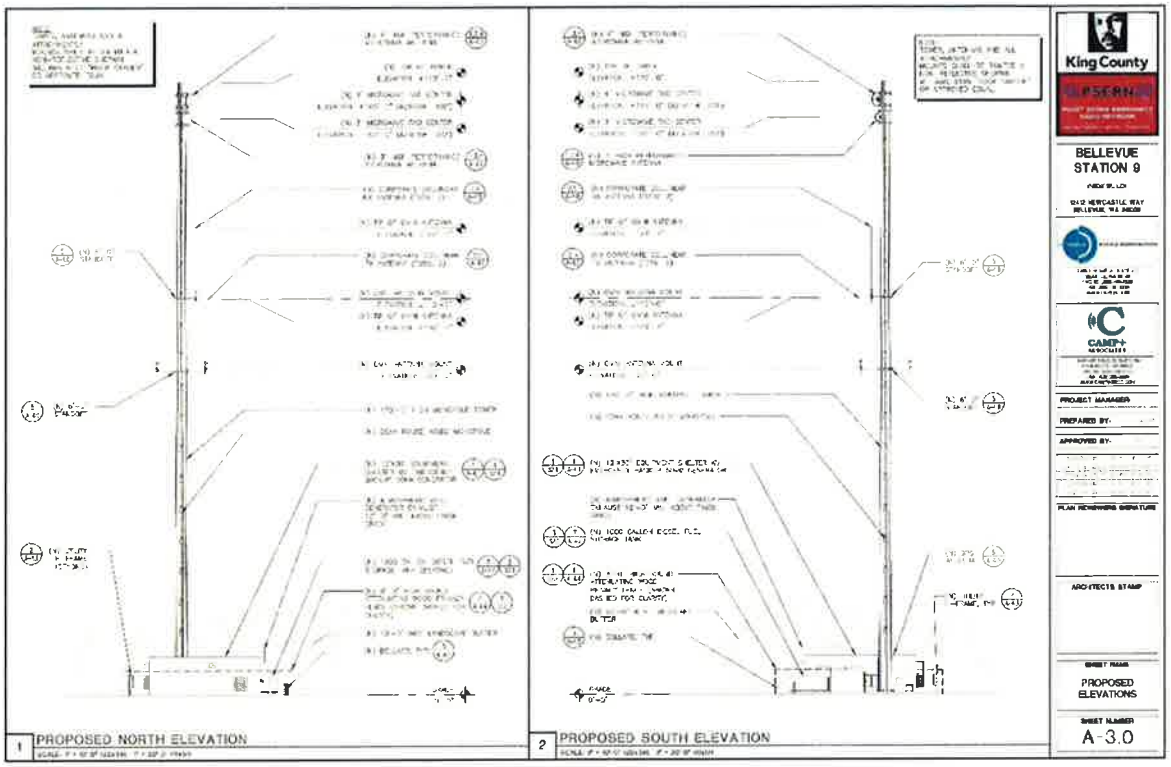

1 TEMPORARY EROSION CONTROL PLAN
2 STABILIZED CONSTRUCTION ENTRANCE
3 CITY OF BELLEVUE STANDARD DETAIL
4 CITY OF BELLEVUE STANDARD DETAIL
King County
BELLEVUE STATION 9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWERS SIGNATURE
SHEET NAME
TEMPORARY EROSION CONTROL PLAN
SHEET NUMBER
C2.1


King County
BELLEVUE STATION 9
ENGINEERING
GRADING AND DRAINAGE PLAN
C3.1
1 GRADING AND DRAINAGE PLAN
2 SHEET FLOW DISPERSION DETAIL
3 CITY OF BELLEVUE STANDARD DETAIL


ADJACENT PARCEL ZONING AND LAND USE
TREES TO BE REMOVED
1 OVERALL PROPOSED SITE PLAN
DIGALERT
1-800-424-5555
King County
BELLEVUE STATION 9
NORTH
OVERALL PROPOSED SITE PLAN
A1


King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY
APPROVED BY
ARCHITECT'S STAMP
SHEET NAME
ENLARGED PROPOSED SITE PLAN
SHEET NUMBER
A-2.0
NORTH
1 ENLARGED PROPOSED SITE PLAN


ANTENNA / COAX SCHEDULE
King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY
APPROVED BY
ARCHITECT'S STAMP
SHEET NAME
PROPOSED ANTENNA PLAN
SHEET NUMBER
A-2.1
NORTH
1 MW ANTENNA PLAN AT 160' AND 165'
2 ANTENNA PLAN AT 110'
3 ANTENNA PLAN AT 90'


1 PROPOSED NORTH ELEVATION
2 PROPOSED SOUTH ELEVATION
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECT'S STAMP
PROPOSED ELEVATIONS
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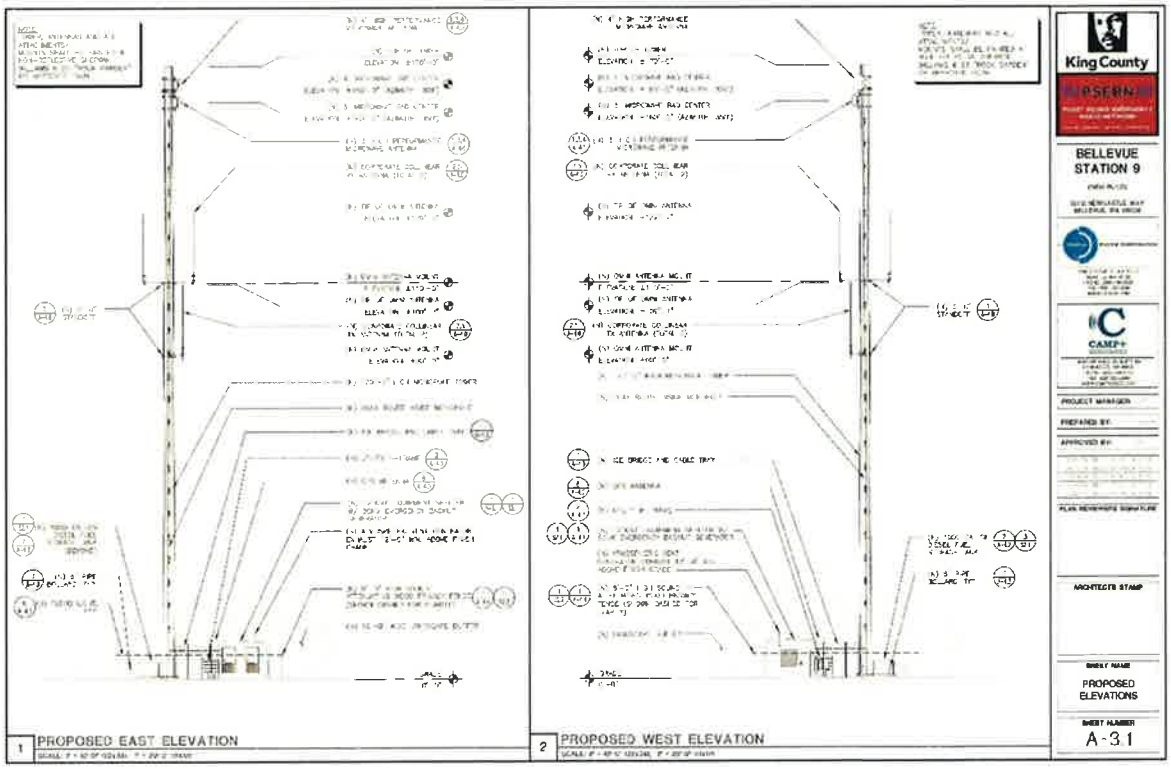
1 PROPOSED EAST ELEVATION
2 PROPOSED WEST ELEVATION
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
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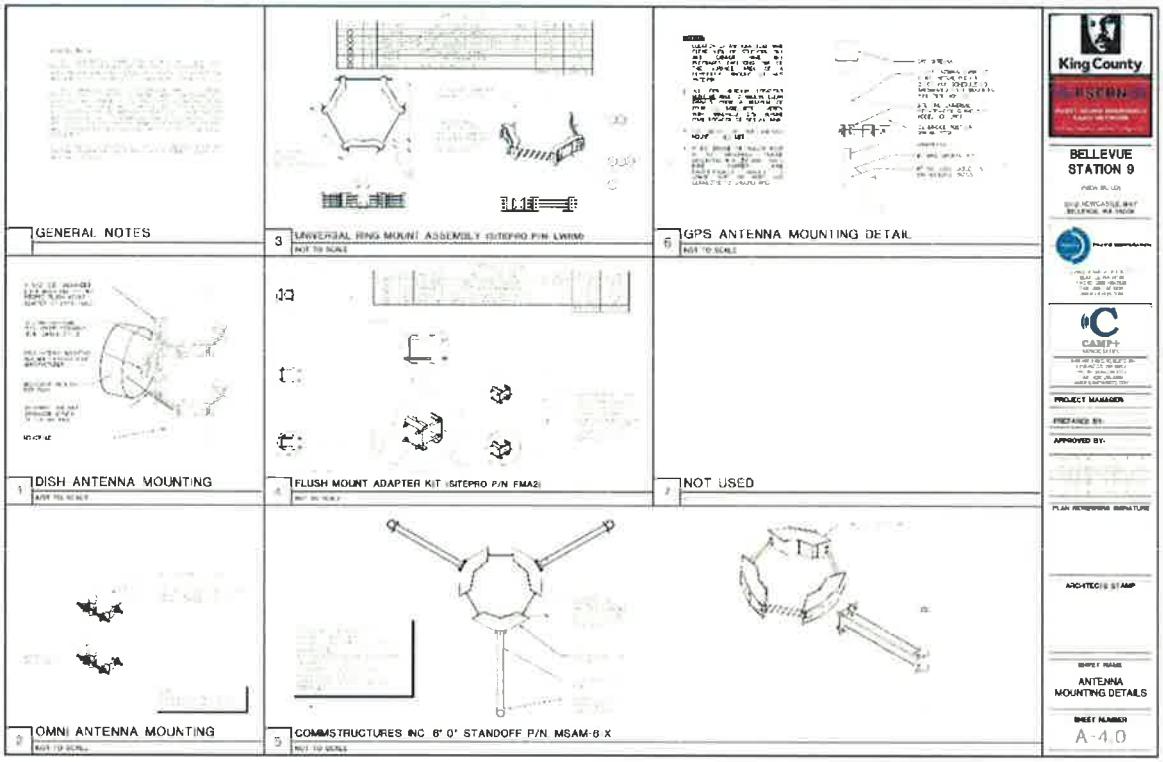
ARCHITECT'S STAMP
PROPOSED ELEVATIONS
A-3.1


GENERAL NOTES
3 UNIVERSAL RING MOUNT ASSEMBLY (SITEPRO P/N LWRM)
NOT TO SCALE
6 GPS ANTENNA MOUNTING DETAIL
NOT TO SCALE
1 DISH ANTENNA MOUNTING
4 FLUSH MOUNT ADAPTER KIT (SITEPRO P/N FMA2)
7 NOT USED
2 OMNI ANTENNA MOUNTING
5 COMMSTRUCTURES INC 6' 0" STANDOFF P/N MSAM-6 X
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
ANTENNA MOUNTING DETAILS
SHEET NUMBER
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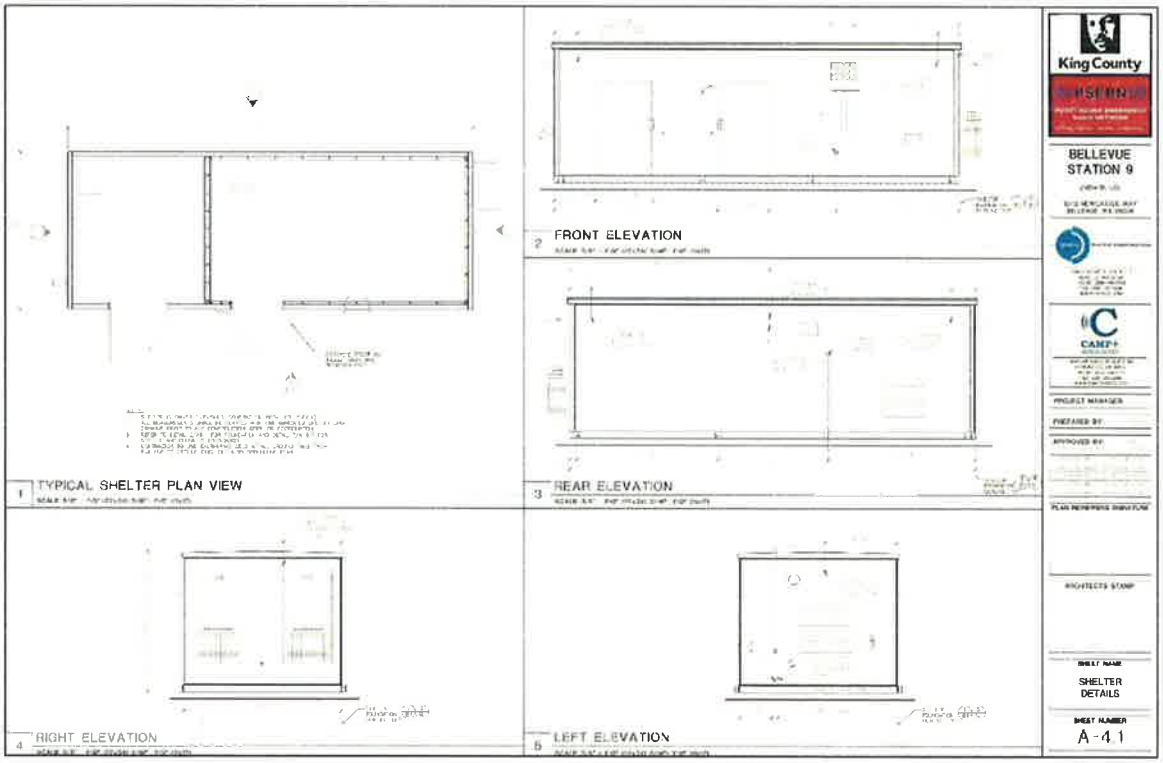
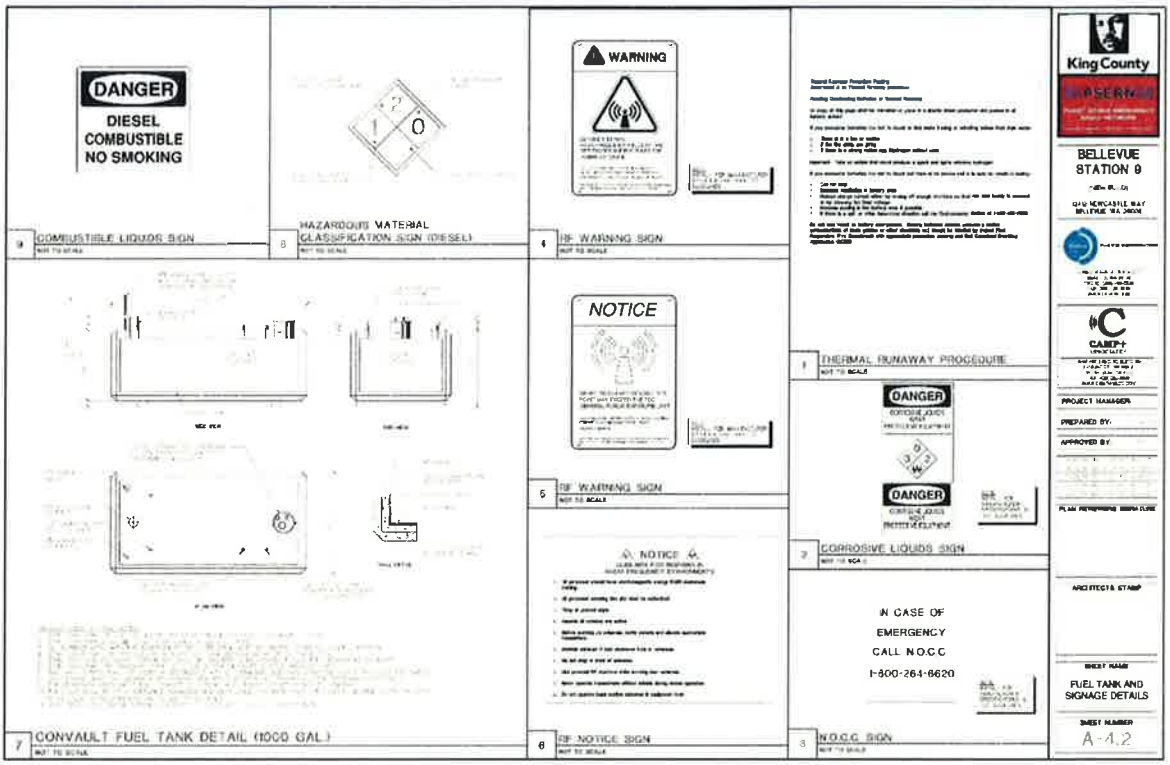
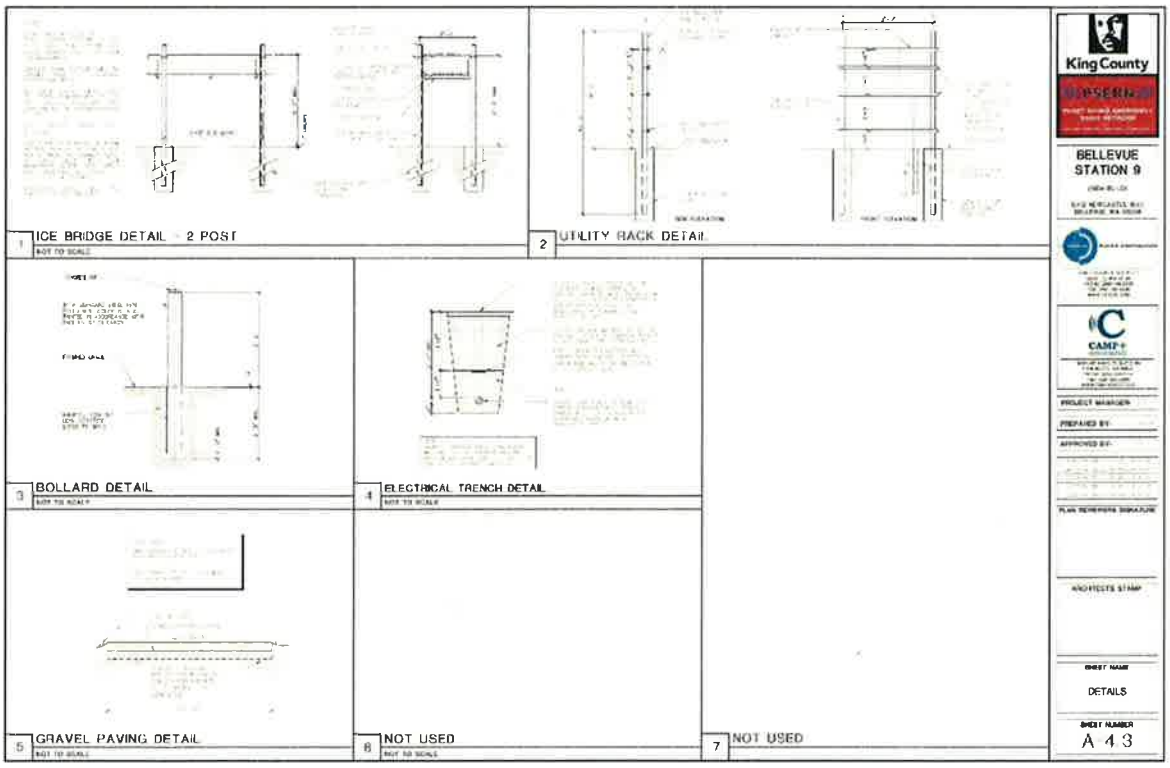
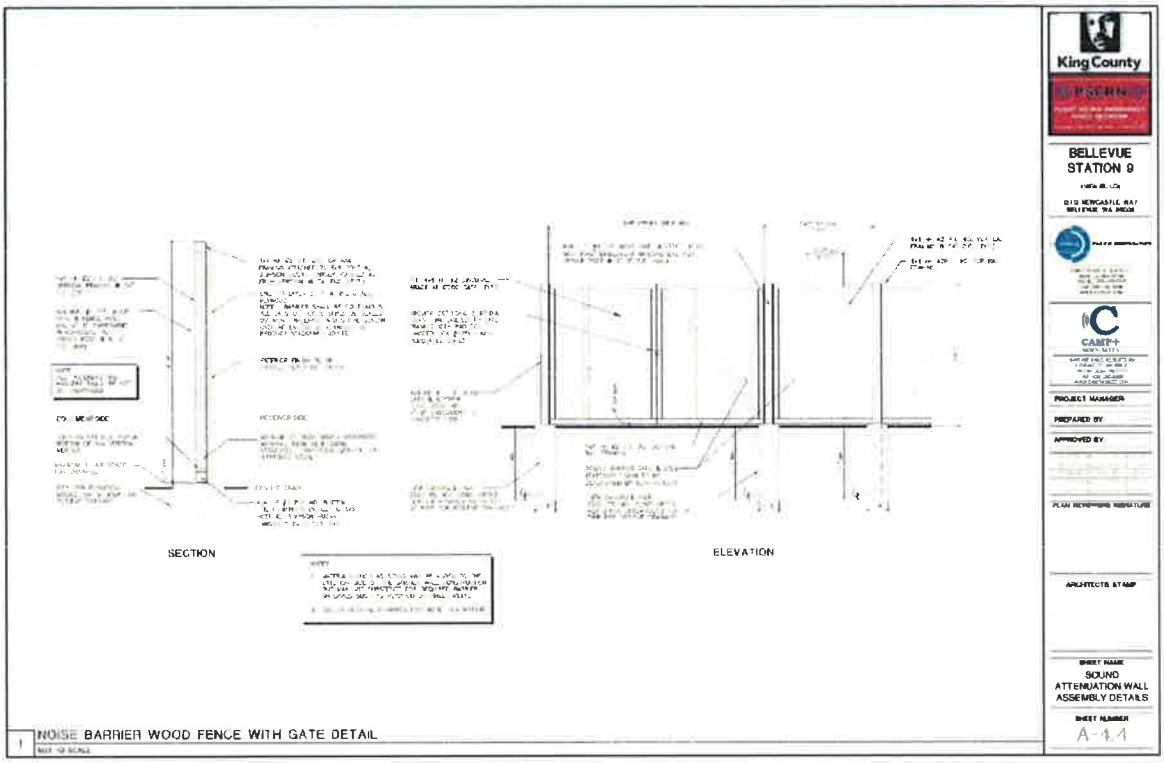
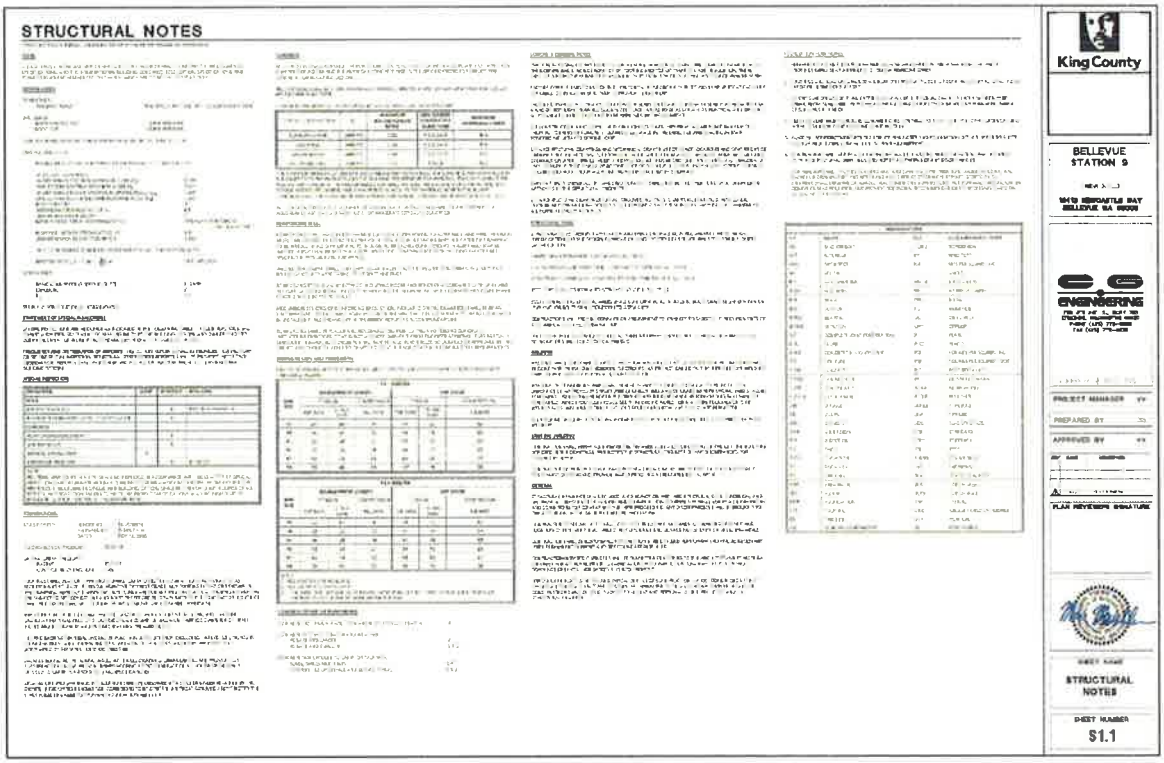
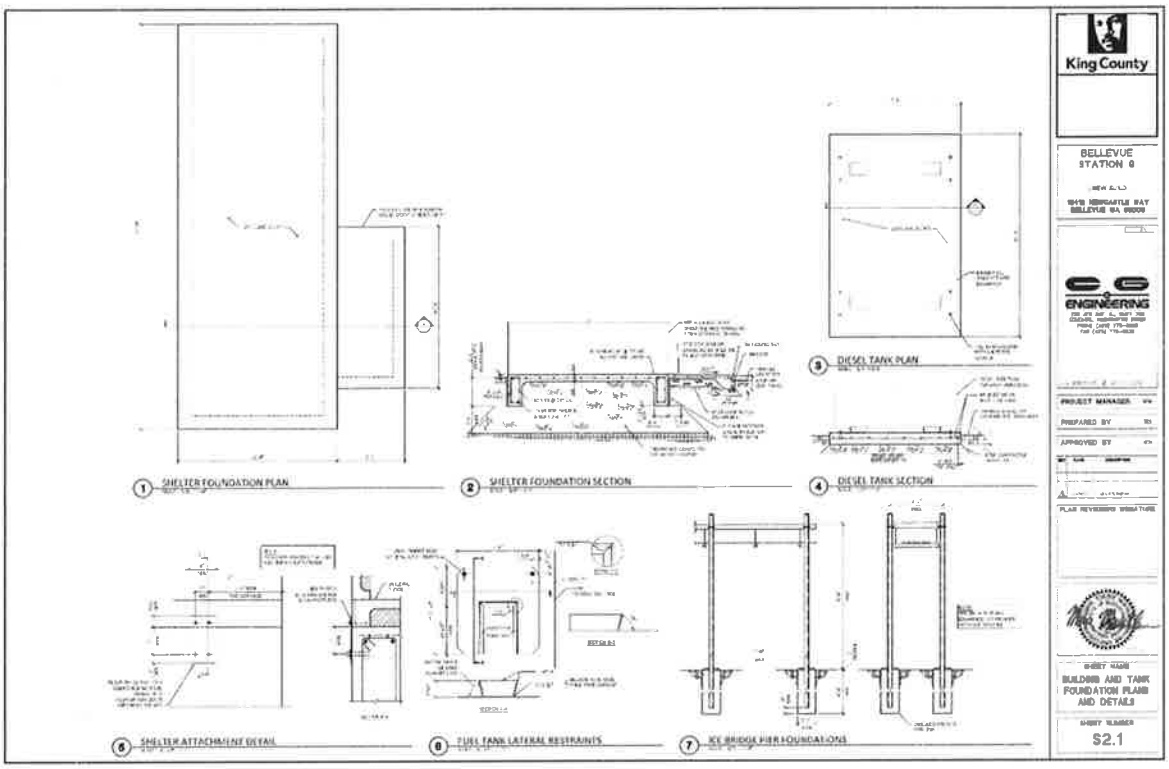

2 FRONT ELEVATION
1 TYPICAL SHELTER PLAN VIEW
3 REAR ELEVATION
4 RIGHT ELEVATION
5 LEFT ELEVATION
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY:
APPROVED BY:
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
SHELTER DETAILS
SHEET NUMBER
A-4.1

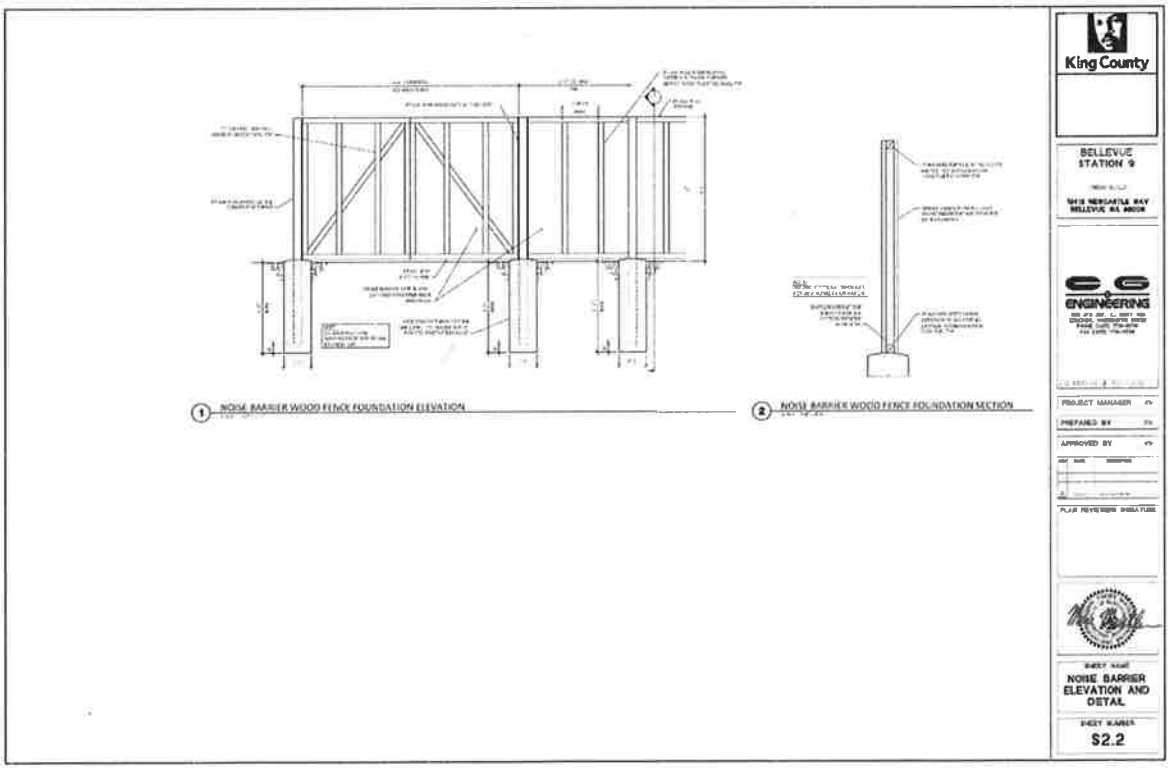

DANGER
DIESEL COMBUSTIBLE NO SMOKING
9 COMBUSTIBLE LIQUIDS SIGN
8 HAZARDOUS MATERIAL CLASSIFICATION SIGN (DIESEL)
WARNING
4 RF WARNING SIGN
NOTICE
5 RF WARNING SIGN
NOTICE
6 RF NOTICE SIGN
1 THERMAL RUNAWAY PROCEDURE
DANGER
DANGER
2 CORROSIVE LIQUIDS SIGN
IN CASE OF EMERGENCY CALL N.O.C.C 1-800-264-6620
3 N.O.C.C. SIGN
7 CONVAULT FUEL TANK DETAIL (1000 GAL)
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY
APPROVED BY
ARCHITECT'S STAMP
SHEET NAME
FUEL TANK AND SIGNAGE DETAILS
SHEET NUMBER
A-4.2

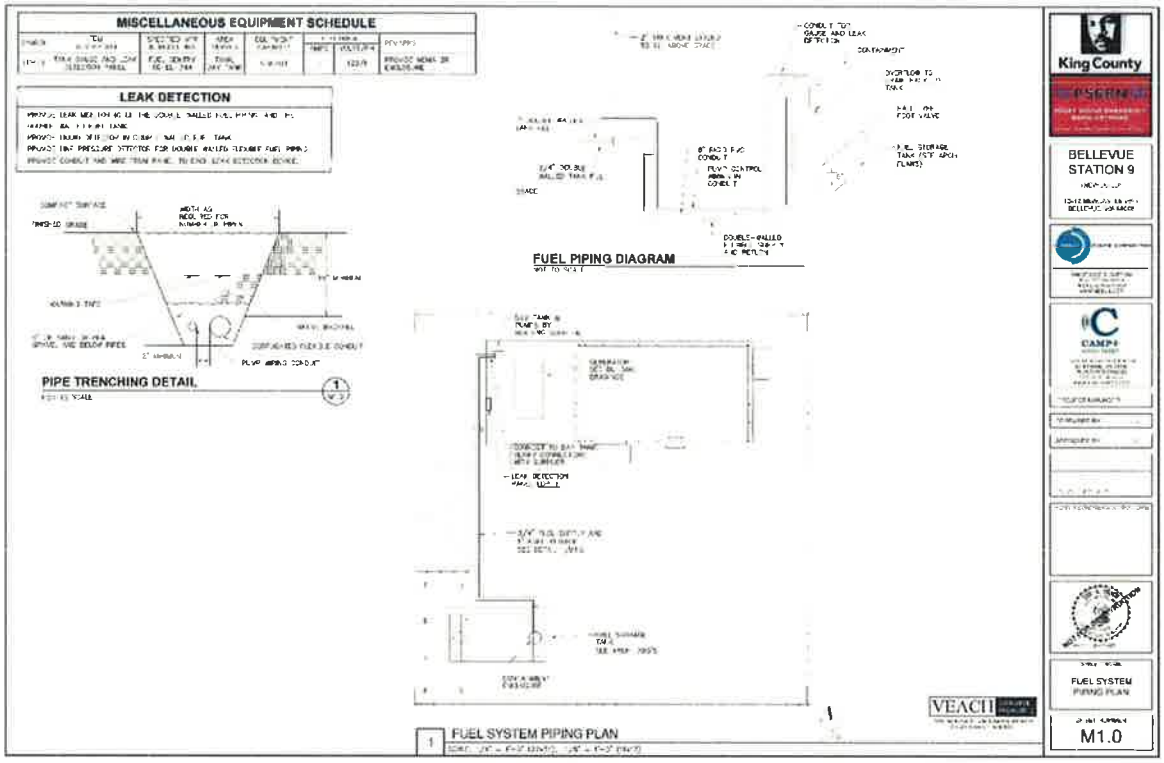

1 ICE BRIDGE DETAIL - 2 POST
2 UTILITY RACK DETAIL
3 BOLLARD DETAIL
4 ELECTRICAL TRENCH DETAIL
5 GRAVEL PAVING DETAIL
6 NOT USED
7 NOT USED
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY
APPROVED BY
ARCHITECT'S STAMP
SHEET NAME
DETAILS
SHEET NUMBER
A-4.3

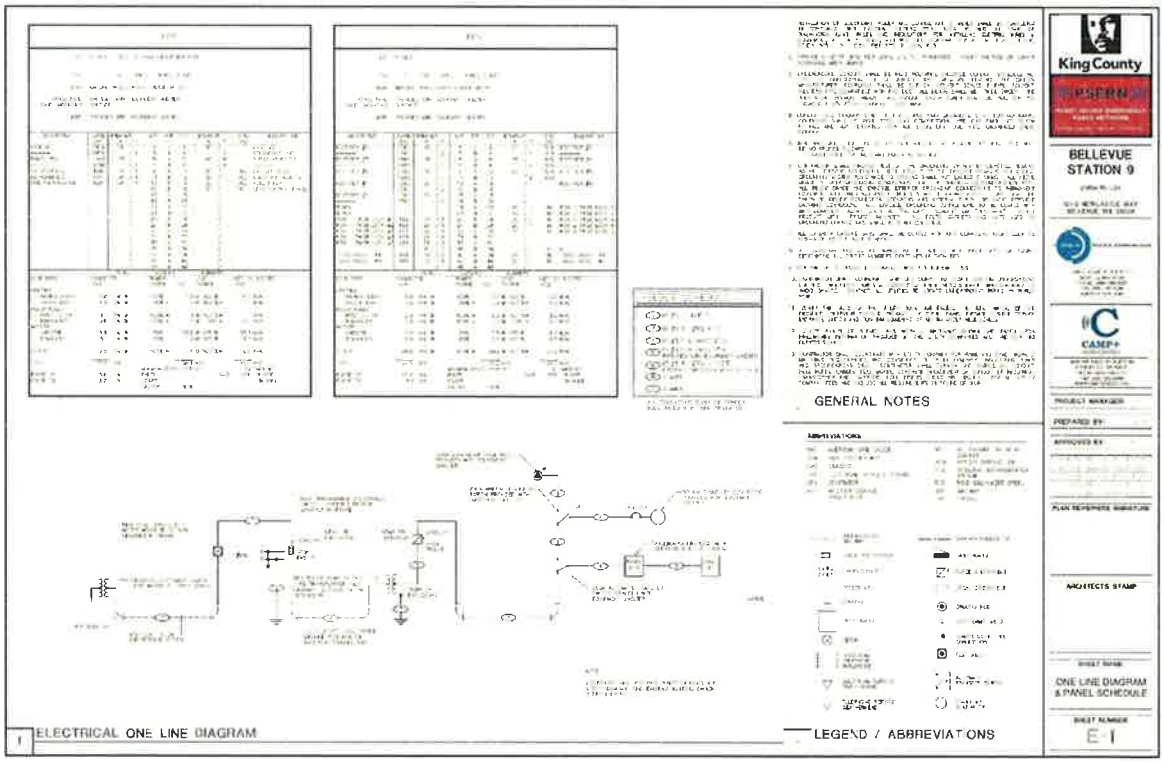

King County
BELLEVUE STATION 9
SECTION
ELEVATION
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWERS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
SOUND ATTENUATION WALL ASSEMBLY DETAILS
SHEET NUMBER
A-1.1
1 NOISE BARRIER WOOD FENCE WITH GATE DETAIL

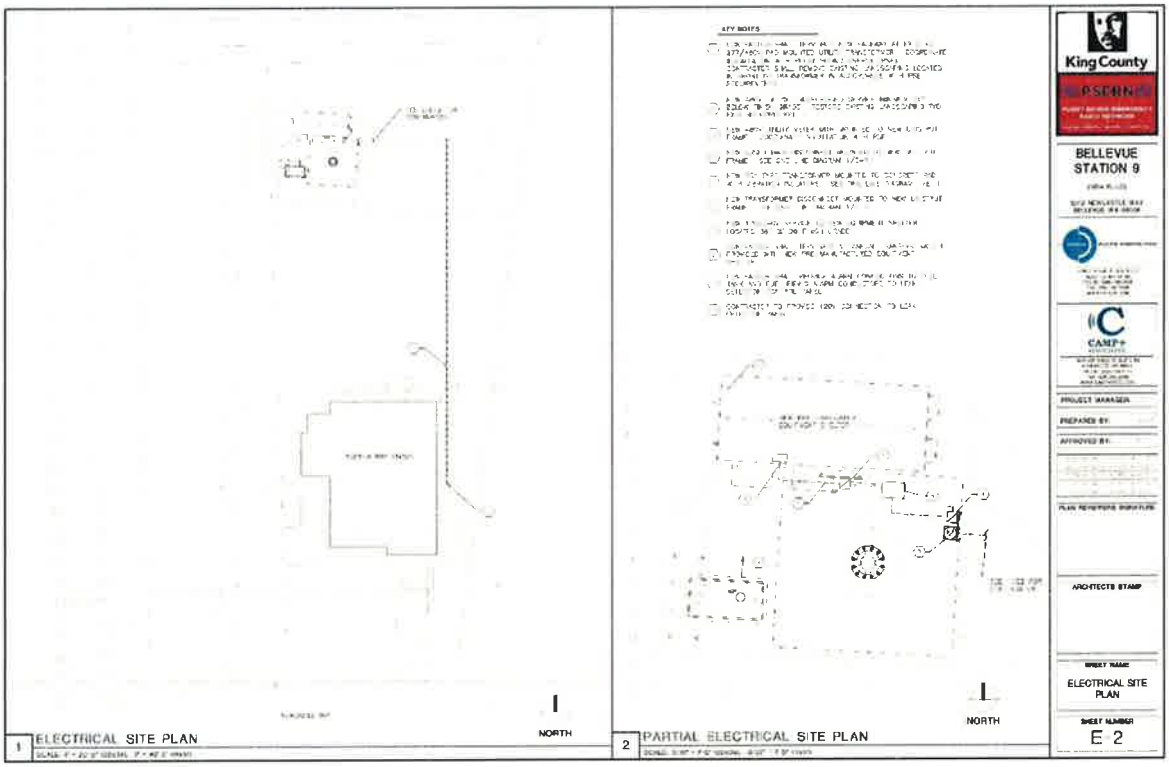

STRUCTURAL NOTES
King County
BELLEVUE STATION 9
ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWERS SIGNATURE
STRUCTURAL NOTES
SHEET NUMBER
S1.1

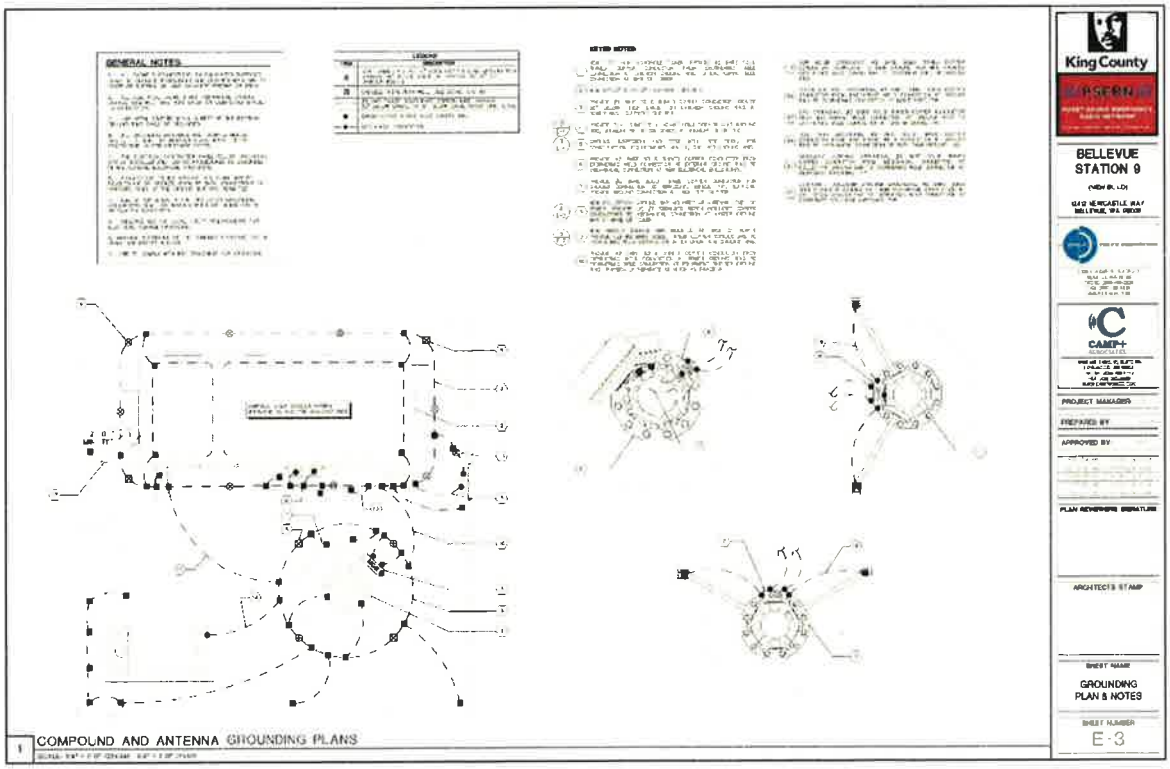

1 SHELTER FOUNDATION PLAN
2 SHELTER FOUNDATION SECTION
3 DIESEL TANK PLAN
4 DIESEL TANK SECTION
5 SHELTER ATTACHMENT DETAIL
6 FUEL TANK LATERAL RESTRAINTS
7 ICE BRIDGE PIER FOUNDATIONS
King County
BELLEVUE STATION 9
CG ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWER SIGNATURE
SHEET NAME
BUILDING AND TANK FOUNDATION PLANS AND DETAILS
SHEET NUMBER
S2.1

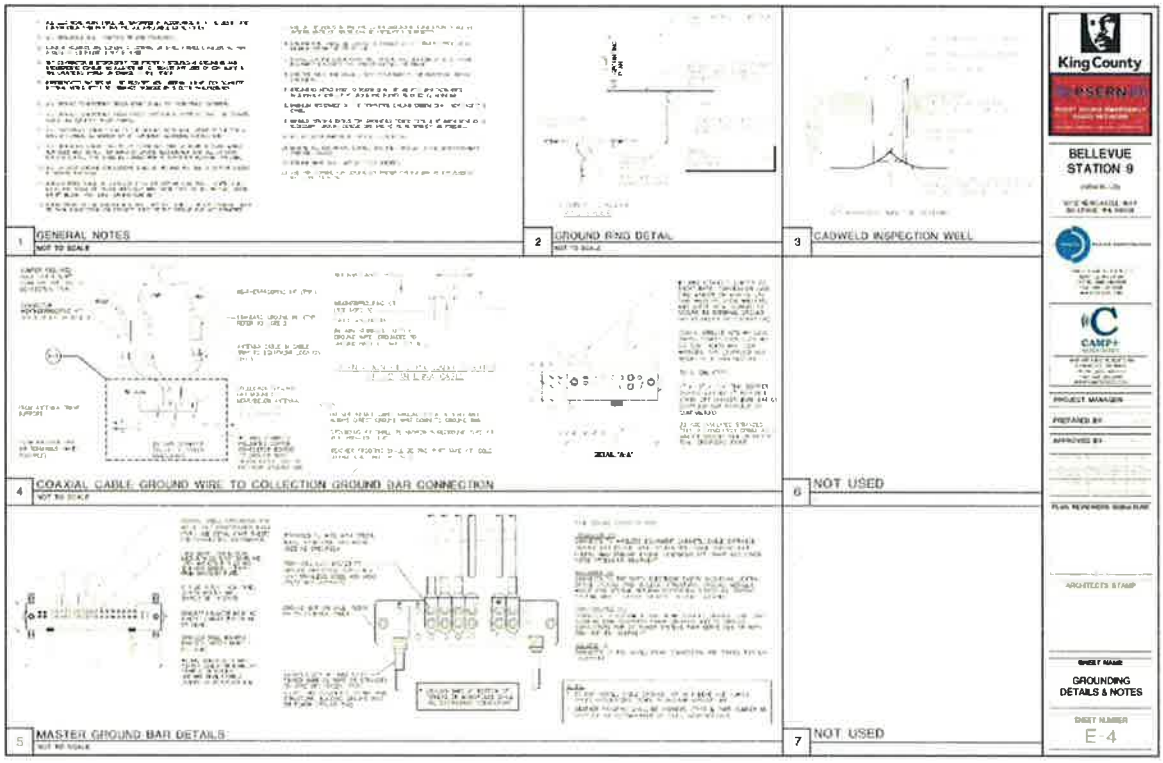

1 NOISE BARRIER WOOD FENCE FOUNDATION ELEVATION
2 NOISE BARRIER WOOD FENCE FOUNDATION SECTION
King County
BELLEVUE STATION 9
CG ENGINEERING
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWER SIGNATURE
SHEET NAME
NOISE BARRIER ELEVATION AND DETAIL
SHEET NUMBER
S2.2


MISCELLANEOUS EQUIPMENT SCHEDULE
LEAK DETECTION
PIPE TRENCHING DETAIL
FUEL PIPING DIAGRAM
FUEL SYSTEM PIPING PLAN
King County
BELLEVUE STATION 9
FUEL SYSTEM PIPING PLAN
M1.0


GENERAL NOTES
ELECTRICAL ONE LINE DIAGRAM
LEGEND / ABBREVIATIONS
King County
BELLEVUE STATION 9
ONE LINE DIAGRAM & PANEL SCHEDULE
E-1


King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISIONS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
ELECTRICAL SITE PLAN
SHEET NUMBER
E-2
1 ELECTRICAL SITE PLAN
NORTH
2 PARTIAL ELECTRICAL SITE PLAN
NORTH


King County
BELLEVUE STATION 9
CAMP+
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVISIONS SIGNATURE
ARCHITECTS STAMP
SHEET NAME
GROUNDING PLAN & NOTES
SHEET NUMBER
E-3
1 COMPOUND AND ANTENNA GROUNDING PLANS


1 GENERAL NOTES
NOT TO SCALE
2 GROUND RING DETAIL
NOT TO SCALE
3 CADWELD INSPECTION WELL
4 COAXIAL CABLE GROUND WIRE TO COLLECTION GROUND BAR CONNECTION
6 NOT USED
5 MASTER GROUND BAR DETAILS
7 NOT USED
King County
BELLEVUE STATION 9
PROJECT MANAGER
PREPARED BY
APPROVED BY
ARCHITECT'S STAMP
GROUNDING DETAILS & NOTES
E-4

TIM BRADLEY IMAGING

Date: July 27, 2016

Re: Balloon Test and Photo Simulations
Bellevue Station 9

To: Sarah Telschow
Odelia Pacific Corp.

On June 28, 2016, a red four foot diameter helium balloon was raised to 170 feet above ground level at the proposed location of the new tower, from 9 a.m. to 11a.m.

The height of the balloon is checked with a Laser Range Finder. This number corresponds to the height and location of the proposed tower. Photos are taken from several vantage points to determine the visibility of the proposed tower.

Photo simulations will be produced using these photos. The "before shots" demonstrate the "as is" view of the camera. When inflated, the four foot balloon is a known size and utilized for determining the size of the 8 ft antennas for placement on the proposed tower in completion of the photo simulation(s) as provided.

TBI has specialized in photo simulations and balloon testing for the wireless telecommunications industry since 1998.

Thank you,

Tim Bradley

Tim Bradley
Tim Bradley Imaging

1117 67th Ave Ct. E. Fife, WA 98424
Cell Phone: 253-279-7716
AirPhotoOne@comcast.net

TIM BRADLEY IMAGING

PHOTO SIM LOCATION MAP

TOWER SEEN - SIMS DONE

TOWER SEEN - SIMS NOT DONE

TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #1 LOOKING NORTH
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #2 LOOKING NORTHWEST
ON NEWCASTLE WAY

PROPOSED

TIM BRADLEY IMAGING

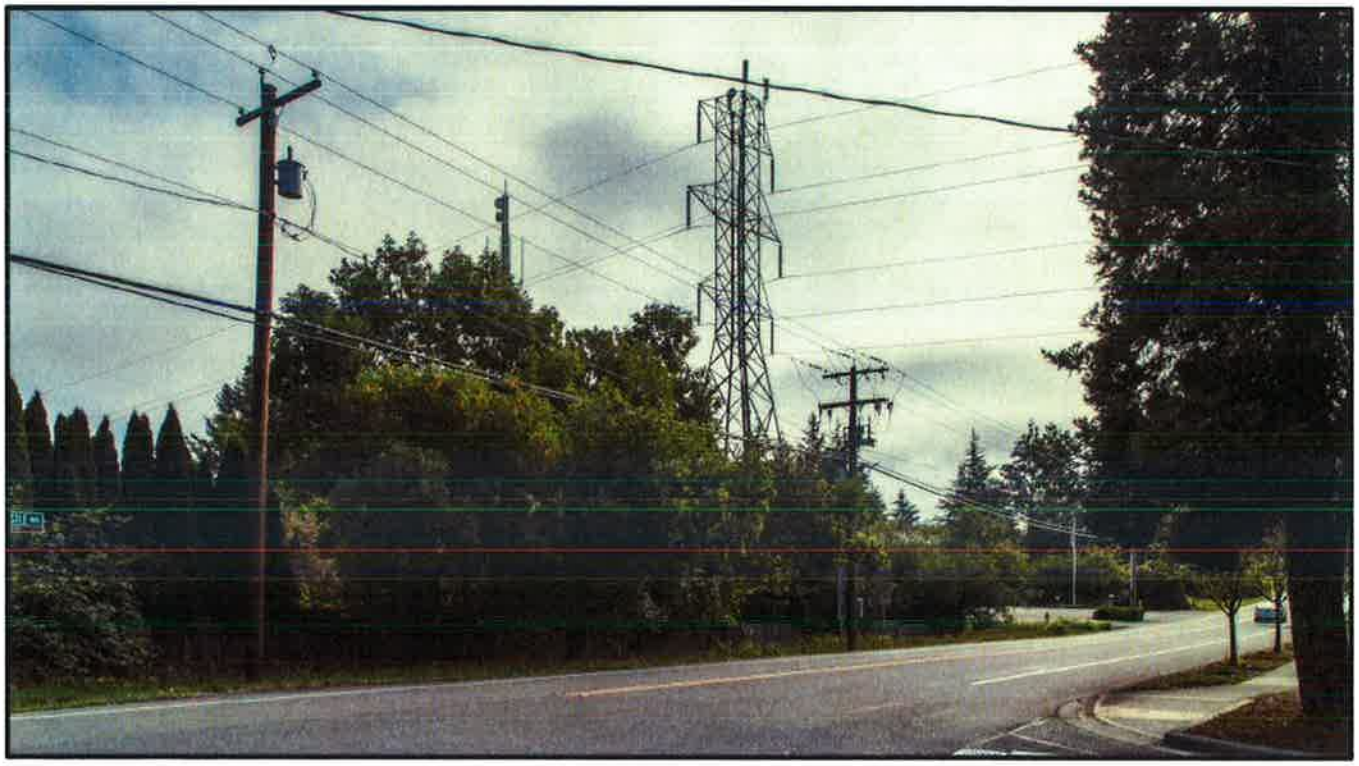
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #3 LOOKING NORTHEAST
ON NEWCASTLE WAY



PROPOSED

TIM BRADLEY IMAGING

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

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #4 LOOKING SOUTHEAST
ON 123RD PL SE

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #5 LOOKING SOUTH
ON 125TH PL SE

PROPOSED

TIM BRADLEY IMAGING

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

12412 Newcastle Way, Bellevue, WA

CURRENT

VIEW #6 LOOKING WEST
ON SE 68TH PL

PROPOSED

TIM BRADLEY IMAGING

TIM BRADLEY IMAGING

VIEW #7
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #8
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #9
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #10
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #11
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #12
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #13
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #14
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #15
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #16
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #17
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #18
TOWER SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #19
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #20
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #21
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #22
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #23
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #24
TOWER SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #25
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #26
TOWER NOT SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #27
TOWER NOT SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #28
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #29
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #30
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #31
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #32
TOWER NOT SEEN

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

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #33
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #34
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #35
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #36
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

TIM BRADLEY IMAGING

VIEW #37
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

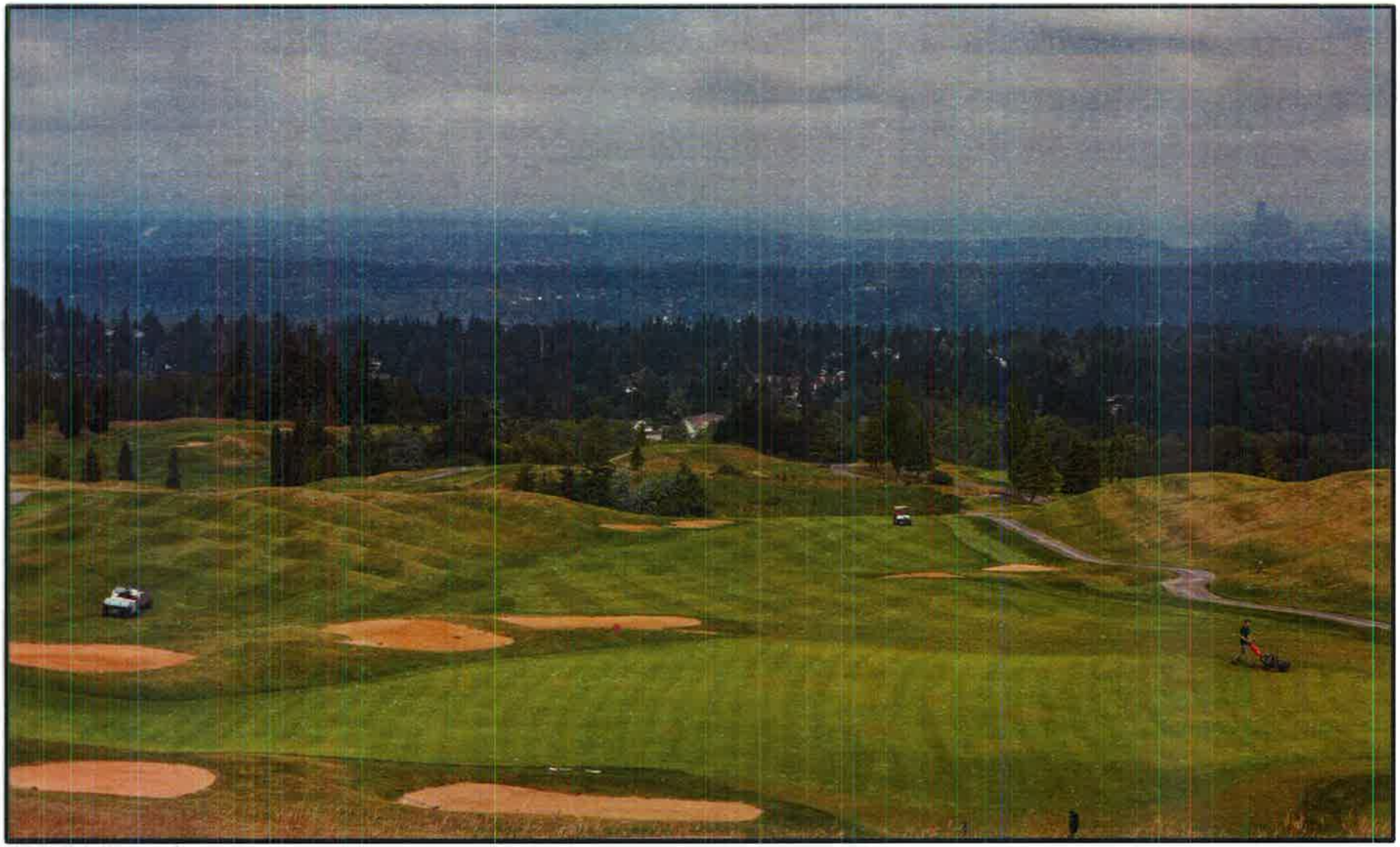
TIM BRADLEY IMAGING

VIEW #38
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA



TIM BRADLEY IMAGING

VIEW #39
TOWER NOT SEEN

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PSERN STATION 9

12412 NEWCASTLE WAY, BELLEVUE, WA

SHEET INDEX

ARCHITECTURAL
T-1 TITLE SHEET
SP-1 GENERAL NOTES
SP-2 SPECIAL INSPECTIONS
SV1 EXISTING SITE SURVEY
C1.1 COVER SHEET AND GENERAL NOTES
C2.1 TEMPORARY EROSION CONTROL PLAN
C3.1 GRADING AND DRAINAGE PLAN
L-1 PROPOSED LANDSCAPE PLAN
A-1.0 ADJACENT PARCEL ZONING & TREE REMOVAL
A-1.1 OVERALL PROPOSED SITE PLAN
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A-2.1 PROPOSED ANTENNA PLANS
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A-4.2 FUEL TANKS AND SIGNAGE DETAILS
A-4.3 DETAILS
A-4.4 SOUND ATTENUATING FENCE ASSEMBLY DETAILS
A-4.5 GENERATOR DETAIL
A-4.6 BATTERY SYSTEM
STRUCTURAL
S3.1 STRUCTURAL NOTES
S3.1 BUILDING AND TANK FOUNDATION PLANS
S3.2 SOUND ATTENUATING FENCE ELEVATION AND DETAIL
MONOPOLE 170'
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170' MONOPOLE
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M1.0 FUEL SYSTEM PIPING PLAN
M1.1 HVAC PLAN
ELECTRICAL
E-1 ONE LINE DIAGRAM & PANEL SCHEDULE
E-2 ELECTRICAL SITE PLAN
E-3 GROUNDING PLAN & NOTES
E-4 GROUNDING DETAILS & NOTES

WASHINGTON STATE CODE COMPLIANCE:

2015 IBC, STANDARDS AND AMENDMENTS, WAC 51-50
2015 IMC, STANDARDS AND AMENDMENTS, WAC 51-52
2015 IFC, STANDARDS AND AMENDMENTS, WAC 51-54
2015 UPC, STANDARDS AND AMENDMENTS, WAC 51-56, 51-57
2014 NEC, STANDARDS AND AMENDMENTS, WAC 296-46B
2015 IECC, WASHINGTON STATE ENERGY CODE, WAC 51-11C

PROJECT SUMMARY

PROJECT MANAGER:
KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT)
401 5TH AVENUE, 8TH FLOOR
SEATTLE, WA 98104
CONTACT: IAN PHUPS
PHONE: 206-263-7846
EMAIL: Ian.Phung@KingCounty.gov

TECHNICAL LEAD:
KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT)
401 5TH AVENUE, 8TH FLOOR
SEATTLE, WA 98104
CONTACT: SEAN DOUGLAS
OFFICE: 206-263-9264
MOBILE: 206-550-1656
EMAIL: Sean.Douglas@KingCounty.gov

CONSTRUCTION MANAGER:
KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT)
401 5TH AVENUE, 8TH FLOOR
SEATTLE, WA 98104
CONTACT: JOHN A. E. WRIGHT
MOBILE: 206-640-0965
EMAIL: John.wright@KingCounty.gov

A&E VENDOR:
OCELLA PACIFIC CORPORATION
5008 6TH AVENUE S., SUITE 202
SEATTLE, WA 98108
CONTACT: MARK RILEY
PHONE: 425-443-2128
EMAIL: MRiley@Ocella.com

PROJECTING CONTACT:
SARAH TOLLEFSON, AICP
OCELLA PACIFIC CORPORATION
5008 6TH AVENUE S., SUITE 202
SEATTLE, WA 98108
OFFICE: 206-420-3604
CELLULAR: 206-979-8268
FAX: 206-420-3636
EMAIL: STollefson@Ocella.com

SITE/RF CONSULTANT:
CAMP + ASSOCIATES, INC
19401 40TH AVE W, SUITE 304
LYNNWOOD, WA 98036
CONTACT: ERIC CAMP
PHONE: 425-340-8282
EMAIL: Eric.Camp@CampNWOOC.com

SITE NAME:	BELLEVUE STATION 9
SITE ADDRESS:	12412 NEWCASTLE WAY BELLEVUE, WA 98006
LAND OWNER:	BELLEVUE FIRE DEPARTMENT 766 BELLEVUE WAY SE BELLEVUE, WA 98004
JURISDICTION:	CITY OF BELLEVUE (KING COUNTY)
PARCEL NUMBER:	195182-0080
PARCEL SIZE:	70,282 SQ. FT. (1.61 ACRES)
ZONING:	R-5
OCCUPANCY:	U (UNOCCUPIED)
CONSTRUCTION TYPE:	V-B
SETBACKS:	REQUIRED SETBACKS WERE BASED ON THE BELLEVUE LAND USE CODE (BLUC) SECTION 20.20.195.E.3 AND SECTION 20.20.010
PROJECT AREA:	4,793.75 SQ. FT.
NEW IMPERVIOUS SURFACES:	2,925 SQ. FT.

PROJECT DESCRIPTION:
THE SCOPE OF WORK INCLUDES:
NEW KING COUNTY PUGET SOUND EMERGENCY RADIO NETWORK (PSERN) 170' TOWER AND ASSOCIATED EQUIPMENT TO PROVIDE EMERGENCY RADIO COMMUNICATIONS TO REACH AND COORDINATE WITH EMERGENCY RESPONDERS.

PUGET SOUND EMERGENCY RADIO NETWORK

(NEW BUILD)

BELLEVUE STATION 9

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

LATITUDE: 47° 32' 30.46" N (NAD 83)
LONGITUDE: 122° 10' 28.61" W (NAD 83)
GROUND ELEVATION: 435.0' (NAVD 88)

CONFIDENTIAL AND PROPRIETARY

SIGNATURE BLOCK

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

AREA MAP

DRIVING DIRECTIONS:
1) DEPART NE1 5TH AVE, SEATTLE, WA ON 5TH AVE S (SOUTH) (0.3 MI.) 2) TURN RIGHT (WEST) ONTO S JACKSON ST. (184 YDS) 3) TURN LEFT (SOUTH-EAST) ONTO 2ND AVE EXT S. THEN IMMEDIATELY BEAR RIGHT (SOUTH) ONTO 4TH AVE S (0.4 MI.) 4) ROAD NAME CHANGES TO WA-519 (0.1 MI.) 5) KEEP STRAIGHT ONTO 4TH AVE S (31 YDS) 6) KEEP RIGHT ONTO RAMP (0.1 MI.) 7) TURN LEFT (EAST) ONTO EDGAR MARTINEZ DR S (32 YDS) 8) TAKE RAMP ONTO I-90 (1.2 MI.) 9) AT EXIT 15A, TURN RIGHT ONTO RAMP (0.3 MI.) 10) TAKE RAMP (RIGHT) ONTO I-405 (0.6 MI.) 11) AT EXIT 10, TURN RIGHT ONTO RAMP (0.3 MI.) 12) KEEP LEFT TO STAY ON RAMP (43 YDS) 13) TURN LEFT (SOUTH) ONTO COAL CREEK PKWY (SE) (0.4 MI.) 14) KEEP STRAIGHT ONTO COAL CREEK PKWY (SE) (0.7 MI.) 15) BEAR RIGHT (SOUTH) ONTO COAL CREEK PKWY (SE) (1.4 MI.) 16) TURN RIGHT (WEST) ONTO NEWCASTLE WAY (SE 85TH WAY) (0.8 MI.) 17) ARRIVE 12412 NEWCASTLE WAY, BELLEVUE, WA 98006

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC
PREPARED BY: LM/MD
APPROVED BY: PH

01/20/17	90% SUBMITTAL
01/31/17	PLAN REVIEW COMMENTS
02/07/17	PLAN REVIEW COMMENTS
02/15/17	ISSUED FOR PERMIT
07/26/17	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
TITLE SHEET

SHEET NUMBER
T-1

2/1/17 set

CONTRACTOR NOTES:

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

GENERAL NOTES:

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

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

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

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

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

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

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

ANTENNA SUPPORTING TOWER IS FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION SUB-CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PERSONNEL AND PROPERTY FROM HAZARDOUS EXPOSURE TO OVERHEAD DANGERS.

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

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

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

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

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

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

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

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

CIVIL NOTES:

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

SUBGRADE AND BASE PREPARATION:

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

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301, A.C.I. 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 POUNDS PER SQUARE INCH AT 28 DAYS. TYPE I-II PORTLAND CEMENT WILL BE USED WITH A MAXIMUM AGGREGATE SIZE OF 3/4" AND 6% ±1% AIR ENTRAINMENT. ALL CONCRETE WILL HAVE A MAXIMUM WATER/CEMENT (W/C) RATIO OF 0.48.
3. ALL CONCRETE FLATWORK SHALL HAVE A STIFF BROOM FINISH AND HAVE A SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, DEFORMED.
5. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILING OF CONC. REINFORCEMENT" (A.C.I. 315-80, REV. 1986)
6. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE CLASS B CONFORMING TO ACI 318-95.
7. A CHAMFER OF 1" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH A.C.I. 301 SECTION 4.2.4 UNLESS OTHERWISE NOTED.
8. CONCRETE WORK SHALL BE COORDINATED WITH THE MECHANICAL, EQUIPMENT, AND ELECTRICAL WORK TO ASSURE THAT ALL AFFECTED PIPES, CONDUITS, INSERTS, ETC. ARE IN PLACE AND VERIFIED BEFORE PLACING CONCRETE.
9. CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE FOLLOWING UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
   - CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: 2 INCHES
   - CONCRETE CAST AGAINST EARTH: 3 INCHES
10. COORDINATE LOCATION OF STEEL ANCHOR BOLTS WITH STEEL FABRICATOR PRIOR TO INSTALLATION IN FIELD.
11. CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL WALL/SLAB PENETRATIONS (PIPING, CONDUIT, ETC.) POWER, TELCO AND COAX TO ENTER SITE UNDER EQUIPMENT SLAB.

METAL NOTES:

PART 1 – GENERAL

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

PART 2 – PRODUCTS

1. MATERIALS:

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

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

PART 3 – EXECUTION

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

ELECTRICAL NOTES:

INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT. ALL LATEST ISSUE. AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S851-401, I.C.E.A. P81-570, & LOCAL PUD.

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

UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE I, CONFORMING TO UL ARTICLE 651: WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED T PIPE: SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS, (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK)

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

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

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

ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-2 OR AS PER NOTE 8 ABOVE.

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

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

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

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

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

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

GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
4. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
5. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS, UNLESS NOTED OTHERWISE.
6. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
7. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
9. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"ø 10-FT. LONG (OR NOTED OTHERWISE ON PLANS), AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
10. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
12. GROUND RING SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
13. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-6" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE.
14. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST: TREAT WITH A COLD GALVANIZED SPRAY.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
16. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM)
17. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
18. CONTRACTOR TO VERIFY CURRENT GROUNDING STANDARDS PRIOR TO CONSTRUCTION.

1 GENERAL NOTES

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES
[illegible] 4?TH AVE. W. SUITE 2?4
LYNNWOOD WA 9803?

PROJECT MANAGER: [illegible]
PREPARED BY: LM/RD
APPROVED BY: PN

△	[illegible]	SITE RELOCATION
△	[illegible]	PLAN REVIEW COMMENTS
△	[illegible]	PLAN REVIEW COMMENTS
	[illegible]	ISSUED FOR PERMIT
	[illegible]	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
GENERAL NOTES

SHEET NUMBER
SP-1

3SC 11/1/16

TABLE 1705.6
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

AISC 360 - TABLE N5.4-1
INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	O
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 PLANE)	O	O
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O

AISC 360 - TABLE N5.6-1
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 TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

AISC 360 - TABLE N5.6-2
INSPECTION TASKS AFTER BOLTING

INSPECTION TASKS AFTER BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	F	F

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 DEFINED BY AWS B5.1 OR INDIVIDUALS QUALIFIED UNDER THE PROVISIONS OF AWS D1.1/D1.1M SUBCLAUSE 8.1.1

O = OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

F = 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.

WABO CERTIFIED SPECIAL INSPECTION AGENCY: 1

KRAZAN & ASSOCIATES, PSC.
4303 188TH STREET SW
LYNNWOOD, WA 98036
PHONE: 425-485-3518

REVISED THIS SHEET 3

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	APPLICABLE STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	–	X	ACI 318: 20.1, 20.2, 20.3.2, 26.6.1–26.6.3	1908.4
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: 26.6.4	–
3. INSPECT ANCHORS IN CAST CONCRETE.	–	X	ACI 318: 17.8.2	–
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: 17.8.2.4 ACI 318: 17.8.2	–
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
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 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X	ACI 318: 26.5.3–26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES, AND B. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	– –	ACI 318: 26.10	–
10. INSPECT ERECTION 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: 26.11.2	–
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	X	ACI 318: 26.11.1.2	–

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.	–	–

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12443 NEWCASTLE WAY
BELLEVUE, WA 98006

PROJECT MANAGER: LC

PREPARED BY: LS/AD

APPROVED BY: PH

02/01/17	PERMIT SUBMISSION
03/14/18	PLAN REVIEW COMMENTS
05/01/18	PLAN REVIEW COMMENTS
06/05/18	ISSUED FOR PERMIT
07/06/18	ISSUED FOR PHASE PERMIT

PLAN REVIEWERS SIGNATURE

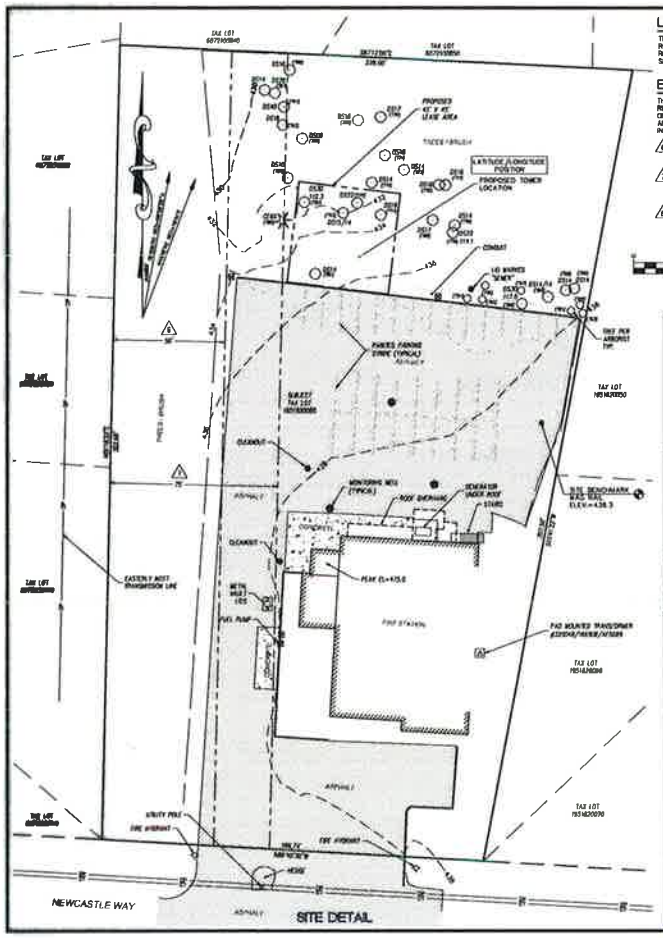
ARCHITECTS STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
SPECIAL INSPECTIONS

SHEET NUMBER
SP-2

1 SPECIAL INSPECTIONS



LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO 4, AS RECORDED IN VOLUME 98 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON

EASEMENTS

⚠ CORRESPONDS WITH ITEM NO. SCHEDULE B' OF TITLE REPORT

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN

⚠ ELECTRIC TRANSMISSION LINE EASEMENT, RECORDING NO 2342929, RECORDS OF KING COUNTY, SHOWN.

⚠ EASEMENT AND THE TERMS AND CONDITIONS FOR A ELECTRIC TRANSMISSION LINE AS PROVIDED IN CITY OF SEATTLE ORDINANCE NO. 35588, ORDINANCE DESCRIBES THE WEST 75 FEET OF THE SUBJECT PROPERTY, SHOWN

⚠ MATTERS CONTAINED IN PLAT OF DEL-MAR WOODS DIV 4, RECORDED IN VOLUME 98, PAGE 38, RECORDS OF KING COUNTY – DOCUMENT CONTAINS INSUFFICIENT INFORMATION TO LOCATE HEREON, NOT SHOWN.

GRAPHIC SCALE

LATITUDE/LONGITUDE POSITION

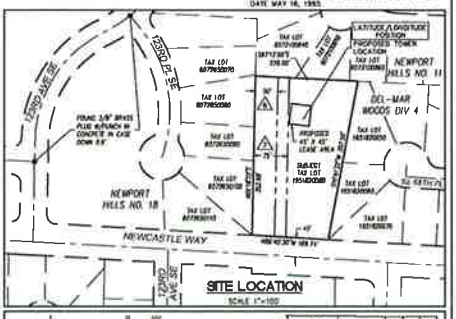
COORDINATE DATA AT PROPOSED TOWER LOCATION
NAD 83
LAT – 47°32'30.48" N
LONG – 122°10'38.61" W
ELEV= 438.8 FEET

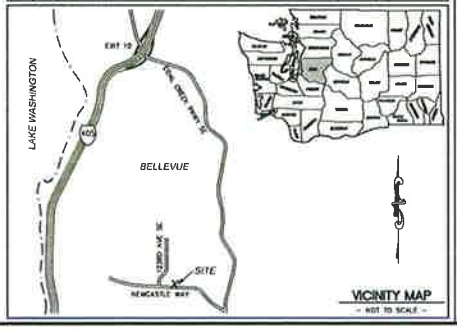
BENCHMARK (S "BLVD" NORTH GPS CORS STATION
ELEV = 51.3'

ELEVATION DERIVED USING GPS. ACCURACY MEETS OR EXCEEDS 1A STANDARDS AS DEFINED ON THE FAA ASAC INFORMATION SHEET 01-003.

NOTES

1) TITLE INFORMATION PER GUARANTEE NO. 2027-1668-418-T28, PROVIDED BY FIDELITY NATIONAL TITLE OF WASHINGTON INC., DATED SEPTEMBER 29, 2015.
2) FIELD WORK CONDUCTED IN JULY, 2015.
3) BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE (1402B3).
4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
5) FEMA DESIGNATION: ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN), PANEL 666 OF 1725, FIRM MAP NUMBER 53033C0666F, EFFECTIVE DATE MAY 16, 1995





LEGEND

- SUBJECT BOUNDARY LINE
- RIGHT-OF-WAY CENTERLINE
- RIGHT-OF-WAY LINE
- ADJACENT BOUNDARY LINE
- SECTIONAL BREAKDOWN LINE
- OHP — OVERHEAD POWER LINE
- UP — BURIED POWER LINE
- GAS — BURIED GAS LINE
- OT — OVERHEAD TELEPHONE LINE
- UT — BURIED TELEPHONE LINE
- W — BURIED WATER LINE
- SS — BURIED SANITARY SEWER
- SD — BURIED STORM DRAIN
- DITCH LINE/FLOW LINE
- ROCK RETAINING WALL
- VEGETATION LINE
- CHAIN LINK FENCE
- WOOD FENCE
- BARBED WIRE/WIRE FENCE

T	TRANSFORMER	◇	FIRE HYDRANT
☼	LIGHT STANDARD	M	GATE VALVE
P	POWER VAULT	■	WATER METER
⊠	UTILITY BOX	Д	FIRE STAND PIPE
ø	UTILITY POLE	□	CATCH BASIN, TYPE I
⟵	POLE GUY WIRE	◎	CATCH BASIN, TYPE II
⊗	GAS VALVE	▲	SIGN
⊡	GAS METER	•	BOLLARD
T	TELEPHONE VAULT	▭	MAIL BOX
⊙	TELEPHONE RISER	224.21	SPOT ELEVATION

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

TREE LEGEND

DECIDUOUS TREE
ALT2 — TRUNK DIAMETER (IN) — TYPE

EVERGREEN TREE
DF18 185 — HEIGHT ADJ IF MEASURED

AL=ALDER
MP=MAPLE
DS=DECIDUOUS
MA=MADRONA
OK=OAK
CH=CHERRY

CE=CEDAR
DF=DOUGLAS FIR
HE=HEMLOCK
PI=PINE
EVG=EVERGREEN

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

SITE INFORMATION

TAX LOT NUMBER	1851820080
SITE ADDRESS	12412 NEWCASTLE WAY BELLEVUE, WA 98006
SITE CONTACT	
PHONE NUMBER	
ZONING	R5 (CITY OF BELLEVUE)
TOTAL LOT AREA	70,389± S.F. (1.61 AC.)
PROJECT AREA	2,826 S.F.

SURVEY REFERENCE

1. PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 98, PAGE 38, RECORDS OF KING COUNTY
3. PLAT OF NEWPORT HILLS NO. 18, RECORDED IN VOLUME 78, PAGE 36, RECORDS OF KING COUNTY

BOUNDARY DISCLAIMER

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

CAUTION

UNDERGROUND UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY BE INCOMPLETE. STATE LAW REQUIRES THAT CONTRACTOR CONTACT THE ONE-CALL UTILITY LOCATE SERVICE AT LEAST 48 HOURS BEFORE STARTING ANY CONSTRUCTION
1-800-424-5555

PUGET SOUND ENERGY
ELECTRIC EVERGREEN

DUNCANSON
Company, Inc.
11130 NE 33rd Place, Suite 170
Bellevue, Washington 98004
Phone: 425.250.4460
Fax: 425.250.4461

SITE
BELLEVUE STA. #9
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
KING COUNTY

FLD. CREW	CR/CT
FLD. BOOK:	370/83
DRAWN BY:	RLP
JOB #	15385.05
DATE	7/15/15

REVISIONS

DATE	DESCRIPTION	BY
2/03/17	REVISE LEASE AREA AND TOWER LOCATION	KJB
10/20/16	ADD TAG NUMBERS AND ANNOTATIONS	KJB
9/19/16	ADD TREES AND TAG NUMBERS	KJB
3/30/16	REVISED LEASE AREA AND TOWER LOCATION	LAC
10/14/15	ADD NEW TITLE REPORT	JA
7/31/15	REVISED LEASE AREA AND TOWER LOCATION, ADDED EASEMENTS	LAC

SHEET TITLE
EXISTING SITE SURVEY
SEC 35, TWP 24 N, RNG 5 E, WM

SHEET NUMBER
SV1

SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.

BELLEVUE STATION 9

12412 NEWCASTLE WAY

BELLEVUE, WA 98006

CAUTION!

CALL BEFORE YOU DIG!

[illegible] 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
C2.1	TEMPORARY EROSION & SEDIMENT CONTROL PLAN
C3.1	GRADING & DRAINAGE PLAN

VICINITY MAP

N.T.S. ★ PROJECT SITE

APPLICANT

[illegible] PACIFIC CORP
1215 4TH AVE, SUITE 1300
SEATTLE, WA
206 [illegible]
CONTACT: SARAH [illegible]

CONSULTANTS

ARCHITECT
CAMP & ASSOCIATES
15403 49TH AVE W, SUITE 104
LYNNWOOD, WA 98036
425 [illegible]
CONTACT: ERIC CAMP

CIVIL ENGINEER
CG ENGINEERING
250 4TH AVE S, SUITE 200
EDMONDS, WA 98020
425.778.8500 FAX 778.5536
CONTACT: JARED UNDERBRINK

SURVEYOR
DUNCANSON COMPANY, INC
145 SW 155TH ST, SUITE 102
SEATTLE, WA 98166
206 244 4141
CONTACT: JON [illegible]

SOIL/GEOTECH ENGINEER
TETRATECH
1575 [illegible] ST, SUITE 2
[illegible], MT 59[illegible]
406 543 3045
CONTACT: [illegible]

LEGAL DESCRIPTION

TRACT A OF [illegible] WOODS, DIVISION NO. 4, AS RECORDED IN VOLUME [illegible] OF PLATS, PAGES 58 AND 59, RECORDS OF KING COUNTY, WASHINGTON. SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BENCHMARK

BENCHMARK IS [illegible] GPS CORS STATION [illegible]

DATUM

NAVD 88

[illegible]

SITE AREAS

PARCEL SIZE	1.61	ACRES
NEW IMPERVIOUS	3,925	SQ FT
REPLACED IMPERVIOUS	0	SQ FT
NEW PLUS REPLACED IMPERVIOUS	3,925	SQ FT

GENERAL NOTES

EROSION CONTROL PLAN NOTES

1. ALL CLEARING & GRADING CONSTRUCTION MUST BE IN ACCORDANCE WITH CITY OF BELLEVUE (COB) CLEARING & GRADING CODE, CLEARING & GRADING DEVELOPMENT STANDARDS, LAND USE CODE, UNIFORM BUILDING CODE, PERMIT CONDITIONS, AND ALL OTHER APPLICABLE CODES, ORDINANCES, AND STANDARDS. THE DESIGN ELEMENTS WITHIN THESE PLANS HAVE BEEN REVIEWED ACCORDING TO THESE REQUIREMENTS. ANY VARIANCE FROM ADOPTED EROSION CONTROL STANDARDS IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE [illegible]

2.–15. [illegible]

STORM DRAINAGE GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE 2011 EDITION OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT ENGINEERING STANDARDS AND THE DEVELOPER EXTENSION AGREEMENT.
2. STORM PIPE SHALL BE PVC CONFORMING TO ASTM D3034 SDR 35 [illegible] ASTM F679 [illegible]. BEDDING AND BACKFILL SHALL BE AS SHOWN IN THE STANDARD DETAILS.
3. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN ESTABLISHED BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE EXCAVATOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. IMMEDIATELY NOTIFY THE ENGINEER IF A CONFLICT EXISTS.
4. THE FOOTING DRAINAGE SYSTEM AND THE ROOF DOWNSPOUT SYSTEM SHALL NOT BE INTERCONNECTED AND SHALL SEPARATELY CONVEY COLLECTED FLOWS TO THE CONVEYANCE SYSTEM OR TO ON-SITE STORMWATER FACILITIES.
5. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO ENSURE THAT SEDIMENT OR OTHER HAZARDOUS MATERIALS DO NOT ENTER THE STORM DRAINAGE SYSTEM IN ACCORDANCE WITH THE SITES APPROVED CSWPPP. FOR ALL CONSTRUCTION DURING THE RAINY SEASON, DOWNHILL BASINS AND INLETS MUST BE PROTECTED WITH CATCH BASIN INSERTS. SIMPLY PLACING FILTER FABRIC UNDER THE GRATES IS NOT ACCEPTABLE.
6. PRIOR TO FINAL INSPECTION AND ACCEPTANCE OF STORM DRAINAGE WORK, PIPES AND STORM DRAIN STRUCTURES SHALL BE CLEANED AND FLUSHED. ANY OBSTRUCTIONS TO FLOW WITHIN THE STORM DRAIN SYSTEM (SUCH AS RUBBLE, MORTAR AND WEDGED DEBRIS) SHALL BE REMOVED AT THE NEAREST STRUCTURE. WASH WATER OF ANY SORT SHALL NOT BE DISCHARGED TO THE STORM DRAIN SYSTEM OR SURFACE WATERS.
7. ENDS OF EACH STORM DRAIN STUB AT THE PROPERTY LINE SHALL BE CAPPED AND LOCATED WITH AN 8' LONG 2" X 4" BOARD, EMBEDDED TO THE STUB CAP AND EXTENDING AT LEAST 3 FEET ABOVE GRADE, AND MARKED PERMANENTLY "STORM". A COPPER 12 GA. LOCATE WIRE FIRMLY ATTACHED. THE STUB DEPTH SHALL BE INDICATED ON THE MARKER.
8. ALL GRATES IN ROADWAYS SHALL BE DUCTILE IRON, BOLT-LOCKING, VANED GRATES PER THE STANDARD DETAILS. STRUCTURES IN TRAFFIC LANES OUTSIDE OF THE CURBLINE WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH ROUND, BOLT-LOCKING SOLID COVERS. ALL STREET STRUCTURES WHICH DO NOT COLLECT RUNOFF SHALL BE FITTED WITH BOLT-LOCKING SOLID COVERS.
9. 3 DIGIT STORM STATIONS ARE REFERENCED FROM NEAREST DOWNSTREAM MANHOLE/CATCH BASIN.
10. ALL TRENCHES SHALL BE COMPACTED, AND HOT MIX ASPHALT IN PLACE IN PAVED AREAS, PRIOR TO TESTING STORM LINES FOR ACCEPTANCE.
11. STORM STUBS SHALL BE TESTED FOR ACCEPTANCE AT THE SAME TIME THE MAIN STORM IS TESTED.
12. THE CONTRACTOR SHALL USE A VACUUM STREET SWEEPER TO REMOVE DUST AND DEBRIS FROM PAVEMENT AREAS AS DIRECTED BY THE ENGINEER. FLUSHING OF STREETS SHALL NOT BE PERMITTED WITHOUT PRIOR CITY APPROVAL.
13. STORM DRAINAGE MANHOLES, STUBS AND FITTINGS SHALL BE CONSTRUCTED USING THE SAME PIPE MATERIAL AND MANUFACTURER. CONNECTIONS BETWEEN STUBS AND THE MAIN LINE WILL BE MADE WITH A TEE FITTING. TEE FITTINGS SHALL BE FROM SAME MANUFACTURER AS PIPE. CUT IN CONNECTIONS ARE ONLY ALLOWED WHEN CONNECTING A NEW STUB TO AN EXISTING MAIN LINE.
14. MANHOLES, CATCH BASINS AND VAULTS ARE CONSIDERED TO BE PERMIT REQUIRED CONFINED SPACES. ENTRY INTO THESE SPACES SHALL BE IN ACCORDANCE WITH CHAPTER 296-809 WAC.
15. CALL 1-800-424-5555, OR 811, 72 HOURS BEFORE CONSTRUCTION FOR UTILITY LOCATES.
16. THE CONTRACTOR SHALL PERFORM A VIDEO INSPECTION AND PROVIDE A DVD OF THE STORM PIPE INTERIOR FOR THE CITY'S REVIEW. THE VIDEO SHALL PROVIDE A MINIMUM OF 14 LINES PER MILLIMETER RESOLUTION AND COVER THE ENTIRE LENGTH OF THE APPLICABLE PIPE. THE CAMERA SHALL BE MOVED THROUGH THE PIPE AT A UNIFORM RATE (≤ 30 FT/MIN), STOPPING WHEN NECESSARY TO ENSURE PROPER DOCUMENTATION OF THE PIPE CONDITION. THE VIDEO SHALL BE TAKEN AFTER INSTALLATION AND CLEANING TO INSURE THAT NO DEFECTS EXIST. THE PROJECT WILL NOT BE ACCEPTED UNTIL ALL DEFECTS HAVE BEEN REPAIRED.
17. CLEARLY LABEL PUBLIC AND PRIVATE SYSTEMS ON THE PLANS. PRIVATE SYSTEMS SHALL BE MARKED "PRIVATE" AND SHALL BE MAINTAINED BY THE PROPERTY OWNER(S).
18. CONTRACTOR SHALL INSTALL, AT ALL CONNECTIONS TO EXISTING DOWNSTREAM MANHOLES/CATCH BASINS, SCREENS OR PLUGS TO PREVENT FOREIGN MATERIALS FROM ENTERING EXISTING STORM DRAINAGE SYSTEM. SCREENS OR PLUGS SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE CONSTRUCTION AND SHALL BE REMOVED ALONG WITH COLLECTED DEBRIS AT THE TIME OF FINAL INSPECTION AND IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BELLEVUE UTILITIES DEPARTMENT.
19. SURFACE RESTORATION OF EXISTING ASPHALT PAVEMENTS SHALL BE AS REQUIRED BY THE RIGHT OF WAY USE PERMIT.
20. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF FIVE FEET (5') HORIZONTAL SEPARATION BETWEEN ALL WATER AND STORM DRAINAGE LINES. ANY CONFLICT SHALL BE REPORTED TO THE UTILITY AND THE DEVELOPER'S ENGINEER PRIOR TO CONSTRUCTION.
21. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT NO CONFLICTS EXIST BETWEEN STORM DRAINAGE LINES AND PROPOSED OR EXISTING UTILITIES PRIOR TO CONSTRUCTION.
22. BEFORE COMMENCEMENT OF TRENCHING, THE CONTRACTOR SHALL PROVIDE FILTER FABRIC FOR ALL DOWNHILL STORM DRAIN INLETS AND CATCH BASINS WHICH WILL RECEIVE RUNOFF FROM THE PROJECT SITE. THE CONTRACTOR SHALL PERIODICALLY INSPECT THE CONDITION OF ALL FILTER FABRIC AND REPLACE AS NECESSARY.
23. MINIMUM COVER OVER STORM DRAINAGE PIPE SHALL BE 2 FEET UNLESS OTHERWISE SHOWN.
24. AVOID CROSSING WATER OR SEWER MAINS AT HIGHLY ACUTE ANGLES. THE SMALLEST ANGLE MEASURED BETWEEN UTILITIES SHOULD BE 45 DEGREES.
25. WHEN WORK IS TO OCCUR IN EASEMENTS, THE CONTRACTOR SHALL NOTIFY THE EASEMENT GRANTOR AND BELLEVUE UTILITIES IN WRITING A MINIMUM OF 48 HOURS IN ADVANCE OF BEGINNING WORK (NOT INCLUDING WEEKENDS OR HOLIDAYS). FAILURE TO NOTIFY GRANTOR AND BELLEVUE UTILITIES WILL RESULT IN A STOP WORK ORDER BEING POSTED UNTIL THE MATTER IS RESOLVED TO THE SATISFACTION OF BELLEVUE UTILITIES. A WRITTEN RELEASE FROM THE EASEMENT GRANTOR SHALL BE FURNISHED TO THE UTILITY INSPECTOR PRIOR TO PERMIT SIGN OFF.
26. THE CONTRACTOR SHALL RESTORE THE RIGHT OF WAY AND EXISTING PUBLIC STORM DRAINAGE EASEMENTS AFTER CONSTRUCTION TO A CONDITION EQUAL OR BETTER THAN CONDITION PRIOR TO ENTRY. THE CONTRACTOR SHALL FURNISH A SIGNED RELEASE FROM ALL AFFECTED PROPERTY OWNERS AFTER RESTORATION HAS BEEN COMPLETED.
27. WHERE A NEW UTILITY LINE CROSSES BELOW AN EXISTING AC MAIN, THE AC PIPE SHALL BE REPLACED WITH DI PIPE TO 3 FEET PAST EACH SIDE OF THE TRENCH AS SHOWN ON STANDARD DETAIL W-3. ALTERNATIVELY, WHERE DIRECTED BY THE UTILITY, THE TRENCH SHALL BE BACKFILLED WITH CONTROLLED DENSITY FILL (CDF, AKA FLOWABLE FILL) FROM BOTTOM OF TRENCH TO BOTTOM OF AC MAIN.

RECOMMENDED CONSTRUCTION SEQUENCE

1. [illegible]
2. POST SIGN WITH NAME AND PHONE NUMBER OF CSWPP/ESC SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN).
3. FLAG OR FENCE CLEARING LIMITS.
4. INSTALL CATCH BASIN PROTECTION IF REQUIRED. INSTALL FLOW CONTROL BMP AREA PROTECTION, IF REQUIRED.
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.)
7. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT. CONSTRUCT SWPPS AND OPERATION OF SCHEDULED CONSTRUCTION ACTIVITY (E.G. CONCRETE RELATED PH MEASURES, STORM UTILITY VAULT OR ROADWAY CONSTRUCTION).
8. MAINTAIN EROSION CONTROL AND SWPPS MEASURES IN ACCORDANCE WITH CITY OF BELLEVUE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
9. RELOCATE EROSION CONTROL AND SWPPS MEASURES OR 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.
10. 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 FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.
11. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.
12. SEED, SOD, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
13. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPS IF APPROPRIATE.

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE	[illegible]	[illegible]
ADJACENT PROPERTY LINE	[illegible]	[illegible]
CENTERLINE	[illegible]	[illegible]
CLEARING LIMITS		[illegible]
SILT FENCE		[illegible]
CONTOUR LINE	[illegible]	[illegible]
FENCE	[illegible]	[illegible]
SANITARY SEWER LINE	[illegible]	[illegible]
MANHOLE	[illegible]	[illegible]
STORM DRAIN MAIN	[illegible]	[illegible]
STORM DRAIN PIPE	[illegible]	[illegible]
ROOF DRAIN	[illegible]	[illegible]
FOOTING DRAIN	[illegible]	[illegible]
PERF./CURTAIN	[illegible]	[illegible]
CATCH BASIN (TYPE 1)	[illegible]	[illegible]
CATCH BASIN (TYPE 2)	[illegible]	[illegible]
CLEANOUT	[illegible]	[illegible]
CLEANOUT AND RIM	[illegible]	[illegible]
GRASS SWALE	[illegible]	[illegible]
SURFACE SWALE	[illegible]	[illegible]
DRAINAGE ARROW	[illegible]	[illegible]
WATER LINE	[illegible]	[illegible]
WATER METER	[illegible]	[illegible]
FIRE HYDRANT	[illegible]	[illegible]
FDC	[illegible]	[illegible]
PIV	[illegible]	[illegible]
GATE VALVE	[illegible]	[illegible]
TEE	[illegible]	[illegible]
90 BEND	[illegible]	[illegible]
THRUST BLOCKING	[illegible]	[illegible]
CAP	[illegible]	[illegible]
CONCRETE PAVEMENT	[illegible]	[illegible]
ASPHALT PAVEMENT	[illegible]	[illegible]
GRAVEL SURFACING	[illegible]	[illegible]
ROCKERY	[illegible]	[illegible]
SPOT ELEVATION	[illegible]	[illegible]
TELEPHONE LINE	[illegible]	[illegible]
POWER LINE	[illegible]	[illegible]
GAS LINE	[illegible]	[illegible]
SIGN	[illegible]	[illegible]

ABBREVIATIONS: [illegible]

King County

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

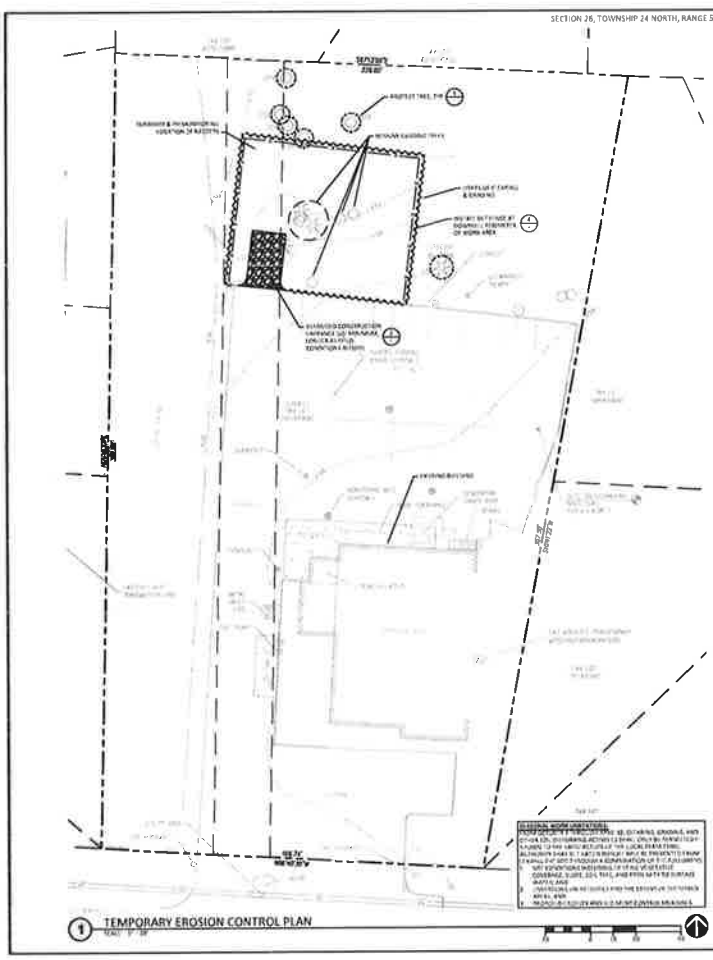
CG PROJECT# 16015.902

PROJECT MANAGER: JU
PREPARED BY: [illegible]
APPROVED BY: [illegible]

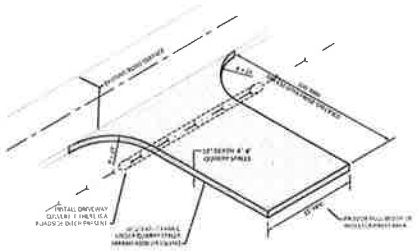
PLAN REVIEWERS SIGNATURE

SHEET NAME: COVER SHEET AND GENERAL NOTES

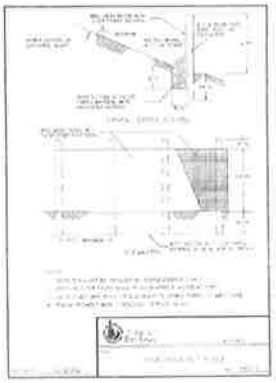
SHEET NUMBER: C1.1



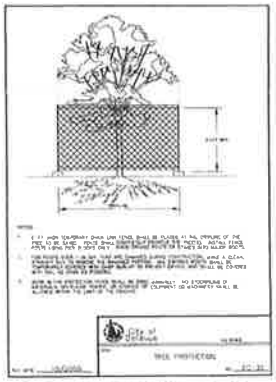
1 TEMPORARY EROSION CONTROL PLAN



2 STABALIZED CONSTRUCTION ENTRANCE



3 CITY OF BELLEVUE STANDARD DETAIL



4 CITY OF BELLEVUE STANDARD DETAIL

King County

BELLEVUE STATION 0

(NEWBURG)

19418 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING

CG PROJECT # 18015.002

PROJECT MANAGER JV

PREPARED BY

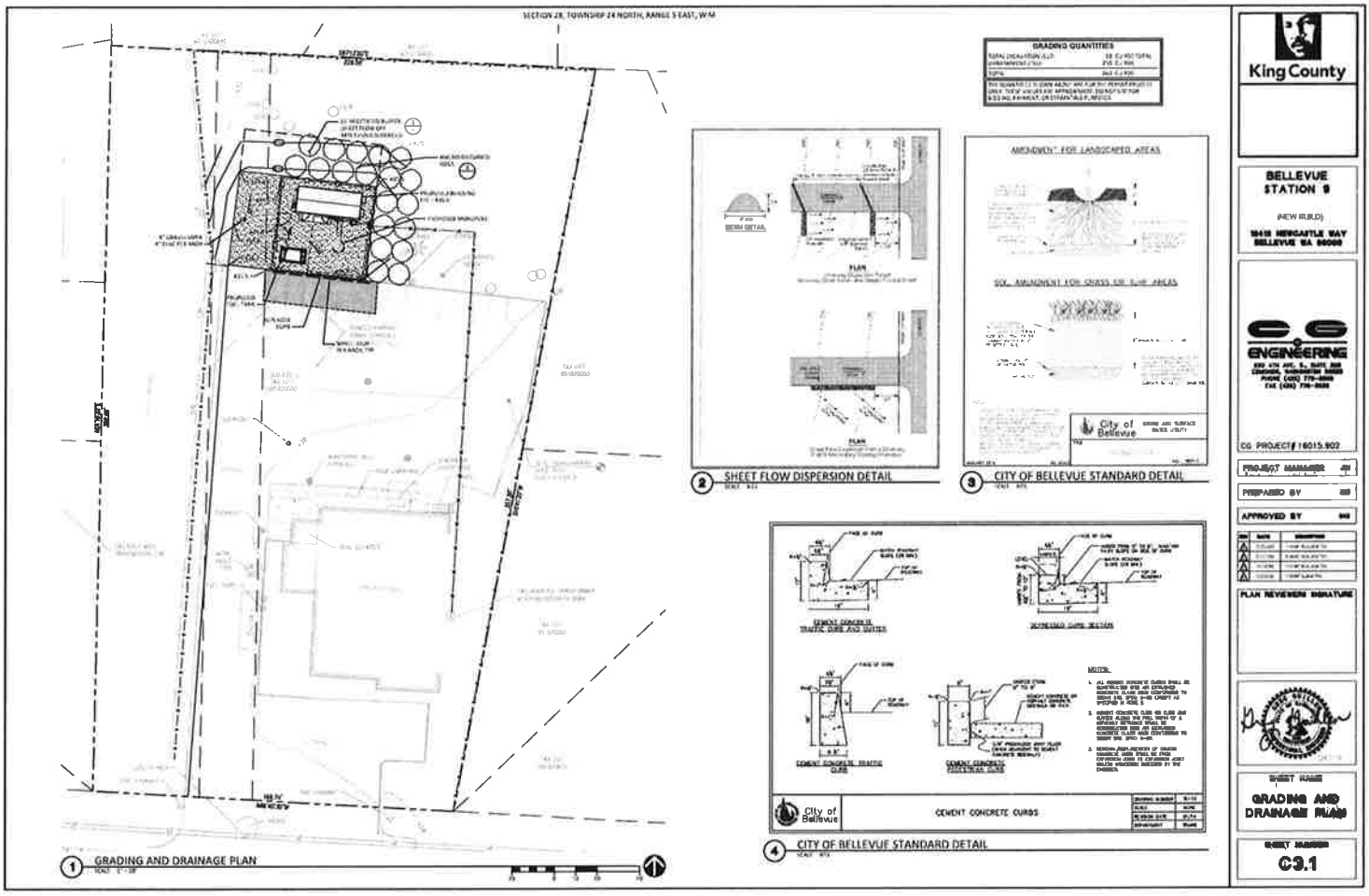
APPROVED BY

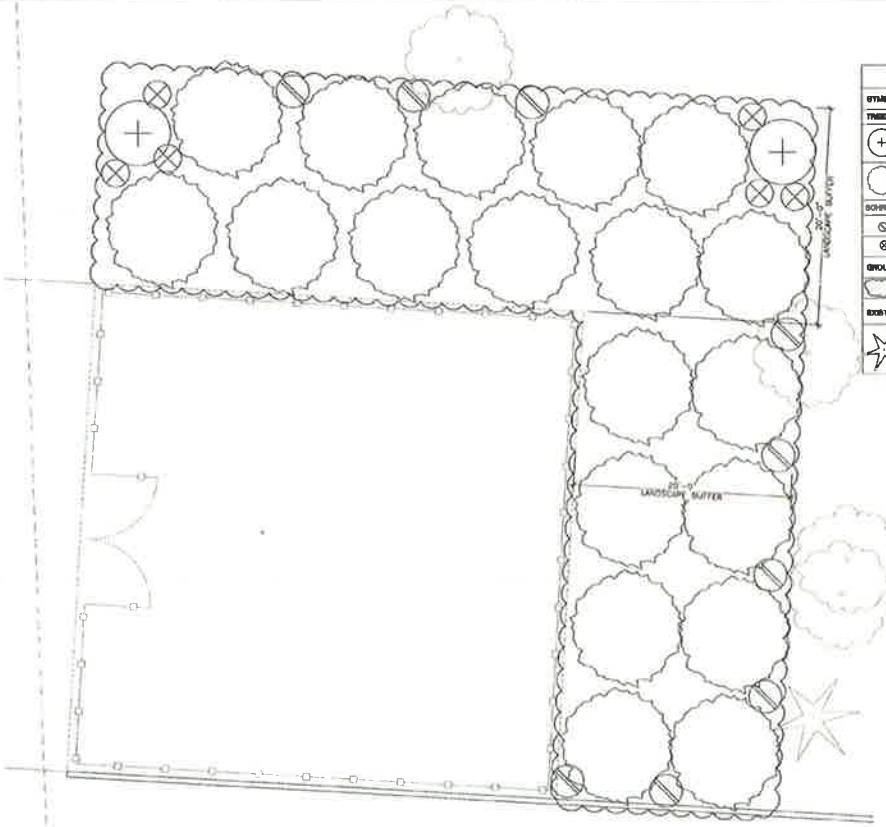
NO	DATE	DESCRIPTION
1		
2		
3		
4		
5		

PLAN REVIEWERS SIGNATURE

SHEET NAME
TEMPORARY EROSION CONTROL PLAN

SHEET NUMBER
C2.1


SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, WM
GRADING QUANTITIES
1 GRADING AND DRAINAGE PLAN
2 SHEET FLOW DISPERSION DETAIL
3 CITY OF BELLEVUE STANDARD DETAIL
4 CITY OF BELLEVUE STANDARD DETAIL
CEMENT CONCRETE CURBS
King County
BELLEVUE STATION 9
(NEW BUILD)
CG ENGINEERING
CG PROJECT # 16015.902
PROJECT MANAGER
PREPARED BY
APPROVED BY
PLAN REVIEWER SIGNATURE
SHEET NAME
GRADING AND DRAINAGE PLAN
SHEET NUMBER
C3.1



PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE/COMMENTS
TREES			
⊕	ACER CIRCINATUM	VINE MAPLE	8'-10' HT. B&B
◯	CALOCEDRUS DECURRENS	INCENSE CEDAR	8'-1" HT B&B
SHRUBS			
⊘	SPIRAEA DOUGLASII	DOUGLAS SPIREA	5 GAL. CONT. SPECIMEN QUALITY
⊗	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	5 GAL. CONT. SPECIMEN QUALITY
GROUNDCOVER			
	GAULTHERIA SHALLON	SALAL	1 GAL. PLANT @ 24" O.C.
EXISTING TREES			
✶	EXISTING TREE TO REMAIN		PRESERVE AND PROTECT

LANDSCAPE NOTES

1. A TEMPORARY IRRIGATION SYSTEM SHALL BE PROVIDED FOR OPERATION THROUGHOUT TWO GROWING SEASONS MAY 1ST TO SEPTEMBER 30TH FOLLOWING PLANT INSTALLATION.
2. PROVIDE 3" BARK MULCH THROUGHOUT ALL PLANTING BEDS
3. AMEND DISTURBED SOILS AS PER CITY STANDARDS (SEE DETAILS SHEET C3.1
4. PRESERVE ALL EXISTING TREES OUTSIDE OF LEASE AREA AND PROPOSED LANDSCAPE BED AREAS (ON TREE PROTECTION FOLLOW CITY DETAIL STANDARDS (SEE SHEET C2.1)
5. PROVIDE MINIMUM 6" OF TOPSOIL THROUGHOUT AND PIT PLANTING SOIL OF 2x SIZE OF ROOT BALL

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
T. SHAWN PARSONS
CERTIFICATE NO. 907

NORTH

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

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1242 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

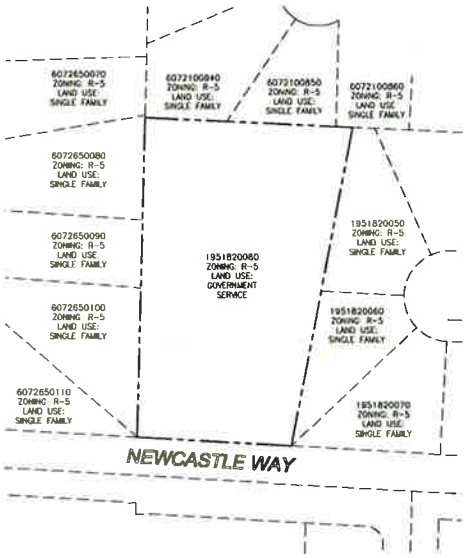
PROJECT MANAGER
PREPARED BY
APPROVED BY

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
PROPOSED LANDSCAPE PLAN

SHEET NUMBER
L-1

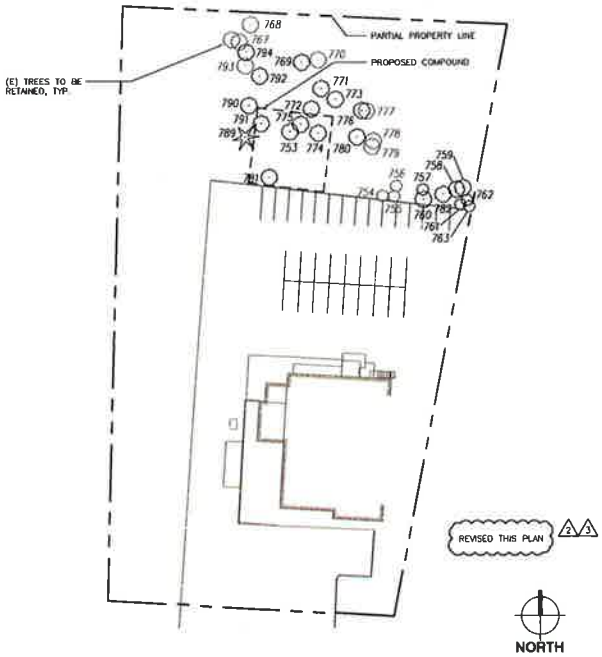


1 ADJACENT PARCEL ZONING AND LAND USE

SCALE: NONE

NO.	TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
753	DECIDUOUS (0515/14)	15"/14"	112.3'	1
757	DECIDUOUS (0530)	30"	117.0'	1
758	DECIDUOUS (0514)	14"	–	1
759	DECIDUOUS (0514)	14"	–	1
760	DECIDUOUS (0514)	14"	–	1
761	DECIDUOUS (0511)	11"	–	1
762	DECIDUOUS (0525)	25"	–	1
763	DECIDUOUS (0526)	26"	–	1
769	DECIDUOUS (0516)	16"	–	1
771	DECIDUOUS (0518)	18"	–	1
772	DECIDUOUS (0514)	14"	–	1
773	DECIDUOUS (0514)	14"	–	1

NO	TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
774	DECIDUOUS (0518)	18"	–	1
775	DECIDUOUS (0522)	22"	–	1
776	DECIDUOUS (0518)	18"	–	1
780	DECIDUOUS (0517)	17"	–	1
781	DECIDUOUS (0514)	14"	–	1
782	DECIDUOUS (0514/14)	14"/14"	–	1
789	CEDAR (CE60)	60"	–	1
790	DECIDUOUS (0510)	10"	–	1
791	DECIDUOUS (0530)	30"	112.3'	1
792	DECIDUOUS (0508)	9"	–	1
794	DECIDUOUS (0540)	40"	–	1
			TOTAL	23



2 TREES TO BE REMOVED

SCALE: NONE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

[redacted] NEWCASTLE WAY
BELLEVUE, WA [redacted]

[redacted]

CAMP+ ASSOCIATES

[redacted]

PROJECT MANAGER: [redacted]

PREPARED BY: [redacted]

APPROVED BY: [redacted]

12/21/17	SITE RELOCATION
02/16/18	PLAN REVIEW COMMENTS
03/27/18	PLAN REVIEW COMMENTS
06/25/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

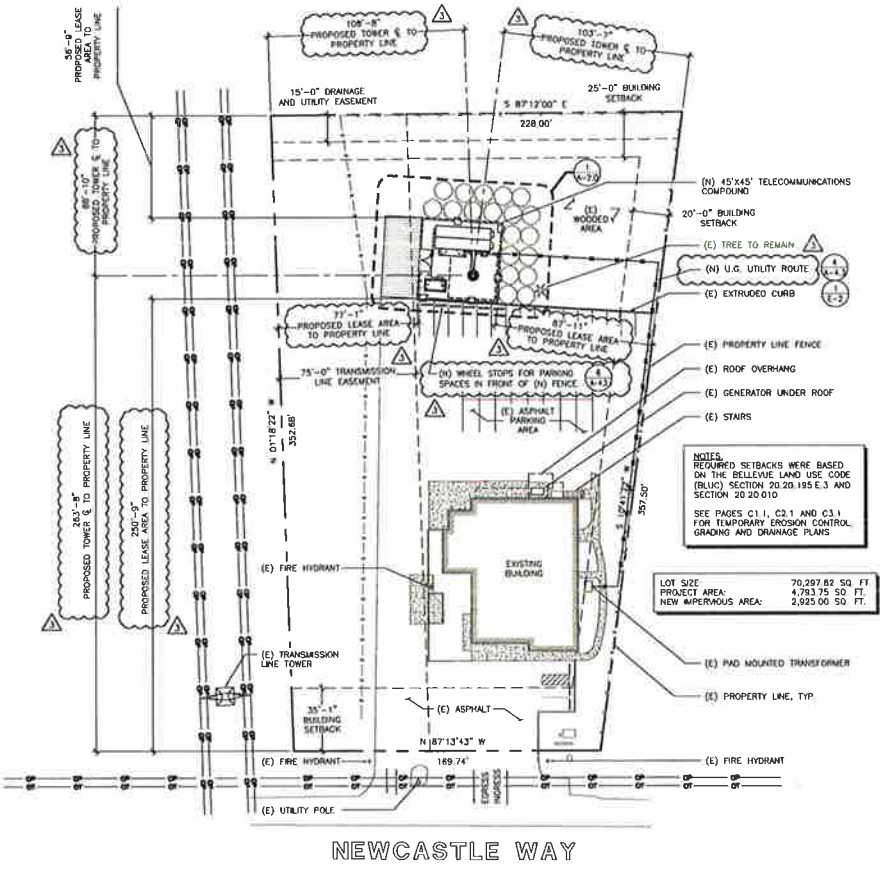
[redacted]

SHEET NAME

ADJACENT PARCEL ZONING & TREE REMOVAL

SHEET NUMBER

A-1.0



1 OVERALL PROPOSED SITE PLAN

SCALE: 1" = 30'-0" (22x34), 1" = 60'-0" (11x17)

DIGALERT
Call Toll Free 811 or
1-800-424-5555
2 Working Days Before You Dig
WWW.CALLBEFOREYOUDIG.ORG

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1243 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC
PREPARED BY: LM/WD
APPROVED BY: PH

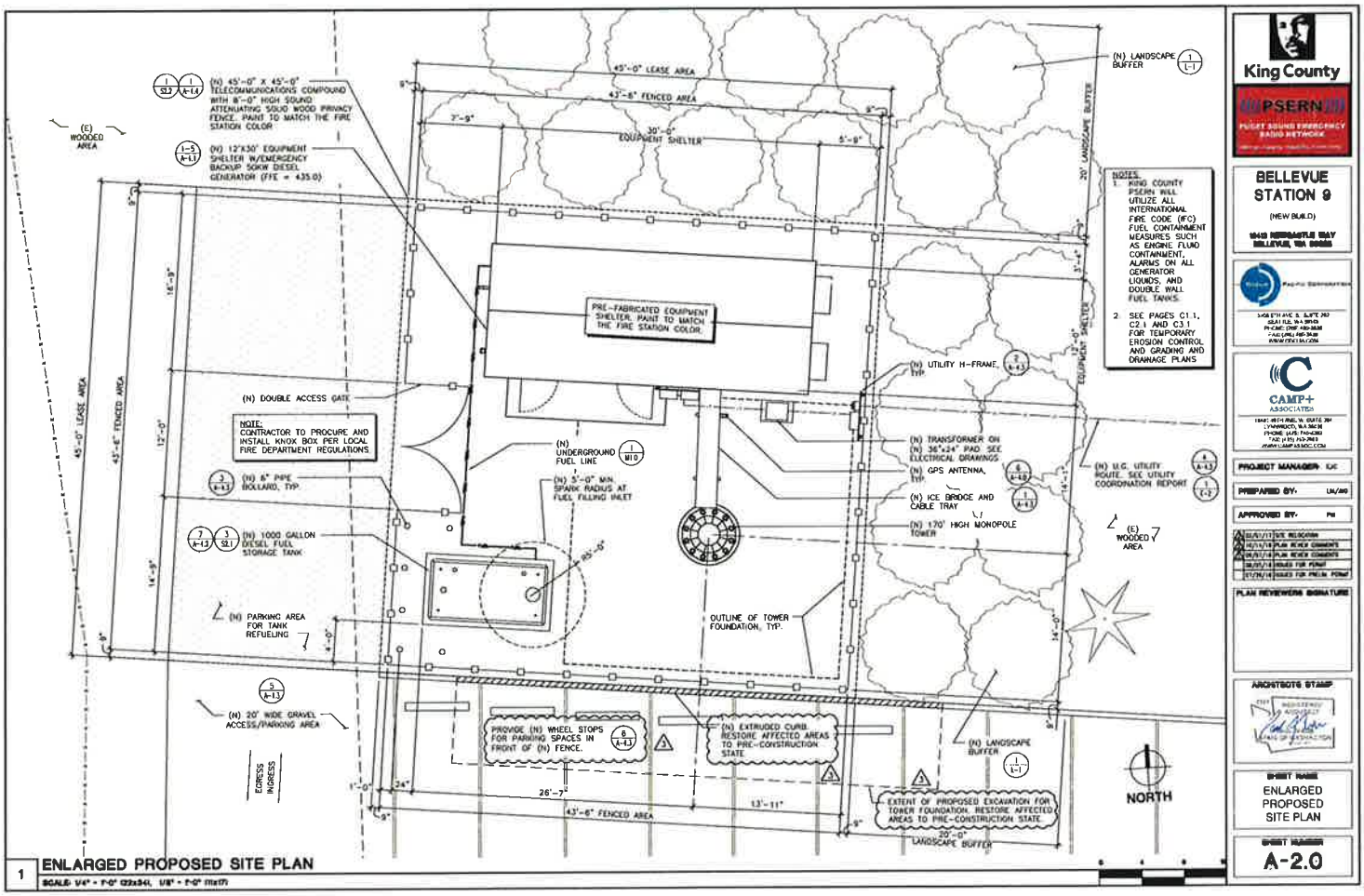
03/31/17	SITE REVISION
10/14/16	PLAN REVIEW COMMENTS
06/07/16	PLAN REVIEW COMMENTS
08/05/14	ISSUED FOR PERMIT
07/28/14	ISSUED FOR PERMIT REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME:
OVERALL PROPOSED SITE PLAN

SHEET NUMBER:
A-1.1



1 **ENLARGED PROPOSED SITE PLAN**

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

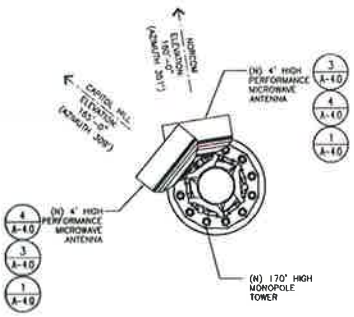
ANTENNA / COAX SCHEDULE

RAD CENTER	PATH	MOUNTING HEIGHT	AZIMUTH	TOWER LEG	QTY.	DESCRIPTION	COAX	COAX LENGTH
165'-0"	CAPITOL HILL	–	308°	–	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±200'
160'-0"	NORCOM	–	351°	–	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±195'
–	–	135'-0"	–	–	2	17'-4" COLLINEAR RX OMNI ANTENNA	AVA5-50FX	±165'
–	–	135'-0"	–	–	2	17'-4" COLLINEAR TX OMNI ANTENNA	AVA5-50FX	±165'

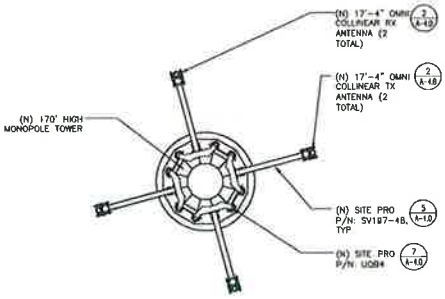
NOTE:
PROVIDE (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM.
SYSTEM SHALL INCLUDE: (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM (TTA).
(4) 7/8" COAXIAL CABLES (2 LINE ARE JUMPERS FROM THE TTA TO ANTENNAS).
(1) 1/2" COAXIAL CABLE (FSJ4-50B).

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.



1 **MW ANTENNA PLAN AT 160' AND 165'**
SCALE: 1/4" = 1'-0" (22x34), 1/8" = 1'-0" (11x17)



2 **ANTENNA PLAN AT 135'**
SCALE: 1/4" = 1'-0" (22x34), 1/8" = 1'-0" (11x17)

NORTH

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1548 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES
1941 40TH AVE. N. SUITE 204
LYNNWOOD, WA 98036
PHONE: (425) 743-4767
FAX: (425) 257-7849

PROJECT MANAGER: EJC
PREPARED BY: EN/MG
APPROVED BY: PN

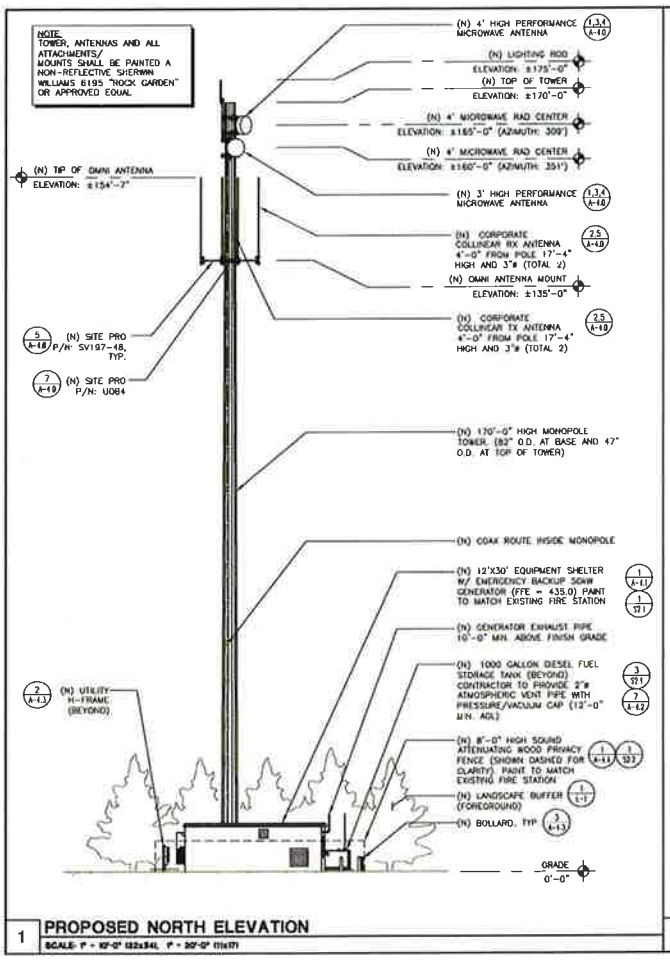
03/01/17	SITE RELOCATION
02/14/18	PLAN REVIEW COMMENTS
08/27/18	PLAN REVIEW COMMENTS
09/25/18	ISSUED FOR PERMIT
01/29/19	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

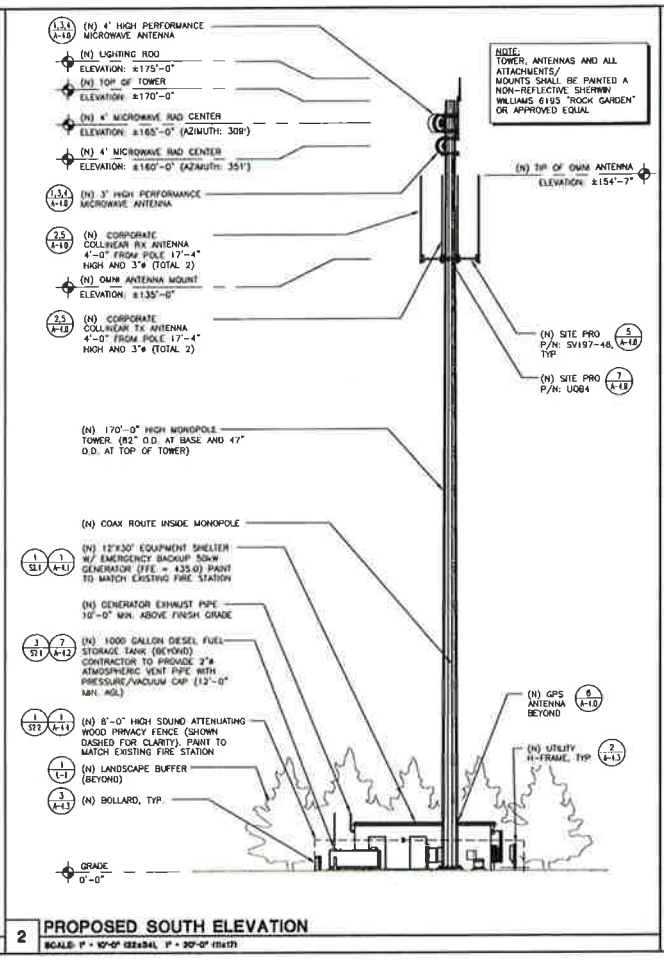
SHEET NAME
PROPOSED ANTENNA PLAN

SHEET NUMBER
A-2.1



1 **PROPOSED NORTH ELEVATION**

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 **PROPOSED SOUTH ELEVATION**

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: CJC

PREPARED BY: LM/RD

APPROVED BY: PR

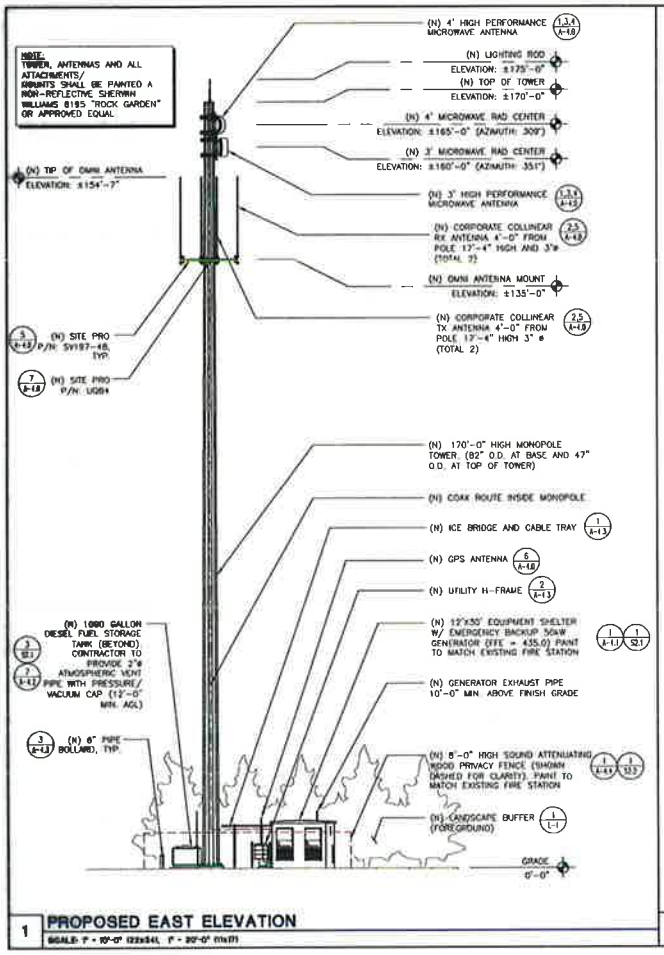
A	02/01/17	90% SUBMITTAL
B	02/14/18	PLAN REVIEW COMMENTS
C	06/07/18	PLAN REVIEW COMMENTS
D	08/06/18	ISSUED FOR PERMIT
E	01/24/19	ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

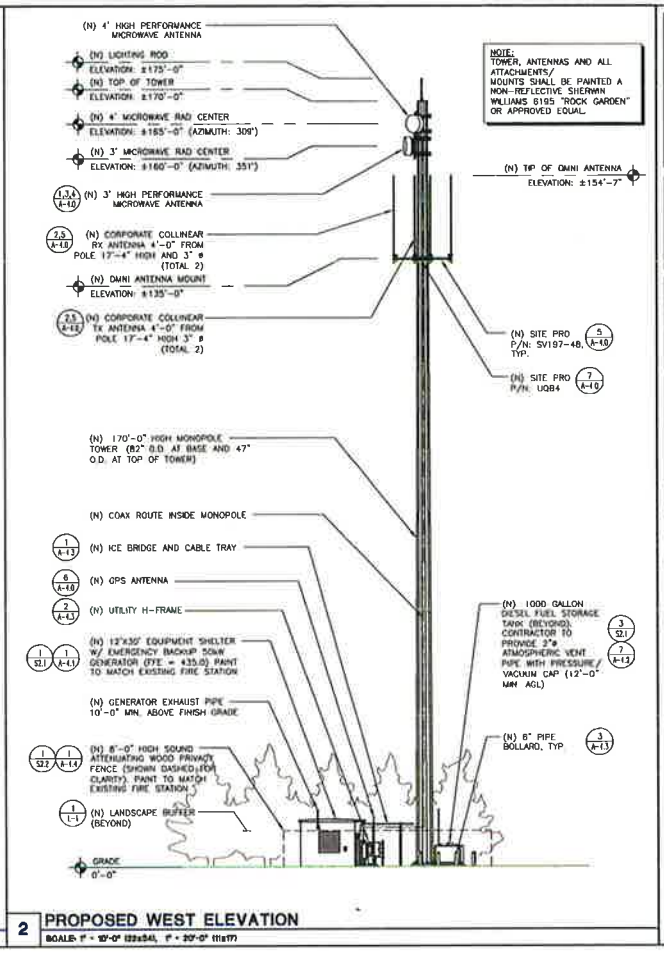
SHEET NAME
PROPOSED ELEVATIONS

SHEET NUMBER
A-3.0



1 PROPOSED EAST ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 PROPOSED WEST ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12410 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ARCHITECTS

PROJECT MANAGER: EJC

PREPARED BY: MN/MO

APPROVED BY: PN

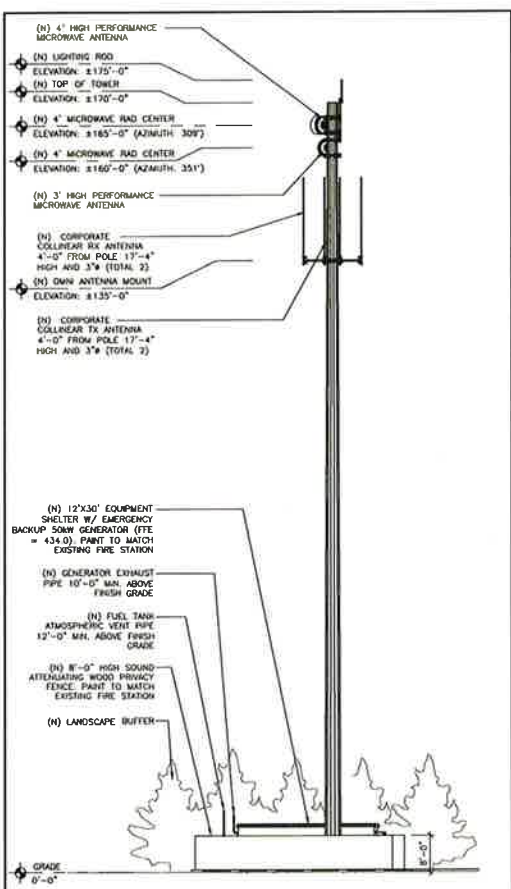
02/21/14	SITE RELOCATION
03/14/14	PLAN REVIEW COMMENTS
04/03/14	PLAN REVIEW COMMENTS
04/25/14	ISSUED FOR PERMIT
07/25/14	ISSUED FOR PERMIT REVISION

PLAN REVIEWERS SIGNATURE

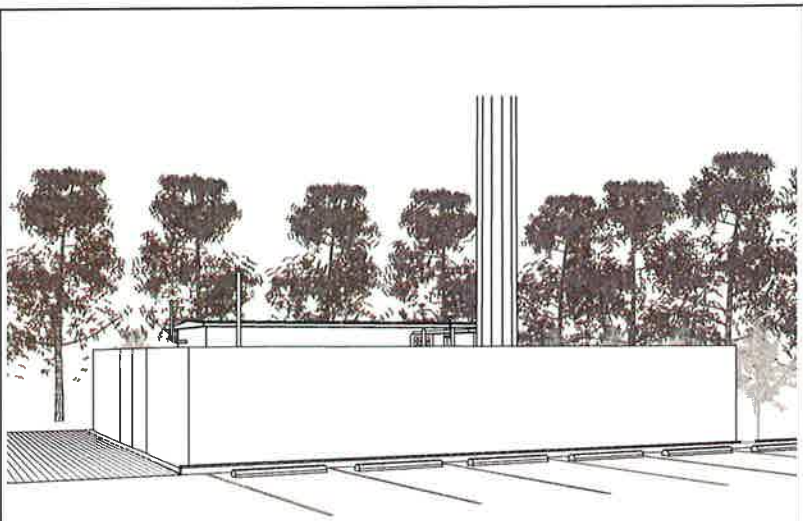
ARCHITECTS STAMP

SHEET NAME
PROPOSED ELEVATIONS

SHEET NUMBER
A-3.1



1 **PROPOSED SOUTH ELEVATION**
NOT TO SCALE



2 **PROPOSED SOUTHWEST VIEW DETAIL**
NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 8
(NEW BUILD)
1845 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: LC
PREPARED BY: LM/JW
APPROVED BY: PK

A	02/01/17	90% SUBMITTAL
B	03/14/17	PLAN REVIEW COMMENTS
C	05/01/17	PLAN REVIEW COMMENTS
	06/02/17	ISSUED FOR PERMIT
	07/28/17	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
PROPOSED SOUTHWEST VIEW DETAIL

SHEET NUMBER
A-3.2

GENERAL NOTES:

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

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

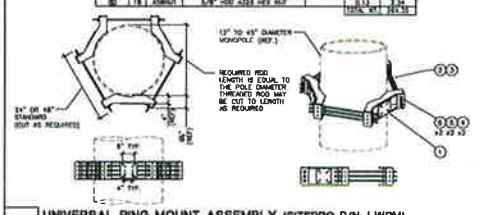
3. CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS TO CONFIRM LENGTHS OF CABLE TRAYS AND ELECTRICAL LINES AND ANTENNA MOUNTING

- GENERAL NOTES

NOT TO SCALE

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
(1)	3	X-LWRM	RING MOUNT WELDMENT		58.18	174.48
(2)	3	ESMK-48	5/8" x 48" THREADED ROD (HDG)	48.00	6.55	19.65
(3)	3	ESMK-24	5/8" x 24" THREADED ROD (HDG)	24.00	3.28	9.84
(4)	15	CWFW	5/8" FLAT WASHER		0.03	0.45
(5)	15	CWLW	5/8" HDG LOCKWASHER		0.03	0.47
(6)	15	ASNUT	5/8" HDG ASSY HEX NUT		0.13	2.04
					TOTAL WT.	204.59

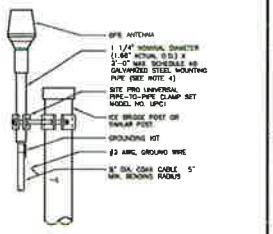


3 UNIVERSAL RING MOUNT ASSEMBLY (SITEPRO P/N: LWRM)

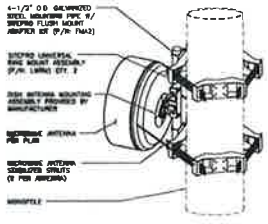
NOT TO SCALE

NOTES:

1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.
3. THE WEIGHT OF THE ANTENNA MOUNT = 8.5 LBS
4. IF ICE BRIDGE OR SIMILAR POST IS NOT GROUNDED, PROVIDE GROUNDING WITH #2 AWG TRANCO BARE COPPER WIRE VERTICALLY BONDED TO LOWER PART OF POST AND CONNECTED TO GROUND RING



6

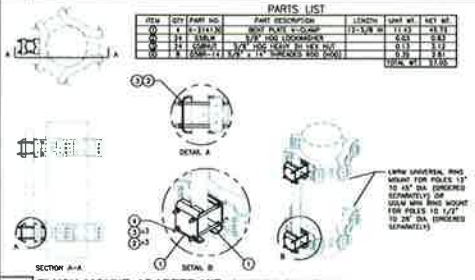


1 DISH ANTENNA MOUNTING

NOT TO SCALE

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
(1)	4	X-TRAY	RING PLATE W/ CLAMP	12-3/8 W.	17.01	68.04
(2)	24	ESMJH	5/8" HDG LOCKWASHER		0.03	0.82
(3)	24	ASNUT	5/8" HDG HEAVY DH HEX NUT		0.13	3.07
(4)	8	ESMK-14	5/8" x 14" THREADED ROD (HDG)		0.78	6.24
					TOTAL WT.	77.95

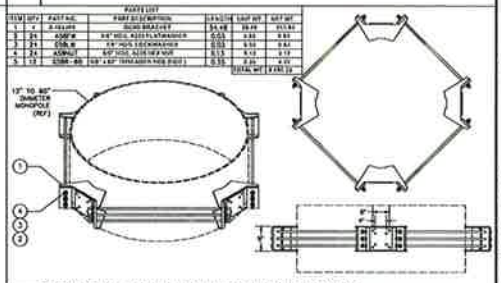


4 FLUSH MOUNT ADAPTER KIT (SITEPRO P/N: FMA2)

NOT TO SCALE

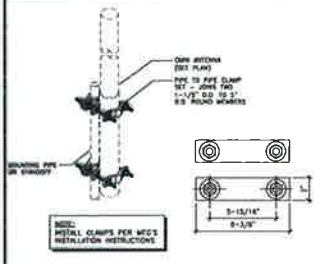
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4					
2	24	ASNUT				
3	24	CWLW				
4	24	CWFW				
5	12	ESMK-48				
					TOTAL WT.	



7 SITE PRO QUAD UNIVERSAL RINGMOUNT UQB4 DETAIL

NOT TO SCALE

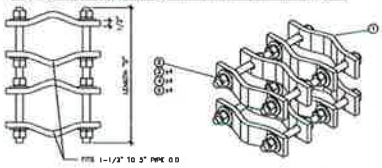


PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2		CLAMP, PIPE TO PIPE, 1.5" - 3.0"	8	7.65	15.30
2	1	ESMBOLT	5/8" HDG BOLT, 2" LONG		0.13	0.26
3	1	ESMNUT	5/8" HDG LOCKWASHER		0.03	0.06
4	2	ASNUT	5/8" HDG ASSY HEX NUT		0.13	0.26

VARIABLE PARTS TABLE

ASSEMBLY "A"	QTY "B"	PART "C"	LENGTH "D"	UNIT WT "C"	UNIT WT "D"	TOTAL WEIGHT

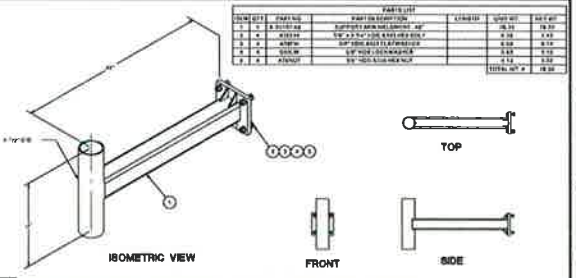


2 OMNI ANTENNA MOUNTING WITH SITE PRO DCPXK PIPE TO PIPE CLAMP

NOT TO SCALE

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4				4.58	18.32
2	4				0.13	0.52
3	4				0.03	0.12
4	4				0.03	0.12
5	4				0.13	0.52
					TOTAL WT. #	19.60



5 SITE PRO 48" SUPPORT ARM SV197-48 DETAIL

NOT TO SCALE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

18412 NEWCASTLE WAY
BELLEVUE, WA 98008

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC

PREPARED BY: LH/MG

APPROVED BY: PN

03/01/17	SITE RELOCATION
10/14/16	PLAN REVIEW COMMENTS
06/17/16	PLAN REVIEW COMMENTS
06/06/16	ISSUED FOR PERMIT
01/29/16	ISSUED FOR PREUM PERMIT

PLAN REVIEWERS SIGNATURE

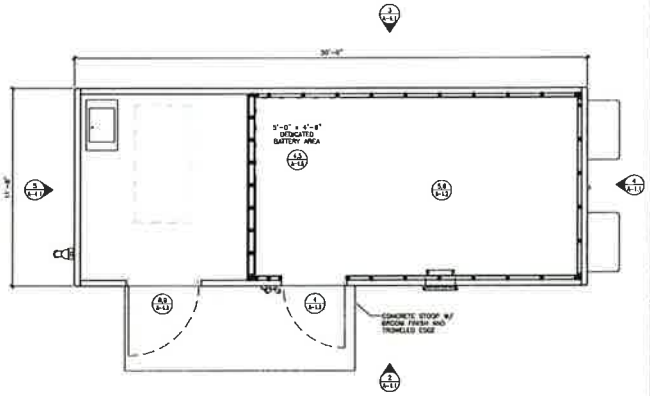
ARCHITECTS STAMP

SHEET NAME

ANTENNA MOUNTING DETAILS

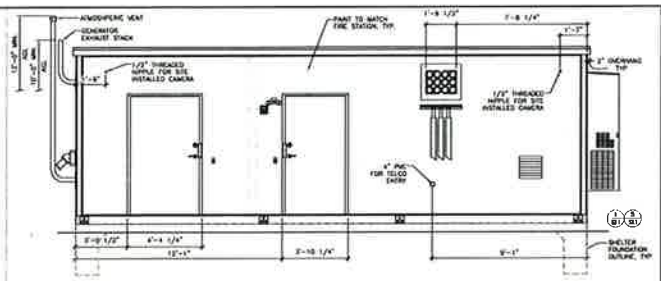
SHEET NUMBER

A-4.0

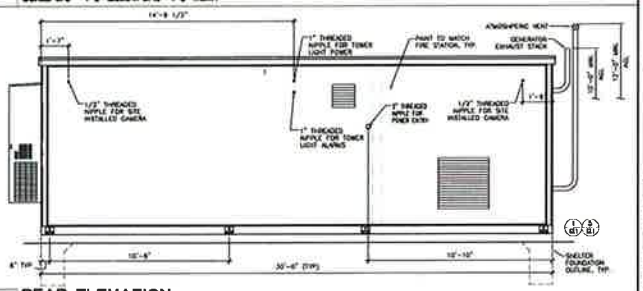


NOTES:
1. SHELTER IS OWNER FURNISHED CONTRACTOR INSTALLED (O.F.C.I.)
2. ALL MEASUREMENTS SHALL BE VERIFIED WITH PREFABRICATED SHELTER SHOP DRAWING PRIOR TO ANY CONSTRUCTION WORK OR COORDINATION.
3. REFER TO STRUCTURAL DRAWINGS FOR SHELTER FOUNDATION AND SHELTER ANCHORING TO FOUNDATION DETAILS
4. CONTRACTOR TO USE EXOTHERMIC WELD AT ALL GROUND TAILS FROM BUILDING TO GROUND RING, SEE ALSO GROUNDING PLAN

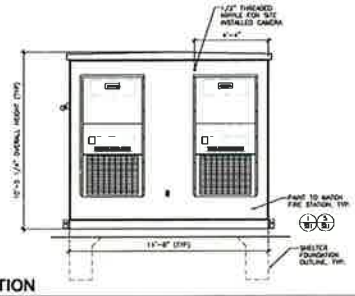
1 TYPICAL SHELTER PLAN VIEW
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)



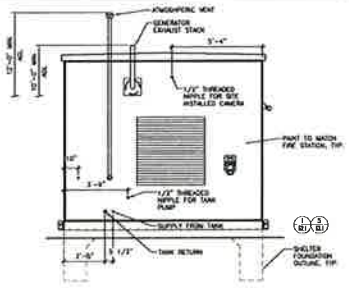
2 FRONT ELEVATION
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)



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



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



5 LEFT ELEVATION
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12402 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: KC
PREPARED BY: LH/MD
APPROVED BY: PM

02/01/17	SITE REVISION
10/14/16	PLAN REVIEW COMMENTS
05/17/16	PLAN REVIEW COMMENTS
04/05/16	ISSUED FOR PERMIT
07/06/15	ISSUED FOR PRELIM. PERMIT

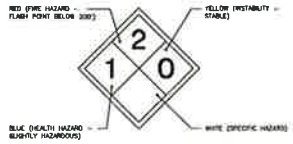
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
SHELTER DETAILS

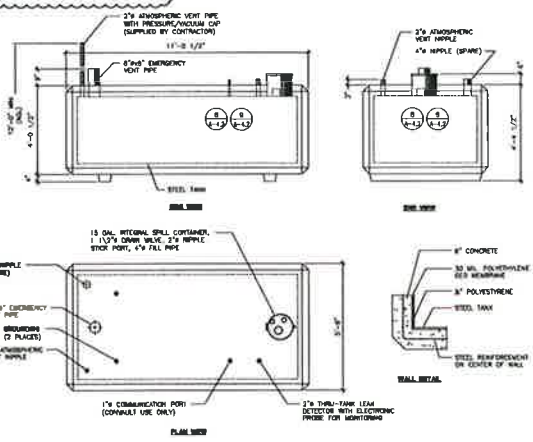
SHEET NUMBER
A-4.1

8 FLAMMABLE LIQUIDS SIGN
NOT TO SCALE



8 HAZARDOUS MATERIAL CLASSIFICATION SIGN (DIESEL)
NOT TO SCALE

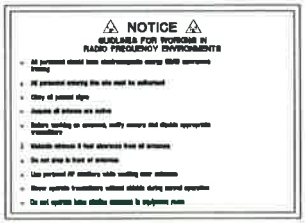
4 RF WARNING SIGN
NOT TO SCALE



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 RESIST 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 AND 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 BARRS (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



6 RF NOTICE SIGN
NOT TO SCALE

1 NOT USED

2 NOT USED

3 NOT USED

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1642 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: LJC
PREPARED BY: LM/AG
APPROVED BY: PN

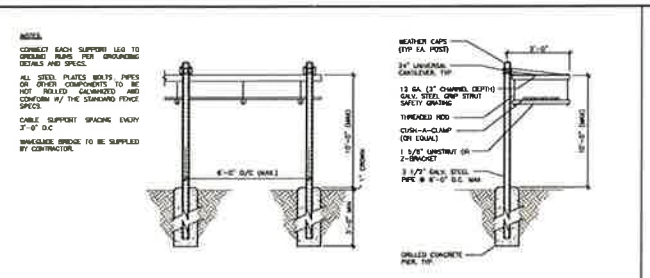
A	05/01/17	SITE RELOCATION
B	10/14/16	PLAN REVIEW COMMENTS
C	08/07/16	PLAN REVIEW COMMENTS
	06/06/16	ISSUED FOR PERMIT
	07/06/16	ISSUED FOR PERMIT REVISE

PLAN REVIEWERS SIGNATURE

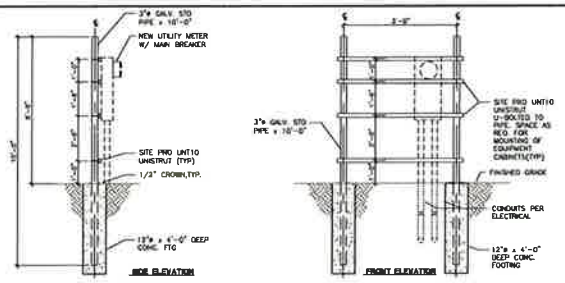
ARCHITECTS STAMP

SHEET NAME
FUEL TANK AND SIGNAGE DETAILS

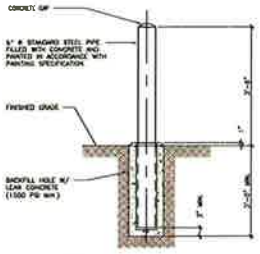
SHEET NUMBER
A-4.2



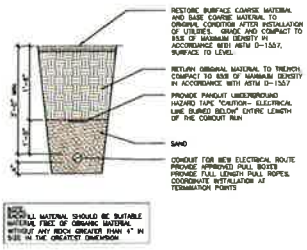
1 **ICE BRIDGE DETAIL**
NOT TO SCALE



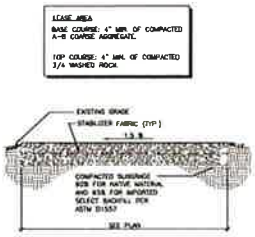
2 **UTILITY RACK DETAIL**



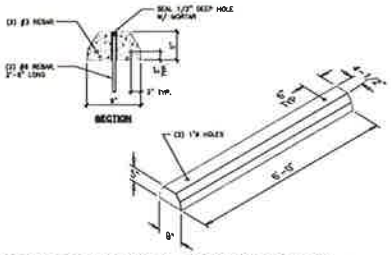
3 **BOLLARD DETAIL**
NOT TO SCALE



4 **ELECTRICAL TRENCH DETAIL**
NOT TO SCALE



5 **GRAVEL PAVING DETAIL**
NOT TO SCALE



6 **PRECAST CONCRETE WHEEL STOP** ⚠1
NOT TO SCALE

7 **NOT USED**

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
13418 NORTHRUP WAY
BELLEVUE, WA 98005

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC
PREPARED BY: LM/MG
APPROVED BY: PN

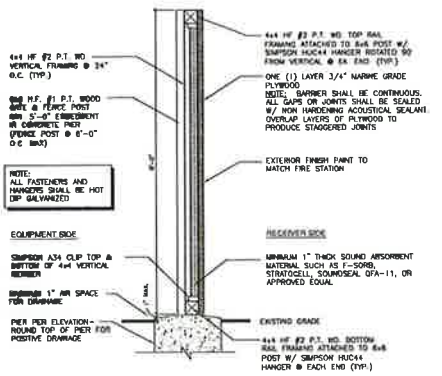
1	02/01/17 SITE RELOCATION
2	02/14/17 PLAN REVIEW COMMENTS
3	05/01/17 PLAN REVIEW COMMENTS
	06/05/17 ISSUED FOR PERMIT
	07/28/17 ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

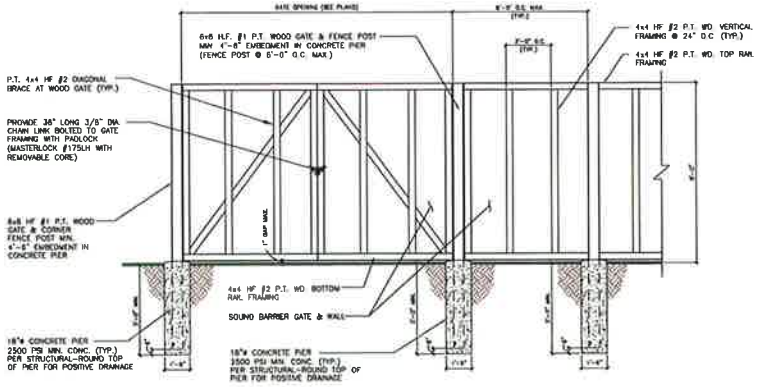
ARCHITECTS STAMP

SHEET NAME
DETAILS

SHEET NUMBER
A-4.3



SECTION



ELEVATION

NOTES:

1. MATERIALS SUCH AS SIDING MAY BE ADDED TO THE EXTERIOR SIDE OF THE BARRIER WALL CONSTRUCTION BUT MAY NOT SUBSTITUTE FOR REQUIRED BARRIER MATERIALS SUCH AS PLYWOOD OR SHEET METAL.
2. SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION

1 SOUND ATTENUATING FENCE ASSEMBLY DETAILS

NOT TO SCALE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

1248 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+

PROJECT MANAGER: CJC

PREPARED BY: LK/KO

APPROVED BY: PR

05/01/17	SITE REVISION
07/17/18	PLAN REVIEW COMMENTS
09/27/18	PLAN REVIEW COMMENTS
12/05/18	ISSUED FOR PERMIT
01/30/19	ISSUED FOR PRELIM. PERMIT

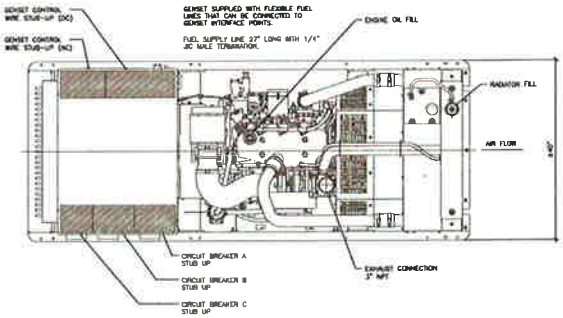
PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

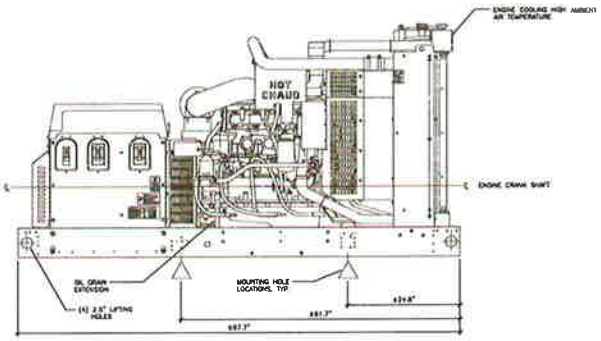
SHEET NAME
SOUND ATTENUATING FENCE ASSEMBLY DETAILS

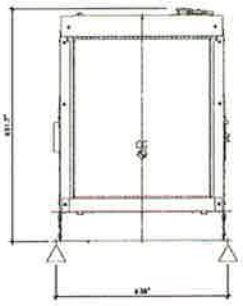
SHEET NUMBER
A-4.4



MANUFACTURERS SPECS	
MANUFACTURER	CUMMINS
MODEL	C50 D6
DIMENSION	97.7"(L) x 40"(W) x 51.7"(H)
POWER	STANDBY KW (HZ): 50 (60)
FUEL	DIESEL
WEIGHT DRY	1434 LBS
SPL AT 23 FEET dB(A)	80.9

NOTES:
1. OWNER SHALL UTILIZE ALL INTERNATIONAL FIRE CODE (IFC) FUEL CONTAINMENT MEASURES SUCH AS ENGINE FLUID CONTAINMENT ALARMS ON ALL GENERATOR LIQUIDS, AND DOUBLE WALL FUEL TANKS
2. GENERATOR MUST BE SCHEDULED TO COMPLETE MAINTENANCE OPERATION DURING DAYTIME HOURS.
3. INFORMATION OBTAINED FROM MANUFACTURER PUBLISHED DATA SHEET. CONTRACTOR TO VERIFY BEFORE ORDERING ANY PARTS.





ADDED SHEET 3

1 CUMMINS 50KW OPEN GENSET
NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1543 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC
PREPARED BY: LH/MO
APPROVED BY: PR

03/01/19	SITE RELOCATION
05/31/18	PLAN REVIEW COMMENTS
06/07/18	PLAN REVIEW COMMENTS
06/20/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRICING PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

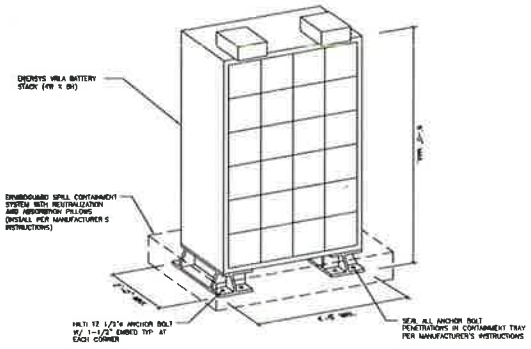
SHEET NAME
GENERATOR DETAIL

SHEET NUMBER
A-4.5

BATTERY SYSTEM DATA

BATTERY MFG.:	NO. OF CELLS PER MODULE: 1
BATTERY TYPE: VRLA (VALVE REGULATED LEAD ACID)	ELECTROLYTE VOLUME PER CELL (MIN.): 3.1L
NO. OF BATTERIES: 24 (16 + 8)	ELECTROLYTE VOLUME TOTAL (MIN.): 99.2L
MODEL NUMBER: EnerSys DT	BATTERIES: 16.5" D x 11.5" S x 10.5" H
ENERGY IN CAPACITY (10H):	TOTAL WEIGHT (FULLY AS INSTALLED): 1,776 LBS.
NFPA SPILLABLE CLASSIFICATION: UNKNOWN	
REFERENCE NFPA 70: 1999	

NOTE: REFER TO SEPARATE 8" LABEL AND CALCULATION SHEET FOR BATTERY SYSTEM DATA AND CALCULATION METHODOLOGY INFORMATION.



3 BATTERY SYSTEM
NOT TO SCALE

BATTERY REQUIREMENTS

REQUIREMENTS	NON-RECOMBINANT: FLOODED LEAD ACID BATTERIES	NON-RECOMBINANT: FLOODED NICKEL-CADMIUM (NI-CD) BATTERIES	RECOMBINANT: VALVE REGULATED LEAD ACID (VRLA) BATTERIES	RECOMBINANT: LITHIUM-ION BATTERIES
RELIEF VALVE	N/A	N/A	YES (VRLA)	N/A
COMMENTS: RELIEF VALVE OPERATES AT 2-3 PSI AND IS COMPLETE WITH INTERNAL FLAME ARRESTOR.				
THERMAL RUNAWAY ENVIRONMENT	N/A	N/A	YES (VRLA)	N/A
COMMENTS: BATTERY SYSTEM SHALL BE INSTALLED WITH BATTERY MONITORING SYSTEM (DETAIL 8/A-4.6) FOR THERMAL RUNAWAY PREVENTION AND PROTECTION. (MFR. BY CELLWATCH OR APPROVED EQUAL ACCEPTED BY THE CITY OF BELLEVUE FIRE MARSHAL.)				
SPILL CONTROL	N/A	N/A	YES (VRLA)	N/A
COMMENTS: PROVIDE ENVIROGUARD SPILL CONTAINMENT SYSTEM WITH NEUTRALIZATION AND ABSORBENCY PILLOWS (INSTALL PER MANUFACTURER'S INSTRUCTIONS).				
NEUTRALIZATION	N/A	N/A	YES (VRLA)	N/A
COMMENTS: NEUTRALIZATION AND ABSORBENCY PILLOWS SHALL BE PROVIDED WITH ENVIROGUARD SPILL CONTAINMENT SYSTEM (INSTALL PER MANUFACTURER'S INSTRUCTIONS).				
VENTILATION	N/A	N/A	YES (SMALL SHELTER)	N/A
COMMENTS: 1085 CFM EXHAUST FAN IS PROVIDED WITH SHELTER				
SIGNAGE	N/A	N/A	YES (NFPA 70)	N/A
COMMENTS: CODE SPECIFIED BATTERY ROOM SAFETY SIGNAGE, HAZARDOUS MATERIAL SIGNAGE (4 DIAMOND) AND THERMAL RUNAWAY PROCEDURE SIGNAGE SHALL ALL BE CLEARLY POSTED IN ALL BATTERY AREAS.				
SEISMIC PROTECTION	N/A	N/A	YES (IBC)	N/A
COMMENTS: REFER TO BATTERY SYSTEM DETAIL (1)/A-4.6) FOR ANCHORAGE.				
SMOKE DETECTION	N/A	N/A	YES (NFPA 76)	N/A
COMMENTS: AUTOMATIC SMOKE DETECTION AND FIRE SUPPRESSION SYSTEM (FM-200) TO BE INSTALLED				

NOTE: CODE REFERENCES ARE TO 2013 INTERNATIONAL FIRE CODE FOR STATIONARY STORAGE BATTERY SYSTEMS.

1 BATTERY REQUIREMENTS
-

4 CORROSIVE LIQUIDS SIGN
NOT TO SCALE

Thermal Runaway Procedure Posting
Attachment A to Thermal Runaway Procedure

Handling Overheating Batteries or Thermal Runaway

(A 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 or

- There is a fire or smoke
- If the fire gloves are smoking
- If there is a strong rotten egg (hydrogen sulfide) odor

Important: Take no action that could produce a spark and ignite ethereal 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
- Perform always cannot either by turning off enough rectifiers so that the load locally is restored or by turning the float voltage
- Increase ventilation in the battery area if possible
- If there is a spill or other hazardous situation call the Environmental Hotline at 1-800-424-8802

Do not overreact to battery overcycles. Boring batteries release potentially lethal concentrations of toxic gases or other chemicals and should be handled by trained Fire Suppression Officers experienced with appropriate protective clothing and Self-Contained Breathing Apparatus (SCBA)

5 THERMAL RUNAWAY PROCEDURE
NOT TO SCALE

CELLWATCH

6 BATTERY MONITORING SYSTEM
-

ADDED SHEET 1

2 NOT USED
-

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1642 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ARCHITECTS
19421 40TH AVE. W SUITE 204
LYNNWOOD, WA 98036
PHONE: (425) 743-0787
FAX: (425) 743-0825
WWW.CAMPARCH.COM

PROJECT MANAGER: EJC
PREPARED BY: LM/AC
APPROVED BY: PN

03/01/17	50% SUBMISSION
10/11/16	PLAN REVIEW COMMENTS
08/27/16	PLAN REVIEW COMMENTS
06/03/16	ISSUED FOR PERMIT
01/28/16	ISSUED FOR PRICING PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
BATTERY SYSTEM

SHEET NUMBER
A-4.6

STRUCTURAL NOTES

[illegible]

CODE

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

DESIGN LOADS

DEAD LOADS
BUILDING WEIGHT [illegible]

LIVE LOADS
ROOF (SNOW LOAD) 60.5 PSF
ROOF LIVE 150 PSF [illegible]

[illegible]

EARTHQUAKE LOADS

EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7 [illegible]

[illegible]	D
[illegible]	1.419
[illegible]	0.541
[illegible]	0.946
[illegible]	0.541
[illegible]	III
[illegible]	1.5
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE RESISTING SYSTEM	ORDINARY REINFORCED CONC SHEAR WALLS
RESPONSE MODIFICATION FACTOR, (R)	4.0
SEISMIC RESPONSE COEFFICIENT (Cs)	0.355

[illegible]

BASE SHEAR (V), V = CsW [illegible] [illegible] KIPS (ASD)

WIND LOADS

BASIC WIND SPEED (3 SECOND GUST)	[illegible] MPH
EXPOSURE	B
K_{zt}	1.0

[illegible]

STATEMENT OF SPECIAL INSPECTIONS

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

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			
EXCAVATION & FILL		X	[illegible]
FOUNDATION BEARING CAPACITY VERIFICATION		X	
CONCRETE			
REINFORCING PLACEMENT		X	
ANCHOR BOLTS		X	
CONCRETE PLACEMENT	X		
[illegible]		X	[illegible]
TESTING FOR [illegible]	X		

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

FOUNDATIONS

SOILS REPORT	REPORT NO.	114 570374
	PREPARED BY	TETRA TECH
	DATED	NOV 16, 2015

ALLOWABLE SOIL PRESSURE [illegible]

LATERAL EARTH PRESSURE
PASSIVE 350 PCF
COEFFICIENT OF FRICTION 0.45

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR 12" OF COMPACTED STRUCTURAL FILL AS REQUIRED AND AT LEAST 18" BELOW ADJACENT EXTERIOR 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 [illegible] FINES (PASSING THE #200 SIEVE).

FILL AND BACKFILL MATERIAL SHOULD BE PLACED IN LEVEL LIFTS NOT EXCEEDING TWELVE (12) INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM TEST METHOD D1557-00.

BACKFILL BEHIND ALL RETAINING WALLS WITH WELL-DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE. PROVIDE DAMPPROOFING AT EXTERIOR FACE OF ALL FOUNDATION WALLS EXPOSED TO EARTH PER ARCHITECTURAL SPECIFICATIONS.

EXCAVATIONS AND DRAINAGE INSTALLATION SHALL BE OBSERVED BY A SOILS ENGINEER RETAINED BY THE OWNER. IF EXCAVATION SHOWS SOIL CONDITIONS TO BE OTHER THAN THOSE ASSUMED ABOVE, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

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 301).

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

[illegible]

TYPE OF CONSTRUCTION	f'c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MAXIMUM SHRINKAGE STRAIN
SLABS ON GRADE	4000 PSI	.45	[illegible]	N/A
FOOTINGS	4000 PSI	.45	[illegible]	N/A
GRADE BEAMS	4000 PSI	.45	[illegible]	N/A
ALL OTHER [illegible]	4000 PSI	.45	[illegible]	N/A

[illegible]

ALL CONCRETE EXPOSED TO WEATHER OR TO FREEZING TEMPERATURES SHALL BE AIR-ENTRAINED AND COMPLY WITH ALL REQUIREMENTS IN ACCORDANCE WITH ACI 318 TABLE 19.3.1.1 FOR EXPOSURE CATEGORIES F1, S0, W0 & 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 NOTED OTHERWISE. GRADE 60 REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615 MAY BE WELDED IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN AWS D1.4 ARE SUBMITTED.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. PROVIDE WELDED WIRE FABRIC IN SHEETS NOT ROLLS. LAP WELDED WIRE FABRIC 12" AT SIDES AND ENDS.

REINFORCING STEEL SHALL BE DETAILED INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH SP-66 AND ACI 318, LATEST EDITIONS, UNLESS OTHERWISE NOTED. REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE.

MECHANICAL SPLICING OF REINFORCING BARS, WHERE INDICATED ON THE DRAWINGS, SHALL BE BY AN ICBO APPROVED SYSTEM, SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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 SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE AS TABULATED BELOW.

BAR SIZE	DEVELOPMENT LENGTH – TENSION – TOP BARS	DEVELOPMENT LENGTH – TENSION – OTHER BARS	DEVELOPMENT LENGTH – COMPRESSION – ALL BARS	LAP SPLICE – TENSION – TOP BARS	LAP SPLICE – TENSION – OTHER BARS	LAP SPLICE – COMPRESSION – ALL BARS
#3	[illegible]	[illegible]	8	[illegible]	[illegible]	[illegible]
#4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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

VERTICAL BARS SHALL START FROM TOP OF FOOTING. HORIZONTAL BARS SHALL START A DISTANCE OF 1/2 THE NORMAL BAR SPACING FROM TOP OF FOOTING AND TOP OF FRAMED SLABS. IN ADDITION, THERE SHALL BE A HORIZONTAL BAR AT A MAXIMUM OF 3" FROM TOP OF WALL AND BOTTOM OF FRAMED SLABS.

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

PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS ON GRADE TO BREAK UP SLAB INTO RECTANGULAR AREAS OF NOT MORE THAN 400 SQUARE FEET EACH. AREAS TO BE AS SQUARE AS PRACTICAL AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS TO BE APPROVED BY THE ARCHITECT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY PREPARED IMMEDIATELY PRIOR TO POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE AND SPACING AS MAIN REINFORCING DETAILED BEYOND JOINT.

SEE ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOF. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (1) #5 x 4'-0" DIAGONAL AT EACH CORNER. EXTEND BARS 2'-0" BEYOND EDGE OF OPENING. IF THIS 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.

[illegible]

[illegible]

[illegible]

[illegible]

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

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

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

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITH 70 KSI LOW HYDROGEN ELECTRODES. WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE J2.4 IN AWS D1.1 LATEST EDITION.

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

[illegible]

EXISTING BUILDING

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

[illegible]

GENERAL

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

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

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

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

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

[illegible]

1. REFERENCE TO SLAB ELEVATION SHOWN ON PLAN AND VERIFY W/ ARCH DRAWINGS. EXTERIOR FOOTINGS SHALL BEAR A MIN OF 1'-6" BELOW ADJACENT GRADE.
2. FOOTINGS AND SLAB ON GRADE SHALL BEAR ON FIRM NATIVE SOIL OR COMPACTED STRUCTURAL FILL AS SPECIFIED IN THE SOILS REPORT.
3. WHERE SLAB ON GRADE IS INDICATED, SLAB SHALL BE 4" THICK W/ [illegible] WELDED WIRE FABRIC (WWF). SLAB SHALL BE POURED OVER A 2" SAND LAYER OVER A 10 MIL VAPOR BARRIER OVER 4" OF 5/8" CRUSHED ROCK.
4. REFER TO PLAN AND "CONCRETE GENERAL NOTES" ON SHEET S1.1 FOR CONTROL JOINT PLACEMENT AND DETAIL 2/S4.1 FOR CONTROL JOINT CONSTRUCTION.
5. PLACE ALL REINFORCEMENT PER THE STRUCTURAL NOTES AND FOUNDATION DETAILS. REFER TO SHEET S1.1 FOR ADDITIONAL CONCRETE DETAILING REQUIREMENTS.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, WALL LOCATIONS, AND CONCRETE ROUGH OPENINGS WITH ARCHITECTURAL DRAWINGS AND NOTIFY ALL PARTIES OF ANY DISCREPANCIES.
7. CONTRACTOR SHALL PROVIDE FOOTING AND SLAB SUBSTRATE PREPARATION, WATERPROOFING, AND BACKFILL & DRAINAGE BEHIND RETAINING WALLS PER GEOTECHNICAL REPORT. GEOTECHNICAL ENGINEER SHALL OBSERVE EXCAVATED SOIL CONDITIONS DURING CONSTRUCTION (AND GROUNDWATER CONDITIONS) AS REQUIRED AND PROVIDE ADDITIONAL RECOMMENDATIONS IF NECESSARY BASED ON ACTUAL SITE CONDITIONS.

ABBREVIATIONS			
AB	ABOVE	GLB	GLUE LAMINATED BEAM
AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ALT	ALTERNATE	KP	KING POST
ARCH	ARCHITECT	KSI	KIPS PER SQUARE INCH
BL	BELOW	L	ANGLE
BD	BAR DIAMETER	MECH	MECHANICAL
BLDG	BUILDING	MF	MOMENT FRAME
BM	BEAM	MT	METAL
BOT	BOTTOM	NS	[illegible]
BRG	BEARING	OC	ON CENTER
BTWN	BETWEEN	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	PL	PLATE
CLR	CLEAR	PLCS	PLACES
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
COL	COLUMN	PSF	POUNDS PER SQUARE FOOT
CONC	CONCRETE	PT	POST TENSIONED
CONN	CONNECTION	PT	PRESSURE TREATED
CONT	CONTINUOUS	REINF	REINFORCING
DIAPH	DIAPHRAGM	REQ'D	REQUIRED
DBL	DOUBLE	SCHED	SCHEDULE
DET	DETAIL	SIM	SIMILAR
DIA	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	STD	STANDARD
DIR	DIRECTION	STIFF	STIFFENER
EA	EACH	STL	STEEL
ELEV	ELEVATION	SYMM	SYMMETRICAL
EMBED	EMBEDMENT	SW	SHEARWALL
EX	EXISTING	TOC	TOP OF CONCRETE
EXP	EXPANSION	TOS	TOP OF STEEL
FLR	FLOOR	TOW	TOP OF WALL
FDN	FOUNDATION	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
FS	FAR SIDE	VERT	VERTICAL
FF	[illegible]	WF	WIDE FLANGE

King County

BELLEVUE STATION 9

(NEW BUILD)

[illegible]
BELLEVUE WA [illegible]

C G ENGINEERING
[illegible]

CG PROJECT# 16015.902

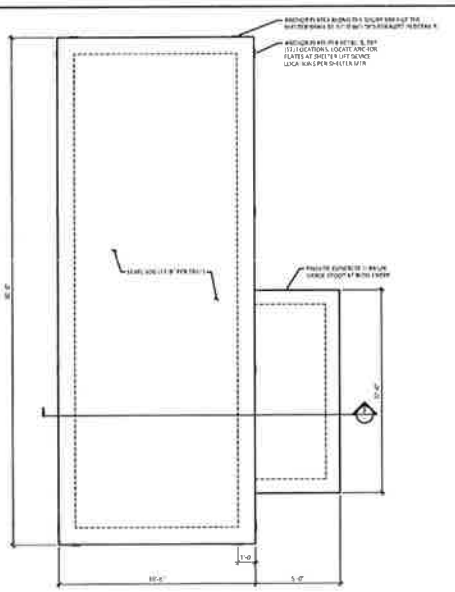
PROJECT MANAGER	[illegible]
PREPARED BY	[illegible]
APPROVED BY	[illegible]

REV	DATE	DESCRIPTION
1	[illegible]	[illegible]

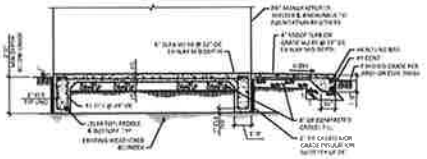
PLAN REVIEWERS SIGNATURE

SHEET NAME
STRUCTURAL NOTES

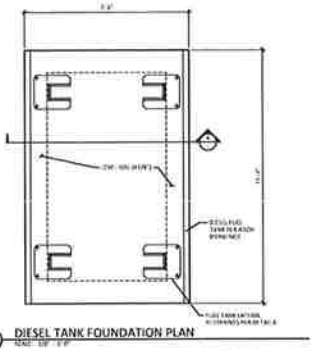
SHEET NUMBER
S1.1



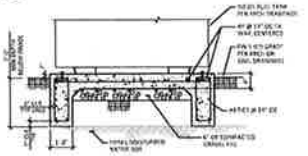
1 SHELTER FOUNDATION PLAN



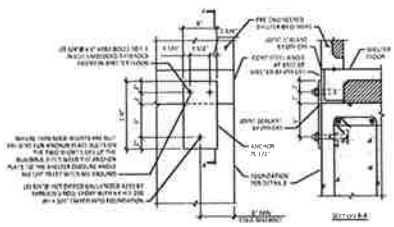
2 SHELTER FOUNDATION SECTION



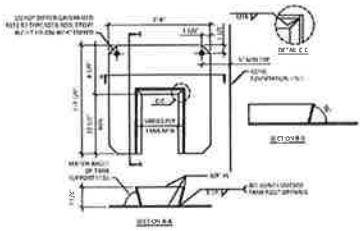
3 DIESEL TANK FOUNDATION PLAN



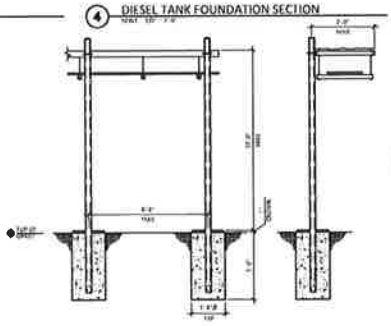
4 DIESEL TANK FOUNDATION SECTION



5 SHELTER ANCHORAGE DETAIL



6 FUEL TANK LATERAL RESTRAINTS



7 ICE BRIDGE PIER FOUNDATIONS

King County

BELLEVUE
STATION 9

(NEW BUILD)

1612 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING

CG PROJECT# 16015 902

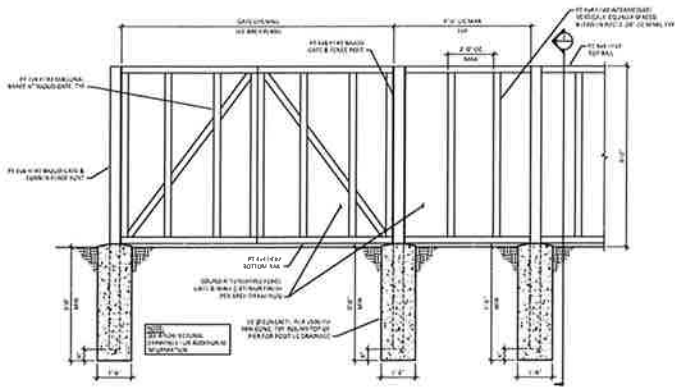
PROJECT MANAGER	WM
PREPARED BY	ZNS
APPROVED BY	WM

NO	DATE	DESCRIPTION
1		

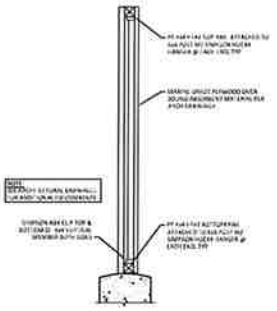
PLAN REVIEWERS SIGNATURE

SHEET NAME
BUILDING AND TANK FOUNDATION PLANS AND DETAILS

SHEET NUMBER
S2.1



1 SOUND ATTENUATING FENCE FOUNDATION ELEVATION



2 SOUND ATTENUATING FENCE FOUNDATION SECTION

King County

BELLEVUE
STATION 9

(NEW BUILD)

1412 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING
220 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 770-0600
FAX (425) 770-0610

CG PROJECT # 18015.902

PROJECT MANAGER

PREPARED BY

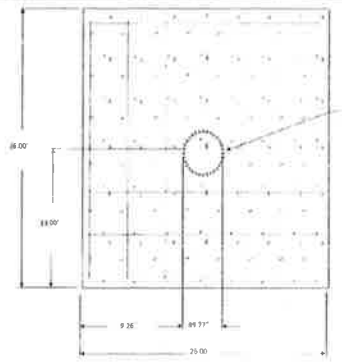
APPROVED BY

NO	DATE	DESCRIPTION
1	12/2/19	PERMIT SUBMITTAL

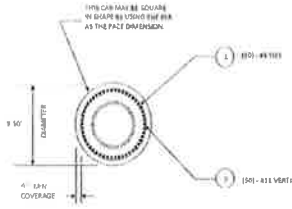
PLAN REVIEWER SIGNATURE

SHEET NAME
SOUND
ATTENUATING
FENCE ELEVATION
AND DETAIL

SHEET NUMBER
S2.2



SECTION A-A
No Scale



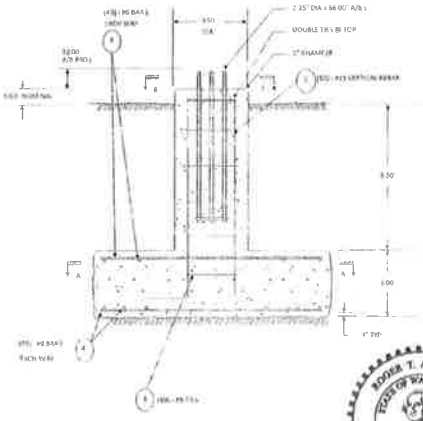
SECTION B-B
No Scale

GENERAL NOTES: SLAB FOUNDATION

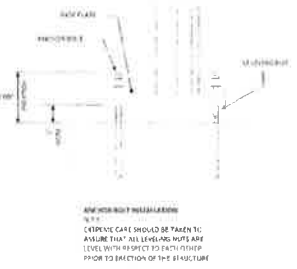
1 Prior to excavation, check the area for underground facilities
2 All reinforcing shall be deformed bars conforming to ASTM A615 Grade 60 (60,000 psi min. yield) and shall be provided by the foundation contractor
3 All concrete shall have a minimum compressive strength of 4000 psi @ 28 days. The requirement for the concrete shall be as given in the ACI "Building Code Requirements for Reinforced Concrete", ACI 318, the latest edition
4 Trowel top of foundation smooth
5 Concrete shall be placed against undisturbed soil to the depth indicated on the foundation drawing. The portion above grade shall be formed. If an area is excavated beyond the limits shown, this volume shall be filled with concrete or formed. After the forms are removed, the excess excavation shall be replaced and compacted.
6 Support system and reinforcement during pour by ready mixer
7 Foundation design based on soil bearing pressure of 3000 psf
8 Concrete is assumed to weigh 150 pcf
9 Estimated concrete volume = 90.66 cubic yards total.
10 Design based on the following loads from manufacturer drawing for order No 324543

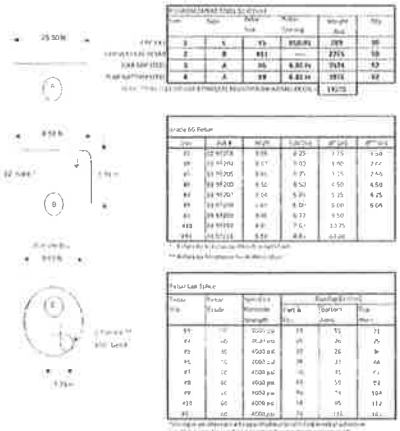
Factored Moment = 8258 FT-KIPS **Overturning Safety Factor = 1.03**
Factored Download = 88.7 KIPS **Max Toe Bearing Pressure = 5.91 ksf**
Factored Shear = 73.2 KIPS

11 Backfill should be compacted to a density of 95% ppc.
12 Anchor bolts to be ASTM A615 Gr. 75 ksi
13 Reference TETRA TECH PROJECT NO 114 570674 DATED 02/18/2016
14 Refer Soils Report for installation recommendations
15 Place vertical reinforcement at 18" into grade during pour.
16 Foundation designed to not exceed 85% capacity



ELEVATION
No Scale





Mark	Size	Pattern	Number	Length	Weight
1	9	93	100	289	99
2	9	001	—	2705	55
3	A	06	6.00 in	2674	67
4	A	09	6.00 in	1915	65

Mark	Size	Weight	Spacing	Length	Weight
#1	#9	3.38	@ 25	7.75	3.58
#2	#9	3.38	9.00	3.00	2.82
#3	#9	3.38	6.75	1.75	2.45
#4	#9	3.38	8.50	4.50	4.50
#5	#9	3.38	5.25	5.25	4.25
#6	#9	3.38	8.00	5.00	6.04
#7	#9	3.38	6.33	3.50	
#10	#9	3.38	7.67	12.75	
#11	#9	3.38	8.83	63.00	

Mark	Size	Specified Strength	Bundle Size	Length	Weight
#1	#9	4000 psi	1	7.75	3.58
#2	#9	4000 psi	1	3.00	2.82
#3	#9	4000 psi	1	1.75	2.45
#4	#9	4000 psi	1	4.50	4.50
#5	#9	4000 psi	1	5.25	4.25
#6	#9	4000 psi	1	5.00	6.04
#7	#9	4000 psi	1	3.50	
#10	#9	4000 psi	1	12.75	
#11	#9	4000 psi	1	63.00	

ROGER T. ALWORTH
STATE OF WASHINGTON
41725
REGISTERED PROFESSIONAL ENGINEER

May 16, 2016
WA Certificate of Authorization: 2202
Project#: U1316-119-161

VECTOR ENGINEERING

No	Description	Date	Init

valmont

Drawing No. S-133515

WA Certificate of Authorization: 2202

Project# U1316-119-161

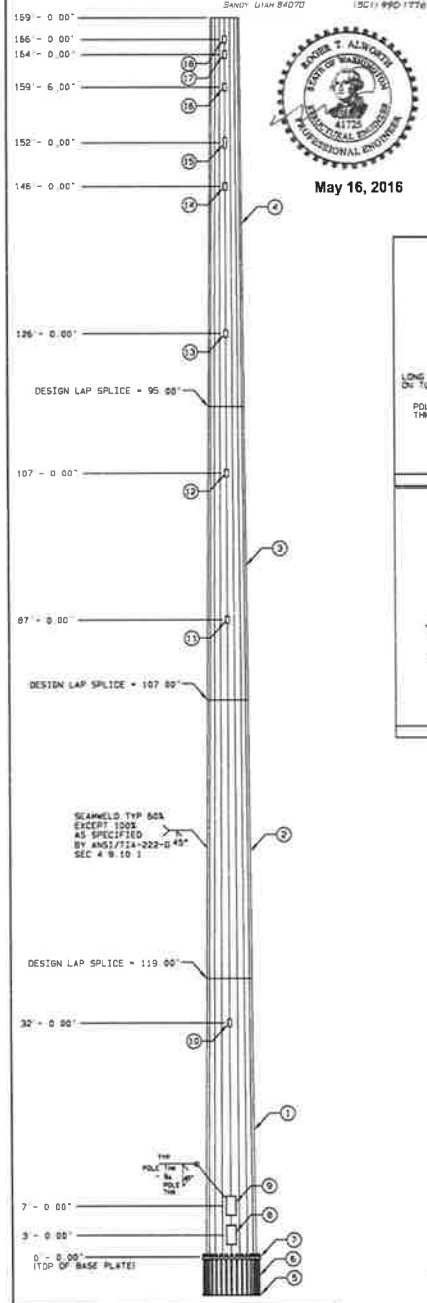
VECTOR ENGINEERING

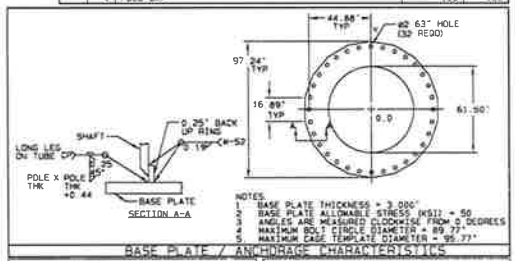
9128 S. STATE STREET, SUITE 101 (801) 990-1778
SANDY, UTAH 84070 (801) 990-1776 Fax

ROGER T. ALWORTH — STATE OF WASHINGTON — 41725 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

May 16, 2016

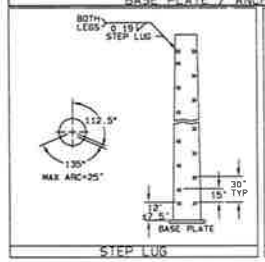
ITEM ID	NO REQD	FEATURES	UNIT WEIGHT (LBS)	WEIGHT (LBS)
1	1	SECTION A VALMONT S-22 0.625" THK (A572 GR65)	24,840	24,840
2	1	SECTION B VALMONT S-22 0.500" THK (A572 GR65)	17,442	17,442
3	1	SECTION C VALMONT S-22 0.438" THK (A572 GR65)	13,865	13,865
4	1	SECTION D VALMONT S-22 0.313" THK (A572 GR65)	9,387	9,387
5	1	BOTTOM CAGE PLATE	174	174
6	32	2.25" ANCHOR BOLT, LENGTH=5.50" A615 GR75	96	3,060
7	1	BASE PLATE VALMONT S-56 3.000" THK (A572 GR50)	4,727	4,727
	1	TOP CAGE PLATE (REMOVE BEFORE SETTING POLE)	230	230
	1	SAFETY CLIMBING CABLE (LENGTH = 159.00')	113	113
	3	GROUNDING LUG	2	6
	1	GALVANIZING	969	969
	126	STEP AND CLIP (VALMONT STANDARDS)	1	53
8	2	HAND HOLE HHY (16" x 32")	215	430
9	2	HAND HOLE HHY (16" x 32")	215	430
10	3	HAND HOLE HHY (6" x 12")	26	78
11	2	HAND HOLE HHY (6" x 12")	26	52
12	2	HAND HOLE HHY (6" x 12")	26	52
13	1	HAND HOLE STD (6" x 12")	22	22
14	3	HAND HOLE STD (6" x 12")	22	66
15	3	HAND HOLE STD (6" x 16")	18	54
16	1	HAND HOLE STD (6" x 12")	22	22
17	1	HAND HOLE STD (6" x 12")	22	22
18	3	HAND HOLE STD (6" x 12")	22	66
	1	POLE CAP	100	100



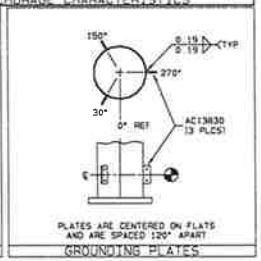


NOTES:
1 BASE PLATE THICKNESS = 3.000"
2 BASE PLATE ALLOWABLE STRESS (KSI) = 50
3 ANGLES ARE MEASURED CLOCKWISE FROM 0 DEGREES
4 MAXIMUM BOLT CIRCLE DIAMETER = 89.77"
5 MAXIMUM CASE TEMPLATE DIAMETER = 95.77"

BASE PLATE / ANCHORAGE CHARACTERISTICS



STEP LUG



GROUNDING PLATES

NOTES:
1 FACTORED REACTIONS FOR FOUNDATION DESIGN
MOMENT = 83,623 IN-KIPS
SHEAR = 62,248 #
VERTICAL = 92,988 #
2 GALVANIZED PER ASTM A-123
3 DESIGN CRITERIA: ANSI/TIA 222-G ADDENDUM 4
4 THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING
EXPOSURE CATEGORY = B
STRUCTURE CLASSIFICATION = 3
TOPOGRAPHY CATEGORY = 3
H = 400.00 FT
EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS Ss = 1.42
EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT ONE SECOND S1 = 0.54
EARTHQUAKE SITE CLASS = D
WIND LOAD CASES ARE BASED ON 3 SECOND GUST AND 100 YEAR WIND RETURN PERIOD
A CASE 1: WIND = 85 MPH WIND SPEED
B CASE 2: WIND = 30 MPH ICE AND WIND SPEED
DESIGN ICE THICKNESS = 0.25 INCH
C CASE 3: WIND = 60 MPH WIND SPEED
D EQUIPMENT

DESCRIPTION	MTG HT (FT)	CENTROID HT (FT)	WITHOUT ICE EPA (FT**2)	WITHOUT ICE WT (LBS)	WITH ICE EPA (FT**2)	WITH ICE WT (LBS)
1-4FT LIGHTNING ROD	169.00	171.00	0.25	10	0.92	23
2-SC412-HF2LDF	159.00	179.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	169.00	169.00	37.56	892	56.00	1616
2-6' HIGH PERFORMANCE (11GHZ)	166.00	166.00	76.54	744	81.12	1258
1-4' HIGH PERFORMANCE (11GHZ)	164.00	164.00	17.18	253	18.67	373
1-3' HP DISH(11GHZ)	159.50	159.50	9.97	136	11.12	209
2-SC412-HF2LDF	149.00	159.00	20.96	158	27.98	414
4-6' UNIVERSAL SIDE ARM (84"	149.00	149.00	37.56	892	56.00	1616
12-PANEL (8" X 1" X 3")	154.00	154.00	83.40	948	98.16	2340
3-T-ARM SP1 3' S/D 12' C/A	154.00	154.00	6.85	618	11.88	894
2-6' HIGH PERFORMANCE (11GHZ)	146.00	146.00	76.54	744	81.10	1258
1-DBSPECTRA UHF TTA	127.50	127.50	4.05	61	4.70	126
2-CC807-11	109.00	118.00	10.46	98	16.28	238
4-6' UNIVERSAL SIDE ARM (84"	109.00	109.00	37.56	892	55.96	1612
2-CC807-11	89.00	98.00	10.46	98	16.26	238
4-6' UNIVERSAL SIDE ARM (84"	89.00	89.00	37.56	892	56.88	1612
1-CAMERA (17.5" X 13.5" X 8")	34.00	34.00	3.29	83	3.89	132
1-19" STANDOFF	34.00	34.00	0.73	16	1.20	34

5 FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE)
6 TOTAL POLE HEIGHT IS 170 FT AGL
7 ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX 1 FT AGL)
8 POLE DESIGNED TO NOT EXCEED 65% CAPACITY
9 POLE TO BE PAINTED SW 6195 ROCK GARDEN
10 POLE MEETS 0.47 DEGREE TWIST & SWAY UNDER 60 MPH SERVICE WIND SPEED
11 POLE DESIGNED TO 110 MPH ULTIMATE WIND SPEED PER IBC 2012
12 WIND SPEED CONVERSION TO 85 MPH NOMINAL PER IBC 2012 1609.3.1
13 E80 ELECTRODE USED FOR ALL WELDS

SECTION INFORMATION

ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL
1	48' - 0.00"	82.00"	71.35"	0.625"	A572 65 KSI
2	48' -11.00"	74.55"	64.14"	0.500"	A572 65 KSI
3	47' -11.00"	66.99"	56.36"	0.438"	A572 65 KSI
4	52' -11.00"	58.74"	47.00"	0.313"	A572 65 KSI

REV	DATE	BY	DESCRIPTION
1	09/30/16	NAR	WELD DETAILS/NOTES ADDED

ORDER 324543 | PROJECT 324543 | FILE ID 324543 | SCALE NONE | DATE 04/15/16 | ENGR NAR

DESCRIPTION: DOCLIA 170' POLE, SITE: BELLEVUE STATION, WA 324543

valmont

MISCELLANEOUS EQUIPMENT SCHEDULE

SYMBOL	ITEM DESCRIPTION	SPECIFIED MFR & MODEL NO.	AREA SERVED	EQUIPMENT CAPACITY	ELECTRICAL AMPS	ELECTRICAL VOLTS/PH	REMARKS
LDP-1	TANK GAUGE AND LEAK DETECTION PANEL	FUEL SENTRY TG-EL-D4A	TANK, DAY TANK	6 INPUT	4.2	120/1	PROVIDE NEMA 3 ENCLOSURE

PIPING MATERIAL SCHEDULE

PIPING	LOCATION	MATERIAL	JOINT
DIESEL FUEL SUPPLY/RETURN	ALL	PVFD 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

DRAWING NOTES:

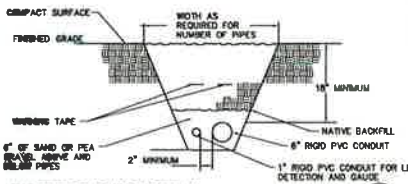
1. FUEL PIPING INSTALLATION SHALL CONFORM TO 2015 NFPA 30.
2. SEAL ALL CONDUIT AND CONTAINMENTS TO BE WATER TIGHT.
3. CONTRACTOR SHALL LAY OUT CONTAINMENT CONDUITS AND PIPING SO THAT ANY POINT OF LEAKAGE IS CAUGHT BY SECONDARY CONTAINMENT AND ALARMS WITH THE LEAK DETECTION SYSTEM.
4. COORDINATE CONNECTION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

KEYED NOTES:

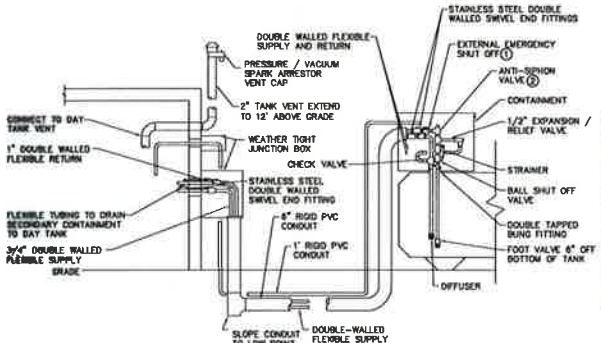
(1) FULL LINE SIZE FUSEABLE LINK SHUT-OFF VALVE.

(2) COMPATIBLE IN A SUCTION SYSTEM.

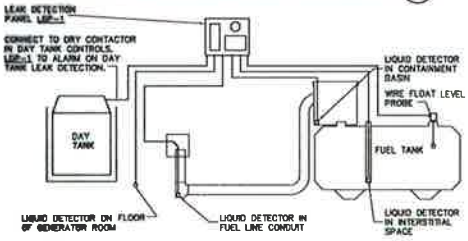
(3) VERIFY DAY TANK'S SUPPLY AND RETURN PUMPS ARE OPERATING CORRECTLY TO MOVE FUEL WITHOUT SPILL OR OVERFLOW.



PIPE TRENCHING DETAIL
NOT TO SCALE
1 M1.0

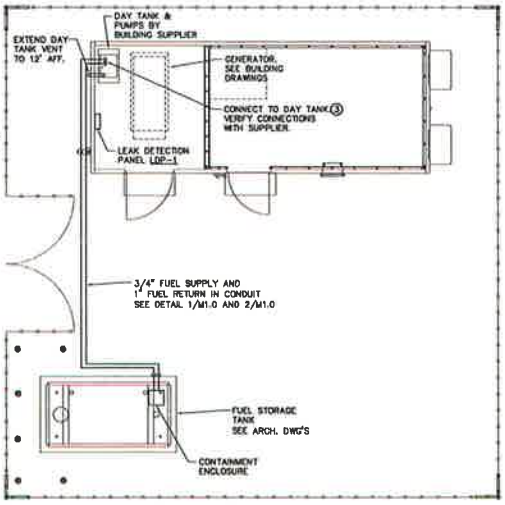


FUEL PIPING DIAGRAM
NOT TO SCALE
2 M1.0



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

LEAK DETECTION SYSTEM DIAGRAM
NOT TO SCALE
3 M1.0



NORTH

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

VEACH

King County

PSERN

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER:
PREPARED BY: SJC
APPROVED BY: TAV

01/23/17	PERMIT
06/16/16	PERMIT
01/7/16	PERMIT
05/25/15	PRELIMINARY

PLAN REVIEWERS SIGNATURE

SHEET NAME
FUEL SYSTEM PIPING PLAN

SHEET NUMBER
M1.0

AIR CONDITIONER SCHEDULE

SYMBOL	SPECIFIED MANUFACTURER AND MODEL NO.	TYPE	SUPPLY FAN CFM	SUPPLY FAN ESP	SUPPLY FAN RPM	SUPPLY FAN HP	COOLING COIL & COMPRESSOR(S) TOTAL CAP.*	COOLING COIL & COMPRESSOR(S) EER*	COMPRESSOR QTY	COMPRESSOR RLA(EA)	FILTERS TYPE	FILTERS MIN. SF	UNIT ELECTRICAL FLA	UNIT ELECTRICAL VOLT/PH	REMARKS
AC-1	MARVAIR AVPA48ACA050CA5100	WALL MOUNTED	1725	0.125	825	1/3	46,000	9.50	1	21.8	MERV 7	10X20	33.2	230/1	①②
AC-2	MARVAIR AVPA48ACA050CA5100	WALL MOUNTED	1725	0.125	825	1/3	46,000	9.50	1	21.8	MERV 7	10X20	33.2	230/1	①②

* MINIMUM UNIT COOLING CAPACITIES (INCLUDE FAN MOTOR HEAT), AT COOLING COIL CONDITIONS SHOWN AND WITH CONDENSER TEMPERATURE OF 95°F. ① W/ 100% ECONOMIZER ② W/ LEAD/LAG CONTROLLER

FANS

SYMBOL	SPECIFIED MFR & MODEL NO.	TYPE	AREA SERVED	CFM	ESP	RPM	ELECTRICAL AMP	ELECTRICAL V/PH	DRIVE	CONTROL	REMARKS
EF-1	DAYTON 1HLA3	SHUTTER MOUNT EXHAUST	EQUIPMENT ROOM	416	0.125	1550	0.85	115/1	DIRECT	CONTINUOUS	-

ACCESSORIES: ①W/ INTEGRAL BACK DRAFT DAMPER ②ECM MOTOR

VENTILATION

AREA TYPE	AREA (SF)	IMC CODE REQUIREMENT	REQ'D VOLUME OUTSIDE AIR	REQ'D VOLUME EXHAUST	OUTSIDE AIR PROVIDED	EXHAUST PROVIDED
BATTERY ROOM	198	1 CFM/SF	198	-	416	416

COOLING LOAD CALCULATION

FROM RADIO EQUIPMENT MANUFACTURER:
100% CAPACITY LOAD: 46,714 BTU/HR.
INTENT IS FOR A SINGLE AIR CONDITIONER TO CARRY THE LOAD WITH THE SECOND UNIT FOR REDUNDANCY.

ENERGY CODE REQUIREMENTS

A. TEST AND BALANCE EACH HVAC SYSTEM. ADJUST REGISTERS AND DAMPERS FOR AIR FLOW INDICATED ON DRAWINGS. ADJUST FAN SPEED FOR TOTAL AIR FLOW.

B. 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.

C. 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%

D. 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. UNITS TO OPERATE IN A LEAD/LAG SEQUENCE.

DRAWING NOTES:

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

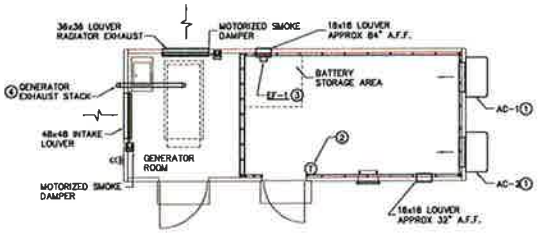
KEYED NOTES:

① SUPPORT AIR CONDITIONERS ON WALL MOUNTING BRACKETS PROVIDED WITH UNIT.

② 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.

③ MOUNT EF-1 SO THAT INTAKE IS WITHIN 12" OF THE HIGHEST POINT OF THE CEILING.

④ EXTEND EXHAUST STACK TO 10' ABOVE GRADE. PROVIDE APPROVED RAIN CAP.



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

NORTH

VEACH

King County

PSERN

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER:
PREPARED BY: MJC
APPROVED BY: TAW

01/23/17	PCNet
05/15/18	PCNet
07/2/18	PCNet
09/20/18	PRC Submittal

PLAN REVIEWERS SIGNATURE

SHEET NAME
HVAC PLAN

SHEET NUMBER
M1.1

PP1

225 A. BUS 200 A MAIN CIRCUIT BREAKER

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL (VA)	BREAKER A / P	CCT	PH	CCT	BREAKER A / P	TOTAL (VA)	DESCRIPTION
HVAC #1	2600	50 / 2	1	A	2	50 / 2	2600	HVAC #2
------	2600	/	3	B	4	/	2600	------
PANEL PP3	11540	125 / 3	5	A	6	60 / 2	1000	RECEPTACLE MOUNTED UNIT
------	11080	/	7	B	8	/	1080	SURGE ARRESTOR
EXTERIOR LTG	180	20 / 1	9	A	10	20 / 1	180	EXT GFI RECEPT
ICE ROOM LTG	1601	20 / 1	11	B	12	20 / 1	800	SOUP RM RECEPTS
FIRE SUPPRESSION	128	20 / 1	13	A	14	20 / 1	360	FUEL PUMP
		/	15	B	16	20 / 1	200	LEAK CONTROL PANEL
		/	17	A	18	/		
		/	19	B	20	/		
		/	21	A	22	/		
		/	23	B	24	/		
		/	25	A	26	/		
		/	27	B	28	/		
		/	29	A	30	/		
		/	31	B	32	/		
		/	33	A	34	/		
		/	35	B	36	/		
		/	37	A	38	/		
		/	39	B	40	/		
		/	41	A	42	/		

PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.0	KW @	100% =	0.0 @ 100%/1ø =		0.0 KVA
FLUORESCENT	1.3	KW @	85% =	1.3 @ 100%/1ø =		1.3 KVA
RECEPTACLES						
FIRST 10 KW	1.1	KW @	100% =	1.1 @ 100%/1ø =		1.1 KVA
REMAINDER	0.0	KW @	100% =	0.0 @ 50% =		0.0 KVA
MOTORS						
LARGEST	33.3	KW @	80% =	29.3 @ 125%/1ø =		36.5 KVA
REMAINDER	5.1	KW @	80% =	6.3 @ 100%/1ø =		6.3 KVA
OTHER	0.5	KW @	100% =	0.5 @ 100%/1ø =		0.5 KVA
TOTAL	51.9	KW		38.4 KVA		45.8 KVA
				MINIMUM PANEL AMPACITY =		191 AMPERES
PHASE "A"	15.8	KW	PANEL POWER FACTOR	85%	A-B	93% PHASE BALANCE
PHASE "B"	18.3	KW				

PP2

225 A. BUS

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL (VA)	BREAKER A / P	CCT	PH	CCT	BREAKER A / P	TOTAL (VA)	DESCRIPTION
RECTIFIER #1	1500	35 / 2	1	A	2	35 / 2	1500	RECTIFIER #2
------	1500	/	3	B	4	/	1500	------
RECTIFIER #3	1500	35 / 2	5	A	6	35 / 2	1500	RECTIFIER #4
------	1500	/	7	B	8	/	1500	------
RECTIFIER #5	1500	35 / 2	9	A	10	35 / 2	1500	RECTIFIER #6
------	1500	/	11	B	12	/	1500	------
RECTIFIER #7	1500	35 / 2	13	A	14	/		RECTIFIER #8
------	1500	/	15	B	16	/		------
RECTIFIER #9	1500	35 / 2	17	A	18	/		
------	1500	/	19	B	20	/		
SPACE		/	21	A	22	30 / 1	180	ROW 3 TWIST LOCK 1
SPACE		/	23	B	24	30 / 1	180	ROW 3 TWIST LOCK 2
ROW 1 TWIST LOCK #1	180	30 / 1	25	A	26	30 / 1	180	ROW 3 TWIST LOCK 3
ROW 1 TWIST LOCK #2	180	30 / 1	27	B	28	30 / 1	180	ROW 3 TWIST LOCK 4
ROW 1 TWIST LOCK #3	180	30 / 1	29	A	30	30 / 1	180	ROW 3 TWIST LOCK 5
ROW 1 TWIST LOCK #4	180	30 / 1	31	B	32			
ROW 1 TWIST LOCK #5	180	30 / 1	33	A	34			
		/	35	B	36		0	0
TELCO RECEPT #1	180	20 / 1	37	A	38	20 / 1	180	TELCO RECEPT #2
TELCO RECEPT #3	180	20 / 1	39	B	40	20 / 1	180	TELCO RECEPT #4
		/	41	A	42			

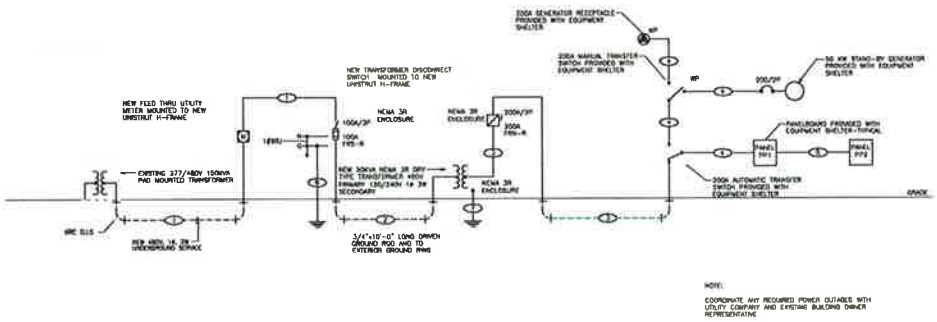
PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.0	KW @	100% =	0.0 @ 100%/1ø =		0.0 KVA
FLUORESCENT	0.0	KW @	85% =	0.0 @ 100%/1ø =		0.0 KVA
RECEPTACLES						
FIRST 10 KW	2.5	KW @	100% =	2.5 @ 100%/1ø =		2.5 KVA
REMAINDER	0.0	KW @	100% =	0.0 @ 50% =		0.0 KVA
MOTORS						
LARGEST	0.0	KW @	80% =	0.0 @ 125%/1ø =		0.0 KVA
REMAINDER	0.0	KW @	80% =	0.0 @ 100%/1ø =		0.0 KVA
OTHER	24.0	KW @	100% =	24.0 @ 100%/1ø =		24.0 KVA
TOTAL	26.5	KW		26.5 KVA		26.5 KVA
				MINIMUM PANEL AMPACITY =		111 AMPERES
PHASE "A"	13.4	KW	PANEL POWER FACTOR	100%	A-B	97% PHASE BALANCE
PHASE "B"	13.1	KW				

FEEDER SCHEDULE

1. (2 ø1) 1 1/4" C
2. (3 ø2 & 1ø6) 1" C
3. (3 #3/0 & 1#6G) 2" C
4. (3 #3/0 & 1#6G) 2" C PROVIDED WITH EQUIPMENT SHELTER
5. (3 #1 & 1#4G) 1 1/2"C PROVIDED WITH EQUIPMENT SHELTER
6. 1 #8CU
7. 1 #4CU

ALL CONDUCTORS SHALL BE COPPER 600V RATED WITH THWN INSULATION



NOTE:
COORDINATE ANY REQUIRED POWER OUTAGES WITH UTILITY COMPANY AND EXISTING BUILDING OWNER REPRESENTATIVE

1 ELECTRICAL ONE LINE DIAGRAM

1. INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE OF WASHINGTON LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT, ALL LATEST ISSUE, AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S682-400, I.C.E.A. P81-570, & LOCAL PUD.
2. PROVIDE A METER BASE PER LOCAL UTILITY STANDARDS. MOUNT ON SIDE OF OWNER FURNISHED BACK BOARD.
3. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE 1, CONFORMING TO UL ARTICLE 651; WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED 1 PIPE; SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "RIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RMS, (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK).
4. CONDUIT USED INDOORS SHALL BE E.M.T., AND RIGID GALVANIZED STEEL FOR OUTDOORS. COUPLINGS SHALL BE RIGID STEEL AND COMPRESSION TYPE FOR E.M.T. SET SCREW FITTINGS ARE NOT PERMITTED. FOR ALL STUBS-UPS, USE RIGID GALVANIZED STEEL CONDUIT.
5. WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY NEC. THERE WILL BE NO SPLICES ALLOWED. PROVIDE HOT PULLING HAND HOLES AS NEEDED.
6. CONTRACTOR SHALL PROVIDE TEST OF THE GROUNDING SYSTEM BY CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS. ALL ABOVE GRADE INTERIOR GROUNDING CONNECTORS SHALL BE DOUBLE-U/U COMPRESSION TYPE. ALL BELOW GRADE AND EXPOSED EXTERIOR GROUNDING CONNECTIONS TO PERMANENT EQUIPMENT AND FIXED BUILDING ELEMENTS SHALL BE EXOTHERMIC TYPE. CARE SHALL BE TAKEN TO REVIEW CONNECTION LOCATIONS AND MATERIAL TYPES TO AVOID POSSIBLE GALVANIC CORROSION. ALL EXPOSED GROUNDING CONNECTIONS TO BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS "NO-OX", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER. ALL BOLTS, WASHERS AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
7. ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-3 OR AS PER NOTE 6 ABOVE.
8. ALL JUNCTION AND OUTLET BOXES TO BE LABELLED WITH KROY TAPE, OR EQUAL, DESIGNATING ALL CIRCUIT NUMBERS CONTAINED IN EACH BOX.
9. CONTRACTOR TO ENSURE 4/C PROVIDED WITH (2) INTERNAL TVSS.
10. CONTRACTOR SHALL COORDINATE WITH SITE SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. WHEREVER POTENTIAL CONFLICTS/ INTERFERENCES EXIST, HAND EXCAVATE TO AVOID DAMAGE. CONTACT ALL UTILITIES TO LOCATE UNDERGROUND PIPING IN PUBLIC ROW.
11. VERIFY THAT A.I.C. OF THE UTILITY DOES NOT EXCEED THE A.I.C. RATING OF THE PROVIDED EQUIPMENT SHELTER PACKAGE. IF OVER 10KAIC, PROVIDE FUSIBLE SERVICE ENTRANCE SWITCH AND CONFIRM LOWERING OF AIC TO ACCEPTABLE LEVELS.
12. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
13. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL WIRES, CABLES, PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRICADE, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

GENERAL NOTES

ABBREVIATIONS

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

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

LEGEND / ABBREVIATIONS

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

13413 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+
ARCHITECTURE

PROJECT MANAGER: EJC

PREPARED BY: EM/MG

APPROVED BY: PS

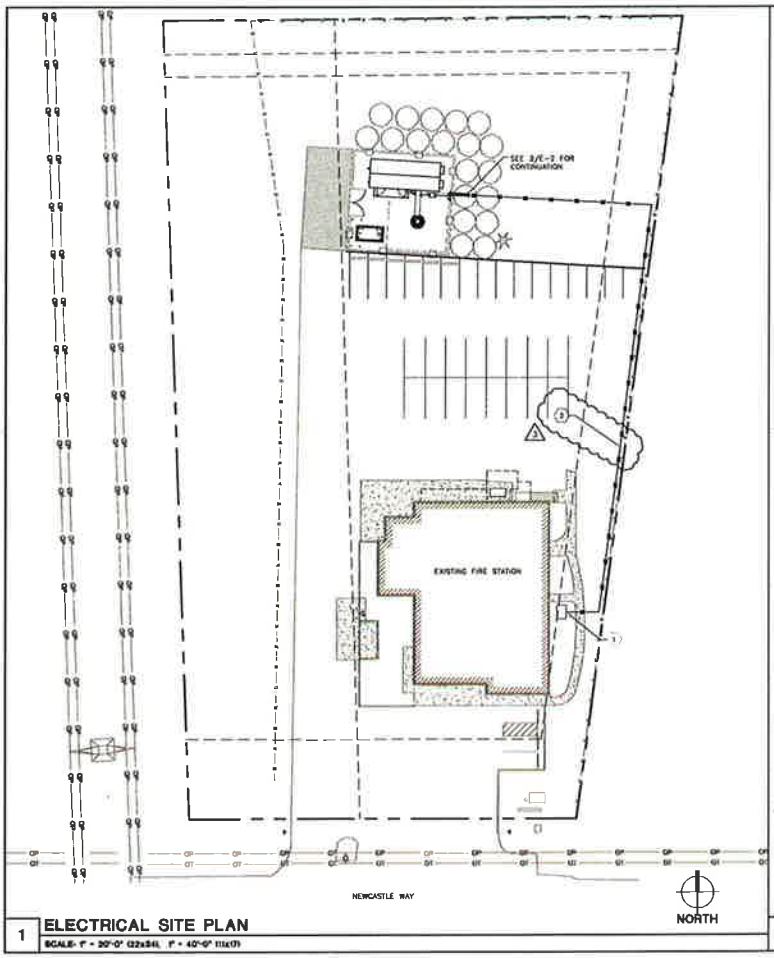
05/01/17	SITE RELOCATION
07/14/18	PLAN REVIEW COMMENTS
09/07/18	PLAN REVIEW COMMENTS
10/05/18	ISSUED FOR PERMIT
12/19/18	ISSUED FOR PREVIA PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

SHEET NAME
ONE-LINE DIAGRAM & PANEL SCHEDULE

SHEET NUMBER
E-1

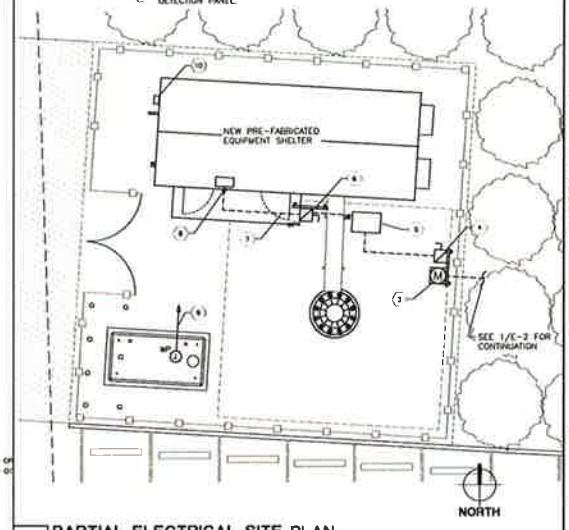


1 ELECTRICAL SITE PLAN

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

KEY NOTES:

1. CONTRACTOR SHALL TERMINATE NEW RACEWAY AT EXISTING 277/480V PAD MOUNTED UTILITY TRANSFORMER. COORDINATE INSTALLATION WITH PUGET SOUND ENERGY (PSE). CONTRACTOR SHALL REMOVE EXISTING LANDSCAPING LOCATED IN FRONT OF TRANSFORMER IN ACCORDANCE WITH PSE REQUIREMENTS.
2. NEW 480V 1ø 2W UNDERGROUND SERVICE MINIMUM 36" BELOW FINISH GRADE. RESTORE EXISTING LANDSCAPING TO EXISTING CONDITION.
3. NEW 480V UTILITY METER WITH MOUNTED TO NEW UNISTRUT FRAME. COORDINATE INSTALLATION WITH PSE
4. NEW FUSED MAIN DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
5. NEW DRY TYPE TRANSFORMER MOUNTED TO CONCRETE PAD WITH VIBRATION ISOLATORS. SEE ONE LINE DIAGRAM 1/E-1
6. NEW TRANSFORMER DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
7. NEW 120/240V SERVICE TO NEW EQUIPMENT SHELTER LOCATED 36" BELOW FINISH GRADE.
8. CONTRACTOR SHALL TERMINATE AT AUTOMATIC TRANSFER SWITCH PROVIDED WITH NEW PRE-MANUFACTURED EQUIPMENT SHELTER
9. CONTRACTOR SHALL PROVIDE ALARM CONNECTIONS TO FUEL TANK AND FUEL PIPING ALARM CONDUCTORS TO LEAK DETECTION CONTROL PANEL.
10. CONTRACTOR TO PROVIDE 120V CONNECTION TO LEAK DETECTION PANEL.



2 PARTIAL ELECTRICAL SITE PLAN

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

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+

PROJECT MANAGER: EJC

PREPARED BY: LH/MD

APPROVED BY: PH

05/01/17	SITE RELOCATION
05/14/18	PLAN REVIEW COMMENTS
06/07/18	PLAN REVIEW COMMENTS
06/01/18	ISSUED FOR PERMIT
07/06/18	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

SHEET NAME: ELECTRICAL SITE PLAN

SHEET NUMBER: E-2

GENERAL NOTES:

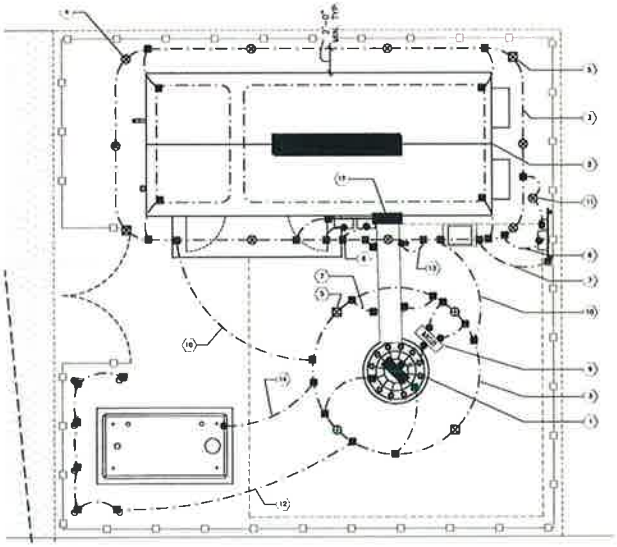
1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COVERED WITH TWO (2) COATS OF SNOWSHIELD (ALUMINITE 555RG) OR EQUAL.
2. ALL ELECTRICAL CADWELD AND MECHANICAL GROUND CONNECTIONS WILL HAVE ANTI-OXIDATION COMPOUND APPLIED TO CONNECTION
3. ANY METAL OBJECTS WITHIN 6 FEET OF THE EXTERNAL GROUND RING SHALL BE GROUNDED.
4. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
5. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALLED AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ACCURATELY SUPPORTED.
8. OBSERVE NEC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING
9. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
10. SITE TO COMPLY WITH R56 STANDARDS FOR GROUNDING

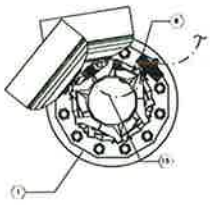
LEGEND

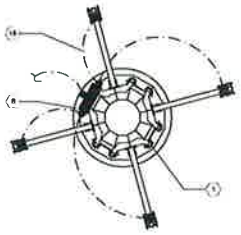
SYM	DESCRIPTION
●	3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C. (MARKER 2561S)
■	CADWELD INSPECTION WELL (SEE DETAIL 3/E-1)
— ■ —	#2 AWG BARE SOLID TINNED COPPER WIRE, MINIMUM 30" BELOW GRADE, OR 6" BELOW LOCAL FROST LINE, U.N.O.
— ■ —	CADWELD/EXOTHERMIC WELD CONNECTION
— ● —	MECHANICAL CONNECTION

KEYED NOTES:

1. NEW 170' HIGH MONOPOLE TOWER. PROVIDE #1 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO EXOTHERMIC WELD CONNECTION AT BASE OF TOWER.
2. NEW 12'-0" x 30'-0" EQUIPMENT SHELTER
3. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR LOCATED 30" BELOW FINISH GRADE FOR EXTERIOR GROUND RING AT TOWER AND EQUIPMENT SHELTER.
4. (2/E-1) PROVIDE 3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C.
5. (3/E-1) GROUND INSPECTION AND TEST WELL. SEE DETAIL FOR CONSTRUCTION REQUIREMENTS. MIN (1) ONE PER GROUND RING.
6. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO MECHANICAL CONNECTION AT NEW ELECTRICAL ENCLOSURES.
7. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FOR GROUND CONNECTION TO WAVEGUIDE BRIDGE / UTILITY FRAME SUPPORT. PROVIDE GROUND CONNECTION AT EACH PIPE SUPPORT.
8. (4/E-1) NEW COLLECTION GROUND BAR MOUNTED AT ANTENNA LEVEL OF TOWER. PROVIDE #2 STRANDED GREEN INSULATED COPPER CONDUCTOR TO MECHANICAL CONNECTION AT MASTER GROUND BAR AT BASE OF TOWER.
9. (5/E-1) NEW MASTER GROUND BAR MOUNTED AT BASE OF TOWER. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT EXTERIOR NEW GROUND RING.
10. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT TOWER GROUND RING TO EXOTHERMIC WELD CONNECTION AT EQUIPMENT SHELTER GROUND RING PHYSICALLY SEPARATE AS MUCH AS PRACTICAL.
11. NEW METER GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR CADWELDED TO NEW GROUND ROD AND PROVIDE EXOTHERMIC WELD CONNECTION TO EQUIPMENT SHELTER GROUND RING.
12. SAFETY BOLLARD GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO EXOTHERMIC CONNECTION AT BOLLARD, TYP.
13. GPS GROUNDING. #1 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT GPS ANTENNAS, TYP.
14. FUEL TANK GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT FUEL TANK GROUND LUG.
15. MICROWAVE ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT MICROWAVE ANTENNAS, TYP.
16. CORPORATE COLLINEAR ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO MECHANICAL CONNECTION AT CORPORATE COLLINEAR ANTENNAS, TYP.
17. (6/E-1) EXTERNAL GROUND BAR MOUNTED BELOW GRADE/ FIRST AT EQUIPMENT SHELTER PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT NEW EXTERIOR GROUND RING.







1 **COMPOUND AND ANTENNA GROUNDING PLANS**
SCALE: 1/4" = 1'-0" (22x34), 1/8" = 1'-0" (11x17)

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[redacted] NEWCASTLE WAY
BELLEVUE, WA [redacted]

[redacted]

CAMP+
[redacted]

PROJECT MANAGER: EJC
PREPARED BY: LH/MO
APPROVED BY: PH

03/01/17	SITE RELOCATION
05/11/16	PLAN REVIEW COMMENTS
09/01/16	PLAN REVIEW COMMENTS
08/05/16	ISSUED FOR PERMIT
07/08/16	ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE

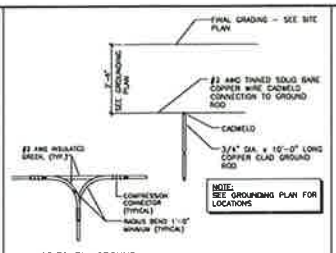
ARCHITECT'S STAMP

SHEET NAME
GROUNDING PLAN & NOTES

SHEET NUMBER
E-3

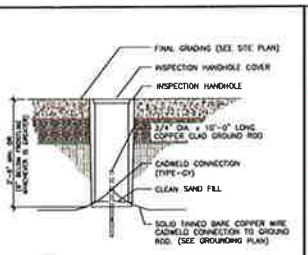
1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. ALL GROUNDING SHALL CONFORM TO NEC STANDARDS.
3. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEALING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. PREFABRICATED SHELTER WILL BE PROVIDED WITH INTERNAL WIRING FOR COMPLETE INTERNAL WIRING REFER TO DRAWINGS PROVIDED BY SHELTER MANUFACTURER.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE, (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & MAKE A VERTICAL SEPARATION OF 8" FOR EVERY ADDITIONAL CONNECTION
9. 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.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"Ø-10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
12. 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
13. USE OF BIT BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHERE 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. GROUND RING SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
15. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD (SHALL) FOOTING OR FENCE.
16. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
17. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (3 MINIMUM)
18. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
19. MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
20. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
21. ENSURE ALL MECHANICAL CONNECTIONS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
22. GROUND BARS SHALL NOT BE FIELD MODIFIED.
23. USE PAINT SCRIBE FOR LOCATING ON MASTER GROUND BAR AS DISCUSSED IN MSD 118, 33 & 38

1 GENERAL NOTES
NOT TO SCALE



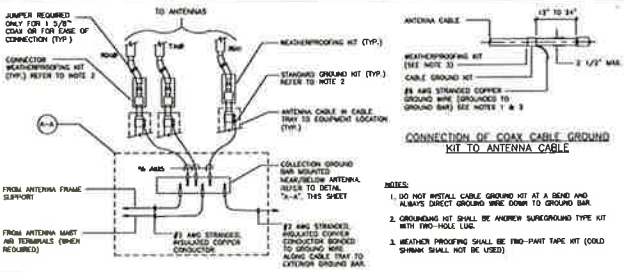
HORIZONTAL GROUND RING SPLICE

2 GROUND RING DETAIL
NOT TO SCALE



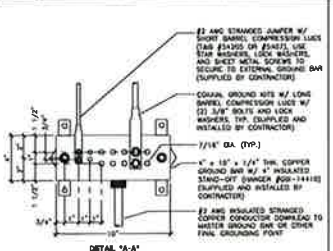
NOTE: SEE GROUNDING PLAN FOR LOCATIONS

3 CADWELD INSPECTION WELL
NOT TO SCALE



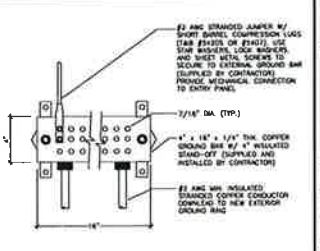
CONNECTION OF COAX CABLE GROUND KIT TO ANTENNA CABLE

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

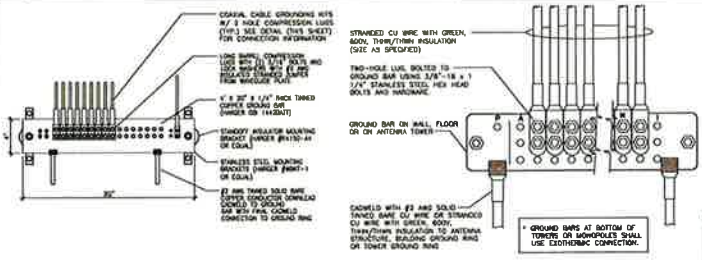


DETAIL "A-A"

4 COAXIAL CABLE GROUND WIRE TO COLLECTION GROUND BAR CONNECTION
NOT TO SCALE



6 EXTERNAL GROUND BAR
NOT TO SCALE



FINE SCHEME SPECIFICATIONS:

PROVIDER (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

ARRESTOR (A)
CONNECTS TO THE EARTH ELECTRODE SYSTEM INCLUDING CENTRAL OFFICE GROUND GRID, BUILDING STRUCTURAL GROUNDS, 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 (IG) SUCH AS CBN EQUIPMENT FRAME GROUNDS AND DC GROUND CONDUCTORS FOR DC POWER SYSTEMS THAT SERVE CBN OR BOTH CBN AND NBN EQUIPMENT

ISOLATED (I)
CONNECTS TO THE SINGLE POINT CONNECTION BAR (SPCB), FOR NBN 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 ANDREW, (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER)

5 MASTER GROUND BAR DETAILS
NOT TO SCALE

7 NOT USED

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 6
(NEW BUILD)
1545 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: JC
PREPARED BY: LH/AB
APPROVED BY: PH

A	02/01/17 SITE RELOCATION
B	02/14/18 PLAN REVIEW COMMENTS
C	04/27/18 PLAN REVIEW COMMENTS
D	06/05/18 ISSUED FOR PERMIT
E	07/26/18 ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
GROUNDING DETAILS & NOTES

SHEET NUMBER
E-4

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SP-2 SPECIAL INSPECTIONS
SV1 EXISTING SITE SURVEY
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A-1 OVERALL PROPOSED SITE PLAN
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STRUCTURAL
S1.1 STRUCTURAL NOTES
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ELECTRICAL
E-1 ONE LINE DIAGRAM & PANEL SCHEDULE
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WASHINGTON STATE CODE COMPLIANCE:

2015 IBC, STANDARDS AND AMENDMENTS, WAC 51-50
2015 IMC, STANDARDS AND AMENDMENTS, WAC 51-52
2015 IFC, STANDARDS AND AMENDMENTS, WAC 51-54
2015 UPC, STANDARDS AND AMENDMENTS, WAC 51-56, 51-57
2014 NEC, STANDARDS AND AMENDMENTS, WAC 296-46B
2015 IECC, WASHINGTON STATE ENERGY CODE, WAC 51-11C

PROJECT SUMMARY

PROJECT MANAGER: KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT) 401 5TH AVENUE, 8TH FLOOR SEATTLE, WA 98104 CONTACT: MIKE PHUNG PHONE: 206-263-3868 EMAIL: Mai.Phung@KingCounty.gov	A&E VENDOR: ODELIA PACIFIC CORPORATION 1506 4TH AVENUE 3, SUITE 303 SEATTLE, WA 98105 CONTACT: MARK RILEY PHONE: 425-443-2128 EMAIL: MRiley@Odelia.com
TECHNICAL LEAD: KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT) 401 5TH AVENUE, 8TH FLOOR SEATTLE, WA 98104 CONTACT: SEAN DOUGLAS OFFICE: 206-263-8584 MOBILE: 206-550-1898 EMAIL: Sean.Douglas@KingCounty.gov	CONSTRUCTION MANAGER: SUNNY TELECOM INC/P ODELIA PACIFIC CORPORATION 1506 4TH AVENUE 3, SUITE 303 SEATTLE, WA 98105 OFFICE: 206-550-3804 CELLULAR: 206-979-6368 FAX: 206-682-2638 EMAIL: STaschner@Ymail.com
CONSTRUCTION ENGINEER: KING COUNTY DEPARTMENT OF INFORMATION TECHNOLOGY (KCIT) 401 5TH AVENUE, 8TH FLOOR SEATTLE, WA 98104 CONTACT: JOHN A. S. WRIGHT MOBILE: 206-940-0963 EMAIL: John.wright@KingCounty.gov	RF/RFDS CONSULTANT: CAMP 4 ASSOCIATES, INC. 19400 40TH AVE W, SUITE 304 LYNNWOOD, WA 98036 CONTACT: ERIC CAMP PHONE: 425-742-6262 EMAIL: Eric.Camp@CAMP4ASSOC.com

SITE NAME:	BELLEVUE STATION 9
SITE ADDRESS:	12412 NEWCASTLE WAY BELLEVUE, WA 98006
LAND OWNER:	BELLEVUE FIRE DEPARTMENT 766 BELLEVUE WAY SE BELLEVUE, WA 98004
JURISDICTION:	CITY OF BELLEVUE (KING COUNTY)
PARCEL NUMBER:	195182-0080
PARCEL SIZE:	70,282 SQ. FT. (1.61 ACRES)
ZONING:	R-5
OCCUPANCY:	U (UNOCCUPIED)
CONSTRUCTION TYPE:	V-B
SETBACKS:	REQUIRED SETBACKS WERE BASED ON THE BELLEVUE LAND USE CODE (BLUC) SECTION 20.20.195 & 3 AND SECTION 20.20.010
PROJECT AREA:	4,783.75 SQ. FT.
NEW IMPERVIOUS SURFACES:	3,135 SQ. FT.

PROJECT DESCRIPTION:

THE SCOPE OF WORK INCLUDES:
NEW KING COUNTY PUGET SOUND EMERGENCY RADIO NETWORK (PSERN) 170' TOWER AND ASSOCIATED EQUIPMENT TO PROVIDE EMERGENCY RADIO COMMUNICATIONS TO REACH AND COORDINATE WITH EMERGENCY RESPONDERS

PUGET SOUND EMERGENCY RADIO NETWORK

(NEW BUILD)

BELLEVUE STATION 9

12412 NEWCASTLE WAY
BELLEVUE, WA 98006

LATITUDE: 47° 32' 30.51" N (NAD 83)
LONGITUDE: 122° 10' 28.64" W (NAD 83)
GROUND ELEVATION: 434.6' (NAVD 88)

CONFIDENTIAL AND PROPRIETARY

SIGNATURE BLOCK

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

AREA MAP

DRIVING DIRECTIONS:
1) DEPART 401 5TH AVE., SEATTLE, WA ON 5TH AVE. S (SOUTH) [0.2 MI.] 2) TURN RIGHT (WEST) ONTO S JACKSON ST. [184 YDS] 3) TURN LEFT (SOUTH-EAST) ONTO 2ND AVE. EXT S, THEN IMMEDIATELY BEAR RIGHT (SOUTH) ONTO 4TH AVE. S [0.4 MI.] 4) ROAD NAME CHANGES TO WA-519 [0.5 MI.] 5) KEEP STRAIGHT ONTO 4TH AVE. S [21 YDS] 6) KEEP RIGHT ONTO RAMP [0.1 MI.] 7) TURN LEFT (EAST) ONTO EDGAR MARTINEZ DR. S [32 YDS] 8) TAKE RAMP ONTO I-90 [7.3 MI.] 9) AT EXIT 10A, TURN RIGHT ONTO RAMP [0.5 MI.] 10) TAKE RAMP (RIGHT) ONTO I-405 [0.8 MI.] 11) AT EXIT 10, TURN RIGHT ONTO RAMP [0.3 MI.] 12) KEEP LEFT TO STAY ON RAMP [43 YDS] 13) TURN LEFT (SOUTH) ONTO COAL CREEK PKWY (SE) [0.4 MI.] 14) KEEP STRAIGHT ONTO COAL CREEK PKWY (SE) [0.7 MI.] 15) BEAR RIGHT (SOUTH) ONTO COAL CREEK PKWY (SE) [1.4 MI.] 16) TURN RIGHT (WEST) ONTO NEWCASTLE WAY (SE 68TH WAY) [0.8 MI.] 17) ARRIVE 12412 NEWCASTLE WAY, BELLEVUE, WA 98006

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC
PREPARED BY: LN/MD
APPROVED BY: PN

08/05/16	ISSUED FOR PERMIT
07/29/16	ISSUED FOR PERMIT
07/15/16	ISSUED FOR PERMIT
06/01/16	ISSUED FOR PERMIT
04/15/16	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME: TITLE SHEET

SHEET NUMBER: T-1

8/5/16 set

CONTRACTOR NOTES:

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

GENERAL NOTES:

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

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

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

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

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

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

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

ANTENNA SUPPORTING TOWER IS FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION SUB-CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF PERSONNEL AND PROPERTY FROM HAZARDOUS EXPOSURE TO OVERHEAD DANGERS.

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

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

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

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

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

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

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

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

CIVIL NOTES:

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

SUBGRADE AND BASE PREPARATION:

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

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH A.C.I. 301, A.C.I. 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, ALL CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT, AIR-ENTRAINED CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,500 POUNDS PER SQUARE INCH AT 28 DAYS. TYPE I-II PORTLAND CEMENT WILL BE USED WITH A MAXIMUM AGGREGATE SIZE OF 3/4" AND 6% ±1% AIR ENTRAINMENT. ALL CONCRETE WILL HAVE A MAXIMUM WATER/CEMENT (W/C) RATIO OF 0.48
3. ALL CONCRETE FLATWORK SHALL HAVE A STIFF BROOM FINISH AND HAVE A SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
4. REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. A615, GRADE 60, DEFORMED.
5. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILING OF CONC. REINFORCEMENT" (A.C.I. 315-80, REV. 1986).
6. UNLESS OTHERWISE NOTED, ALL LAP SPLICES SHALL BE CLASS B CONFORMING TO ACI 318-95
7. A CHAMFER OF 1" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH A.C.I. 301 SECTION 4.2.4 UNLESS OTHERWISE NOTED.
8. CONCRETE WORK SHALL BE COORDINATED WITH THE MECHANICAL, EQUIPMENT, AND ELECTRICAL WORK TO ASSURE THAT ALL AFFECTED PIPES, CONDUITS, INSERTS, ETC. ARE IN PLACE AND VERIFIED BEFORE PLACING CONCRETE.
9. CONCRETE COVER FOR REINFORCING BARS SHALL CONFORM TO THE FOLLOWING UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
   - CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: 2 INCHES
   - CONCRETE CAST AGAINST EARTH: 3 INCHES
10. COORDINATE LOCATION OF STEEL ANCHOR BOLTS WITH STEEL FABRICATOR PRIOR TO INSTALLATION IN FIELD.
11. CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL WALL/SLAB PENETRATIONS (PIPING, CONDUIT, ETC.) POWER, TELCO AND COAX TO ENTER SITE UNDER EQUIPMENT SLAB

METAL NOTES:

PART 1 – GENERAL

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

PART 2 – PRODUCTS

1. MATERIALS:

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

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

PART 3 – EXECUTION

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

ELECTRICAL NOTES:

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

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

UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT: SCHEDULE 40, TYPE I, CONFORMING TO UL ARTICLE 651: WESTERN PLASTICS OR CARLON MANUFACTURER. COUPLINGS SHALL BE SLIP-ON, SOLVENT SEALED T PIPE: SOLVENT, WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "WIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RGS. (OR PVC ENCASED IN 8"x18" RED CONCRETE DUCTBANK)

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

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

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

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

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

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

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

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

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

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

GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
4. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
5. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS, UNLESS NOTED OTHERWISE.
6. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
7. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
8. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
9. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"ø 10-FT. LONG (OR NOTED OTHERWISE ON PLANS), AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
10. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
12. GROUND RING SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
13. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING, OR FENCE.
14. EXOTHERMIC WELD GROUND CONNECTION TO FENCE POST. TREAT WITH A COLD GALVANIZED SPRAY.
15. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
16. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM).
17. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
18. CONTRACTOR TO VERIFY CURRENT GROUNDING STANDARDS PRIOR TO CONSTRUCTION.

1 GENERAL NOTES

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[illegible] NEWCASTLE WAY
BELLEVUE, WA [illegible]

CAMP+ ASSOCIATES

PROJECT MANAGER: [illegible]
PREPARED BY: [illegible]
APPROVED BY: [illegible]

[illegible]	ISSUED FOR PERMIT
[illegible]	ISSUED FOR PRELIM. PERMIT
[illegible]	ISSUED FOR PRELIM. PERMIT
[illegible]	ISSUED FOR PRELIM. PERMIT
[illegible]	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

SHEET NAME
GENERAL NOTES

SHEET NUMBER
SP-1

STEEL SPECIAL INSPECTIONS

AISC 360 - TABLE N5.4-1
INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	O
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 PLANE)	O	O
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O

AISC 360 - TABLE N5.4-2
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 TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

AISC 360 - TABLE N5.4-3
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 DEFINED BY AISC 85-1 OR INDIVIDUALS QUALIFIED UNDER THE PROVISIONS OF AWS D1.1/D1.1M SUBCLAUSE 8.1.4

O = OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P = PERFORM THESE TASKS FOR EACH BOLTED CONNECTION.

REQUIRED STRUCTURAL OBSERVATION:
STRUCTURAL OBSERVATION FOR SEISMIC RESISTANCE STRUCTURE HEIGHT > 75' PER IBC 1704.3.1

SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC 110 AND 1704 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.

ITEMS TO BE INSPECTED:
1. ANCHOR BOLTS (1/2" ø ANCHOR BOLTS PROVED LOAD TO 1,500 LBS. IN TENSION)
2. HIGH STRENGTH BOLTS (A325 OR EQUIVALENT)

TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	–	P	ACI 318: 20.2, 25.1-25.3	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5B	–	–	AWS D1.4 ACI 318: 26.6.4	–
3. INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED	–	P	ACI 318: 17.8.2, 8.1.3, 21.2.8	1909.1, 1908.1
4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE	–	P	ACI 318: 17.8.2, 8.1.3, 21.2.8	1909.1
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	P	ACI 318: Ch. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE TEMPERATURE OF THE CONCRETE.	X	–	ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8	1910.10
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	P	–	ACI 318: 5.9, 5.10	1910.8, 1910.9, 1910.10
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	P	ACI 318: 5.11, 5.13	1910.8
9. INSPECTION OF PRESTRESSED CONCRETE: A. APPLICATION OF PRESTRESSING FORCES. B. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC-FORCE-RESISTING SYSTEM.	X X	– –	ACI 318: 18.20 ACI 318: 18.18.4	– –
10. ERECTION OF PRECAST CONCRETE MEMBERS.	–	P	ACI 318: Ch. 16	–
11. VERIFICATION OF 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.	–	P	ACI 318: 6.2	–
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	P	ACI 318: 6.2	–

TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASKS	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	P
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	P
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	–	P
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	P	–
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	–	P

TABLE 1705.8
REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASKS	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	P	–
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.	P	–
3. FOR CONCRETE ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH SECTION 1704.4.	–	P

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[redacted]

[redacted]

CAMP+ ASSOCIATES
[redacted]

PROJECT MANAGER: LJC
PREPARED BY: LM/MB
APPROVED BY: PM

08/05/16	ISSUED FOR PERMIT
07/15/16	ISSUED FOR PERMIT
07/01/16	ISSUED FOR PERMIT
06/23/16	ISSUED FOR PERMIT
06/13/16	ISSUED FOR PERMIT

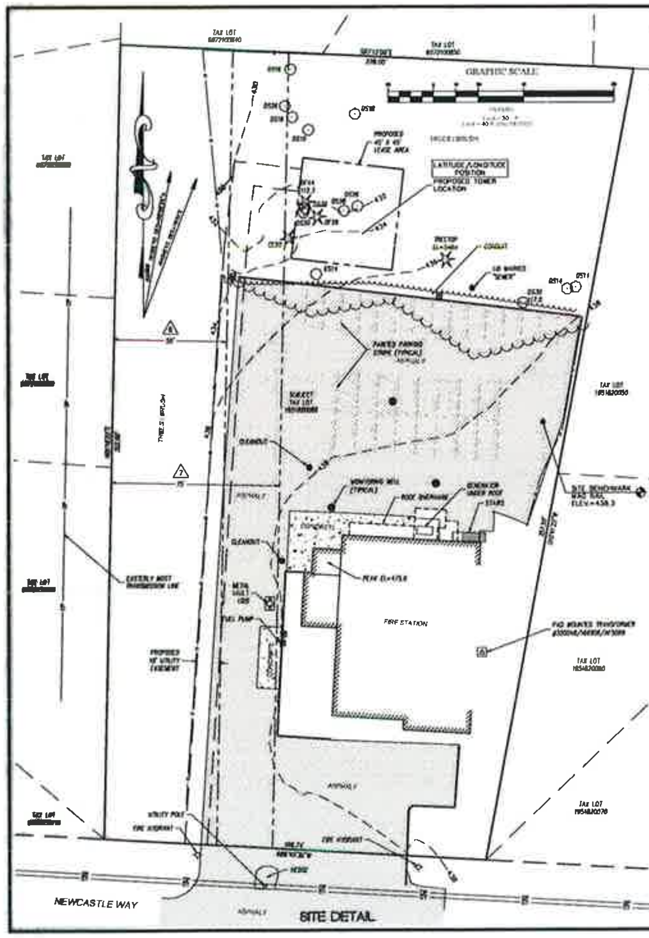
PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
SPECIAL INSPECTIONS

SHEET NUMBER
SP-2

1 SPECIAL INSPECTIONS



LEGAL DESCRIPTION

TRACT A OF DEL MAR WOODS, DIVISION NO. 4, AS RECORDED IN VOLUME 86 OF PLATS, PAGES 38 AND 39, RECORDS OF KING COUNTY, WASHINGTON
SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON

EASEMENTS

△ CORRESPONDS WITH ITEM NO. SCHEDULE B' OF TITLE REPORT

THE FOLLOWING EASEMENTS FROM THE REFERENCED TITLE REPORT CONTAIN SUFFICIENT INFORMATION TO BE DEPICTED ON THE PLAN. OTHER EASEMENTS OR ENCUMBRANCES, IF ANY, MAY AFFECT THE PROPERTY, BUT LACK SUFFICIENT INFORMATION TO BE SHOWN.

△6 ELECTRIC TRANSMISSION LINE EASEMENT, RECORDING NO. 2342829, RECORDS OF KING COUNTY, SHOWN.

△7 EASEMENT AND THE TERMS AND CONDITIONS FOR A ELECTRIC TRANSMISSION LINE AS PROVIDED IN CITY OF SEATTLE ORDINANCE NO. 59399, ORDINANCE DESCRIBES THE WEST 75 FEET OF THE SUBJECT PROPERTY, SHOWN.

△8 MATTERS CONTAINED IN PLAT OF DEL-MAR WOODS DIV 4, RECORDED IN VOLUME 86, PAGE 38, RECORDS OF KING COUNTY – DOCUMENT CONTAINS INSUFFICIENT INFORMATION TO LOCATE HEREON, NOT SHOWN.

LATITUDE/LONGITUDE POSITION

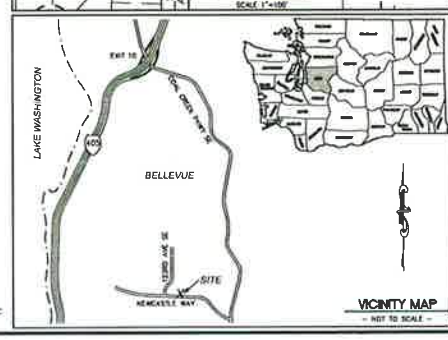
COORDINATE DATA AT PROPOSED TOWER LOCATION:
NAD 83
LAT = 47°32'30.58" N   NAVD 88
LONG = 122°10'28.61" W   ELEV.= 434.0 FEET

BENCHMARK IS "BLVU" WSRN GPS CORS STATION ELEV = 31.2'

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

NOTES

1) TITLE INFORMATION PER GUARANTEE NO. 3037I668-415-TDL PROVIDED BY FIDELITY NATIONAL TITLE OF WASHINGTON, INC., DATED SEPTEMBER 28, 2015.
2) FIELD WORK CONDUCTED IN JULY, 2015
3) BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE (NAD83).
4) UNDERGROUND UTILITIES SHOWN HEREON, IF ANY, WERE DELINEATED FROM SURFACE EVIDENCE AND/OR UTILITY COMPANY RECORDS. CRITICAL LOCATIONS SHOULD BE VERIFIED PRIOR TO DESIGN AND CONSTRUCTION.
5) FEMA DESIGNATION: ZONE X (AREAS DETERMINED TO BE OUTSIDE 500 YEAR FLOODPLAIN), PANEL 666 OF 1725, FIRM MAP NUMBER 53033C0666F, EFFECTIVE DATE MAY 16, 1995



LEGEND

SUBJECT BOUNDARY LINE	
RIGHT-OF-WAY CENTERLINE	
RIGHT-OF-WAY LINE	
ADJACENT BOUNDARY LINE	
SECTIONAL BREAKDOWN LINE	
OVERHEAD POWER LINE	
BURIED POWER LINE	
BURIED GAS LINE	
OVERHEAD TELEPHONE LINE	
BURIED TELEPHONE LINE	
BURIED WATER LINE	
BURIED SANITARY SEWER	
BURIED STORM DRAIN	
DITCH LINE/FLOW LINE	
ROCK RETAINING WALL	
VEGETATION LINE	
CHAIN LINK FENCE	
WOOD FENCE	
BARBED WIRE/WIRE FENCE	
TRANSFORMER	FIRE HYDRANT
LIGHT STANDARD	GATE VALVE
POWER VAULT	WATER METER
UTILITY BOX	FIRE STAND PIPE
UTILITY POLE	CATCH BASIN, TYPE I
POLE GUY WIRE	CATCH BASIN, TYPE II
GAS VALVE	SIGN
GAS METER	BOLLARD
TELEPHONE VAULT	MAIL BOX
TELEPHONE RISER	324.21 SPOT ELEVATION

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

TREE LEGEND

DECIDUOUS TREE
AL12 — TRUNK DIAMETER (IN)
— TYPE

AL=ALDER
MP=MAPLE
DS=DECIDUOUS
MA=MADRONA
OK=OAK
CH=CHERRY

EVERGREEN TREE
DF18
195.2
— HEIGHT AGL IF MEASURED

CE=CEDAR
DF=DOUGLAS FIR
HE=HEMLOCK
PI=PINE
EVG=EVERGREEN

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

SITE INFORMATION

TAX LOT NUMBER	1951820060
SITE ADDRESS	12412 NEWCASTLE WAY BELLEVUE, WA 98006
SITE CONTACT	
PHONE NUMBER	
ZONING	R5 (CITY OF BELLEVUE)
TOTAL LOT AREA	70,382± S.F. (1.61 AC.)
PROJECT AREA	2,025 S.F.

SURVEY REFERENCE

1. PLAT OF DEL-MAR WOODS DIV. 4, RECORDED IN VOLUME 86, PAGE 38, RECORDS OF KING COUNTY
2. PLAT OF NEWPORT HILLS NO. 18, RECORDED IN VOLUME 78, PAGE 36, RECORDS OF KING COUNTY

BOUNDARY DISCLAIMER

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

CAUTION!

UNDERGROUND UTILITIES EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY BE INCOMPLETE. STATE LAW REQUIRES THAT CONTRACTOR CONTACT THE ONE-CALL UTILITY LOCATE SERVICE AT LEAST 48 HOURS BEFORE STARTING ANY CONSTRUCTION.
1-800-424-5555

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

PACIFIC CORPORATION

DUNCANSON
Company, Inc.

SITE
BELLEVUE STA. 40
12412 NEWCASTLE WAY
BELLEVUE, WA 98006
KING COUNTY

FLD. CREW	CR/CT
FLD. BOOK	370/63
DRAWN BY:	RLP
JOB #	15385.05
DATE	7/15/15

REVISIONS

DATE	DESCRIPTION	BY
3/26/16	REVISED LEASE AREA AND TOWER LOCATION	LHC
10/14/15	ADD NEW TITLE REPORT	[illegible]
7/21/15	REVISED LEASE AREA AND TOWER LOCATION, ADDED EASEMENTS	LHC

SHEET TITLE
EXISTING SITE SURVEY
SEC 10, TWP 24 N, RNG 5 E, WM

SHEET NUMBER
SV1

SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.

BELLEVUE STATION 9

12412 NEWCASTLE WAY

BELLEVUE, WA 98006

CAUTION!
CALL BEFORE YOU DIG
1-800-424-5555

SHEET INDEX

VICINITY MAP

APPLICANT

CONSULTANTS

ARCHITECT

CIVIL ENGINEER

SURVEYOR

SOIL/GEOTECH ENGINEER

LEGAL DESCRIPTION

BENCHMARK

DATUM

SITE AREAS

GENERAL NOTES

EROSION CONTROL PLAN NOTES

STORM DRAINAGE GENERAL NOTES

RECOMMENDED CONSTRUCTION SEQUENCE

LEGEND

DESCRIPTION	EXISTING	PROPOSED	ABBREVIATIONS			
[illegible]						

King County

BELLEVUE STATION 9

(NEW BUILD)

CG ENGINEERING

CG PROJECT# 18015.902

PROJECT MANAGER

PREPARED BY

APPROVED BY

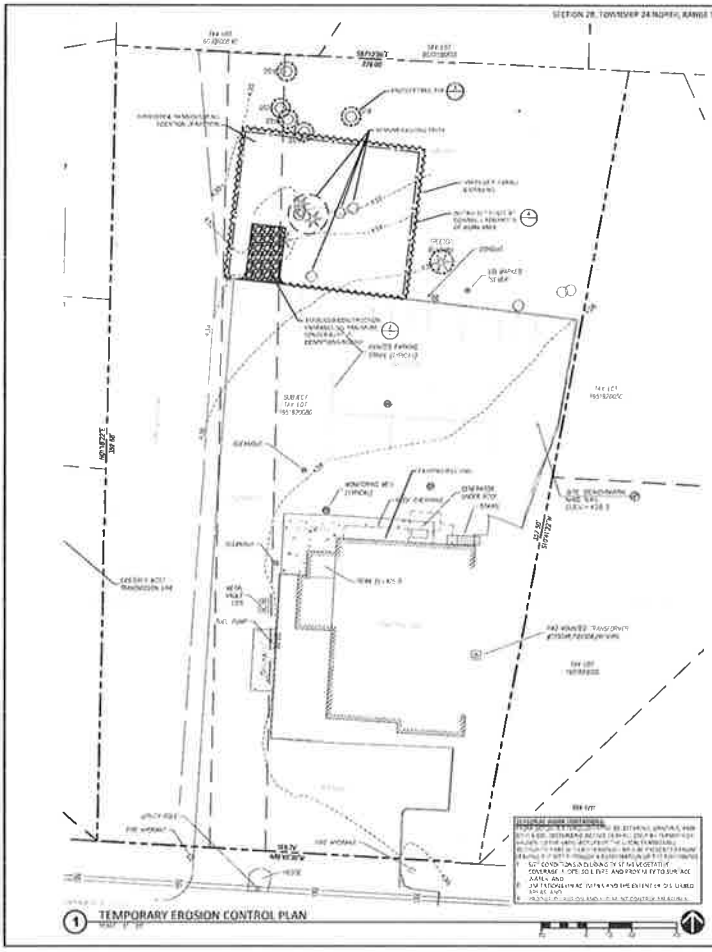
PLAN REVIEWERS SIGNATURE

SHEET NAME

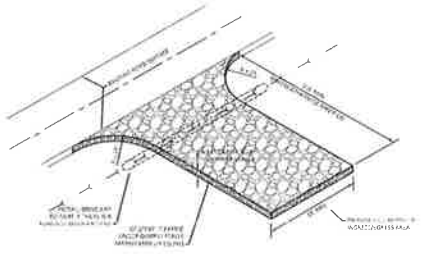
COVER SHEET AND GENERAL NOTES

SHEET NUMBER

C1.1



1 TEMPORARY EROSION CONTROL PLAN



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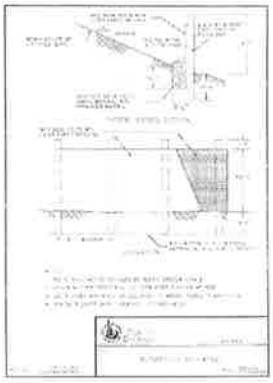
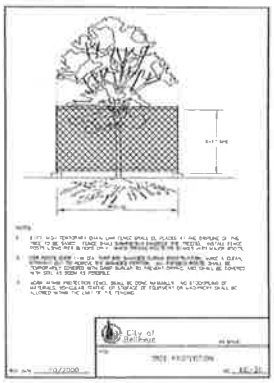


3 CITY OF BELLEVUE STANDARD DETAIL



4 CITY OF BELLEVUE STANDARD DETAIL

King County

BELLEVUE STATION 9

[redacted]

12419 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING

250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE: (425) 778-0560
FAX: (425) 778-3539

CG PROJECT# 16015.902

PROJECT MANAGER	JPJ
PREPARED BY	ZDS
APPROVED BY	GAS

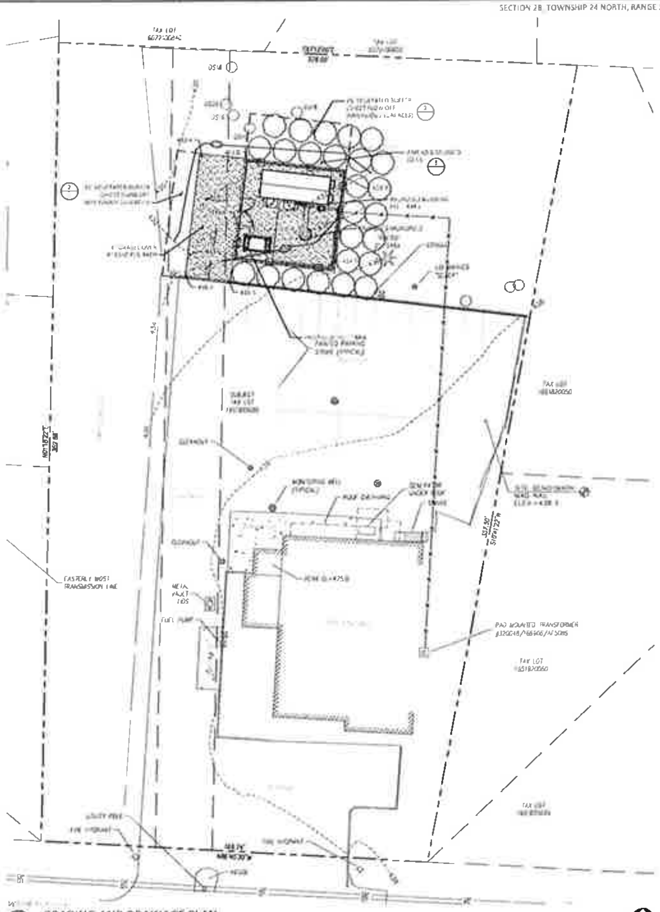
NO	DATE	DESCRIPTION
1	[redacted]	[redacted]
2	[redacted]	[redacted]
3	[redacted]	[redacted]

PLAN REVIEWERS SIGNATURE

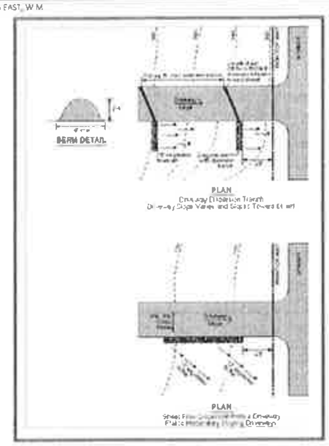
SHEET NAME
TEMPORARY EROSION CONTROL PLAN

SHEET NUMBER
C2.1

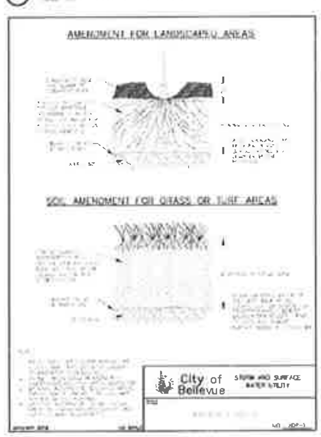
SECTION 28, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.



① GRADING AND DRAINAGE PLAN



② SHEET FLOW DISPERSION DETAIL

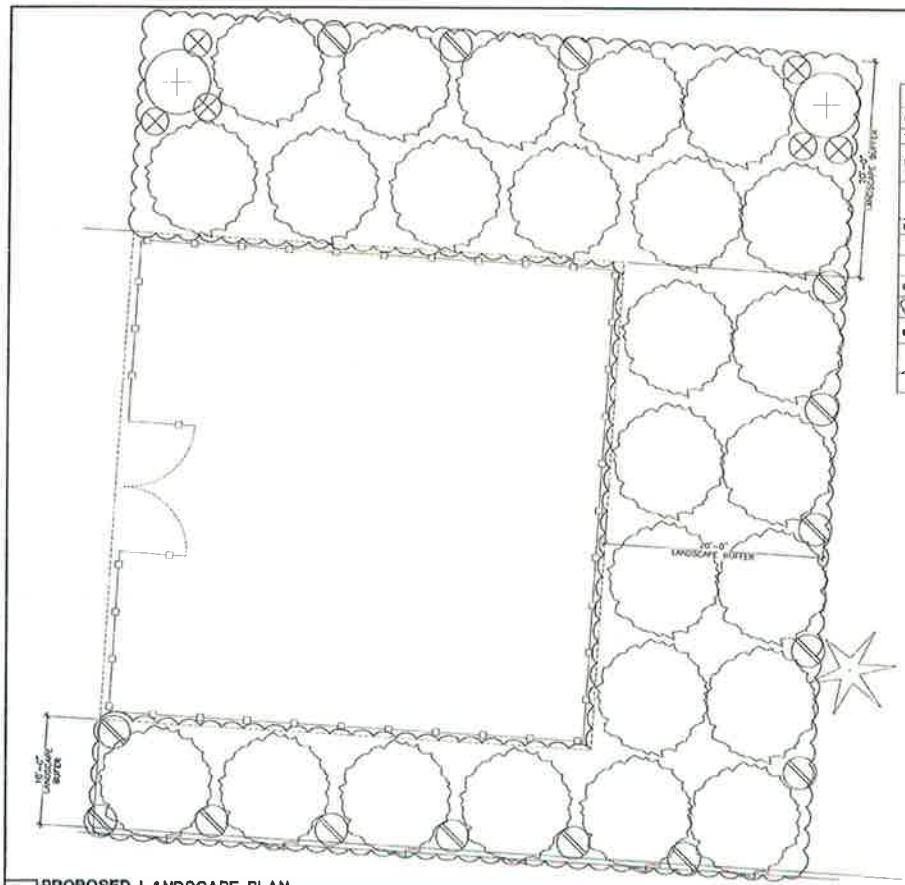


③ CITY OF BELLEVUE STANDARD DETAIL

GRADING QUANTITIES

[illegible]

King County	
BELLEVUE STATION 9 (NEW BUILD) 13412 NEWCASTLE WAY BELLEVUE WA 98006	
CG ENGINEERING	
CG PROJECT# 16015.902	
PROJECT MANAGER	JPU
PREPARED BY	ZES
APPROVED BY	GAB
PLAN REVIEWERS SIGNATURE	
SHEET NAME	GRADING AND DRAINAGE PLAN
SHEET NUMBER	C3.1



PLANT SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE/COMMENTS
TREES			
	ACER CIRCINATUM	VINE MAPLE	8'-10' HT B&B
	CALOCEDRUS DECURRENS	INCENSE CEDAR	6'-7' HT B&B
SHRUBS			
	SPIRAEA DOUGLASII	DOUGLAS SPIREA	2 GAL CONT SPECIMEN QUALITY
	VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	5 GAL CONT SPECIMEN QUALITY
GROUNDCOVER			
	GAULTHERIA SHALLON	SALAL	1 GAL PLANT @ 24" O.C.
EXISTING TREES			
	EXISTING TREE TO REMAIN		PROTECT AND PRUNE

LANDSCAPE NOTES:

1. A TEMPORARY IRRIGATION SYSTEM SHALL BE PROVIDED FOR OPERATION THROUGHOUT TWO GROWING SEASONS, MAY 1ST TO SEPTEMBER 30TH, FOLLOWING PLANT INSTALLATION.
2. PROVIDE 3" BARK MULCH THROUGHOUT ALL PLANTING BEDS.
3. AMEND DISTURBED SOILS AS PER CITY STANDARDS (SEE DETAILS SHEET C3.1)
4. PRESERVE ALL EXISTING TREES OUTSIDE OF LEASE AREA AND PROPOSED LANDSCAPE BED AREAS. FOR TREE PROTECTION FOLLOW CITY DETAIL STANDARDS (SEC SHEET C2.1)
5. PROVIDE MINIMUM 8" OF TOPSOIL THROUGHOUT AND PIT PLANTING SOIL OF 2x SIZE OF ROOT BALL

STATE OF WASHINGTON
LANDSCAPE ARCHITECT
T. SHAWN PARSONS
CERTIFICATE NO. 307

NORTH

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

King County

KCSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

13412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER:

PREPARED BY:

APPROVED BY:

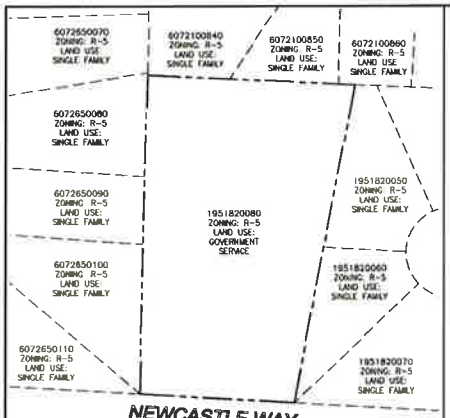
12/19/13	ISSUED FOR PERMIT REVIEW
01/29/14	ISSUED FOR PERMIT REVIEW
04/03/14	ISSUED FOR PERMIT REVIEW
04/11/14	ISSUED FOR PERMIT REVIEW
05/16/14	ISSUED FOR PERMIT REVIEW

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

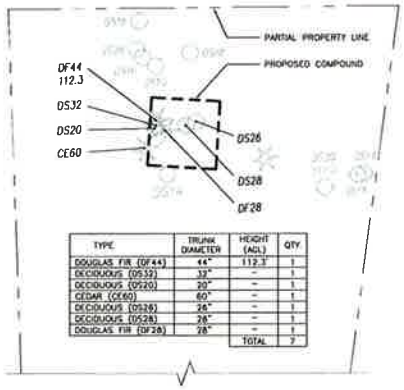
SHEET NAME
PROPOSED LANDSCAPE PLAN

SHEET NUMBER
L-1



ADJACENT PARCEL ZONING AND LAND USE

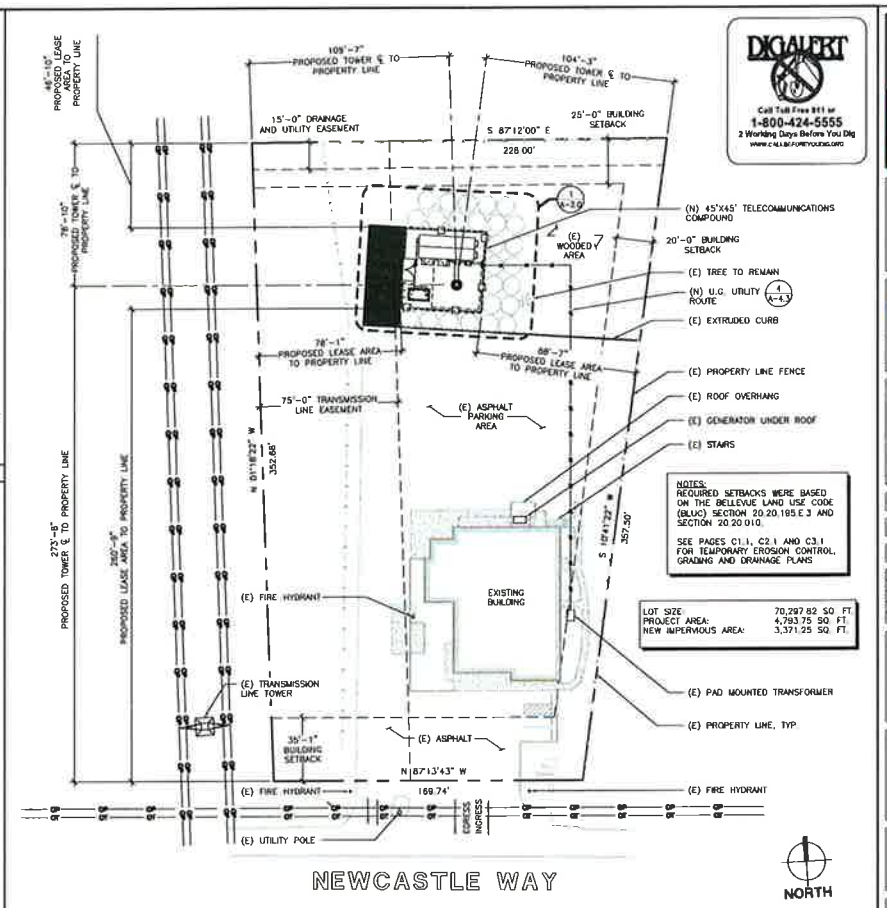
SCALE: NONE



TYPE	TRUNK DIAMETER	HEIGHT (AGL)	QTY.
DOUGLAS FIR (DF44)	44"	112.3'	1
DECIDUOUS (DS32)	32"	-	1
DECIDUOUS (DS20)	20"	-	1
CEDAR (CE60)	60"	-	1
DECIDUOUS (DS26)	26"	-	1
DECIDUOUS (DS28)	28"	-	1
DOUGLAS FIR (DF28)	28"	-	1
		TOTAL	7

TREES TO BE REMOVED

SCALE: NONE



OVERALL PROPOSED SITE PLAN

SCALE: 1" = 25'-0" (22x34), 1" = 50'-0" (11x17)

DIGALERT
Call Toll Free 811 or
1-800-424-5555
2 Working Days Before You Dig
www.CALLBEFOREYOUDIG.ORG

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 0
(NEW BUILD)
1848 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+
ARCHITECTS

PROJECT MANAGER: CJC
PREPARED BY: LM/MD
APPROVED BY: PR

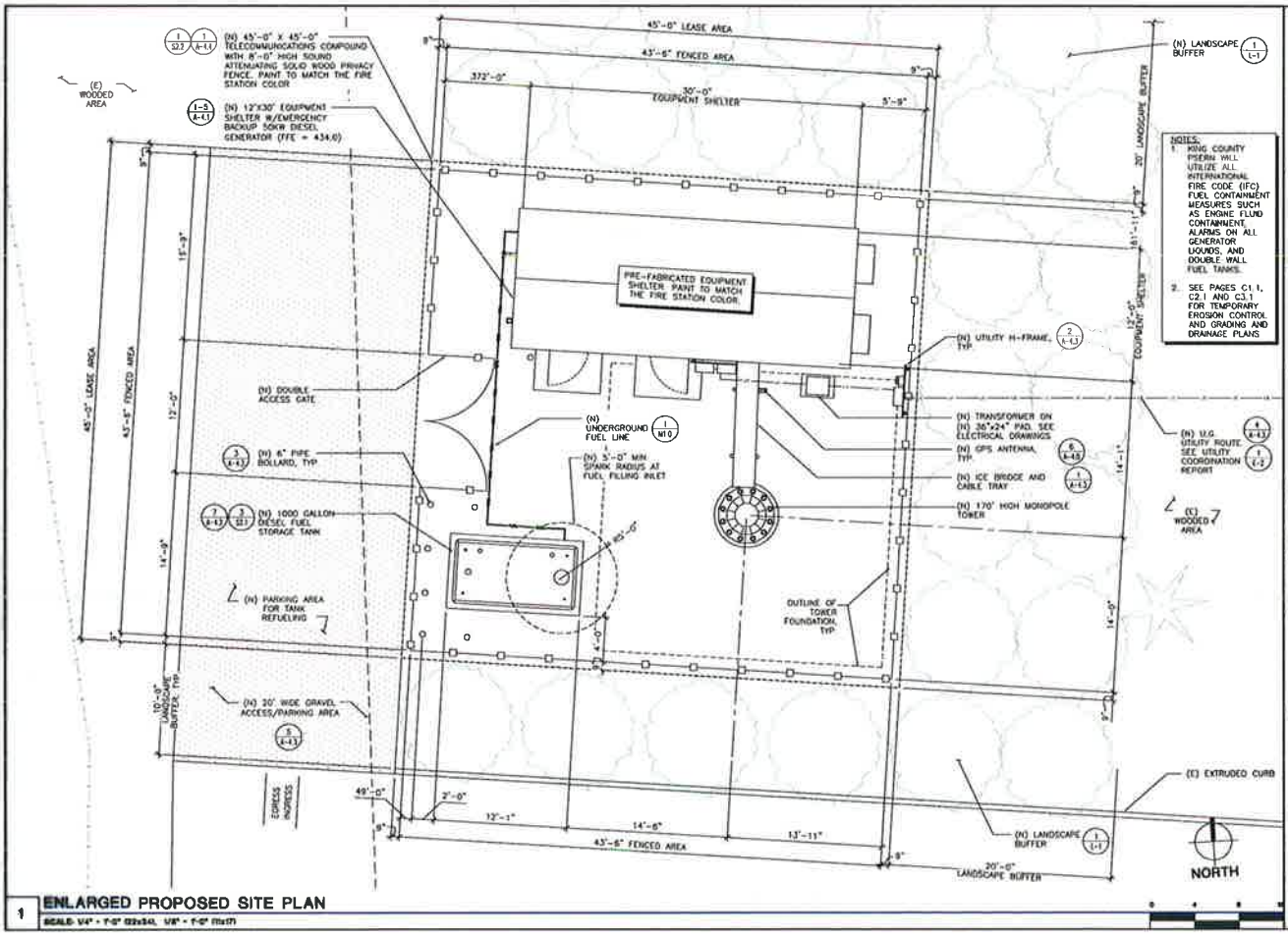
08/30/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT
07/05/18	ISSUED FOR PRELIM. PERMIT
06/27/18	ISSUED FOR PRELIM. PERMIT
04/13/18	ISSUED FOR PRELIM. PERMIT

PLAN REVISIONS DESCRIPTIONS

ARCHITECT'S STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
OVERALL PROPOSED SITE PLAN

SHEET NUMBER
A-1



1 ENLARGED PROPOSED SITE PLAN

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

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

19412 RENTON AVE SE
BELLEVUE, WA 98058

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC

PREPARED BY: LM/WD

APPROVED BY: PN

06/01/18	ISSUED FOR PERMIT
01/26/18	ISSUED FOR PRELIM. PERMIT
07/05/18	ISSUED FOR PRELIM. PERMIT
06/01/18	ISSUED FOR PRELIM. PERMIT
04/13/18	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
ENLARGED PROPOSED SITE PLAN

SHEET NUMBER
A-2.0

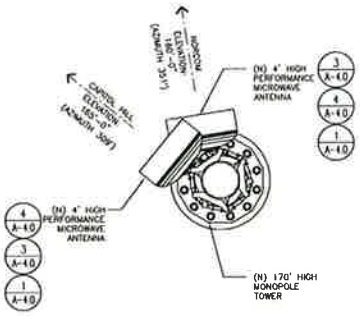
ANTENNA / COAX SCHEDULE

RAD CENTER	PATH	MOUNTING HEIGHT	AZIMUTH	TOWER LEG	QTY.	DESCRIPTION	COAX	COAX LENGTH
165'-0"	CAPITOL HILL	"	309°	"	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±200'
160'-0"	NORDOM	"	351°	"	1	4' HIGH PERFORMANCE MICROWAVE ANTENNA	EW90	±195'
"	"	135'-0"	"	"	2	17'-4" COLLINEAR RX OMNI ANTENNA	AVA5-50FX	±165'
"	"	135'-0"	"	"	2	17'-4" COLLINEAR TX OMNI ANTENNA	AVA5-50FX	±165'

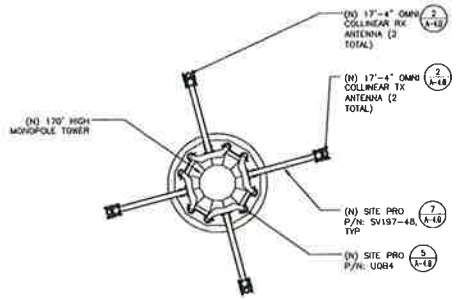
NOTE:
PROVIDE (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM.
SYSTEM SHALL INCLUDE: (1) DUAL DIVERSITY TOWER TOP AMPLIFIER SYSTEM (TTA).
(4) 7/8" COAXIAL CABLES (2 LINE ARE JUMPERS FROM THE TTA TO ANTENNAS).
(1) 1/2" COAXIAL CABLE (FSJ4-50B).

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.



1 **MW ANTENNA PLAN AT 160' AND 165'**
SCALE: 1/4" = 1'-0" (22x34), 1/8" = 1'-0" (11x17)



2 **ANTENNA PLAN AT 135'**
SCALE: 1/4" = 1'-0" (22x34), 1/8" = 1'-0" (11x17)

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[redacted]

[redacted]

CAMP+ ASSOCIATES
[redacted]

PROJECT MANAGER: CJC
PREPARED BY: LB/KB
APPROVED BY: PH

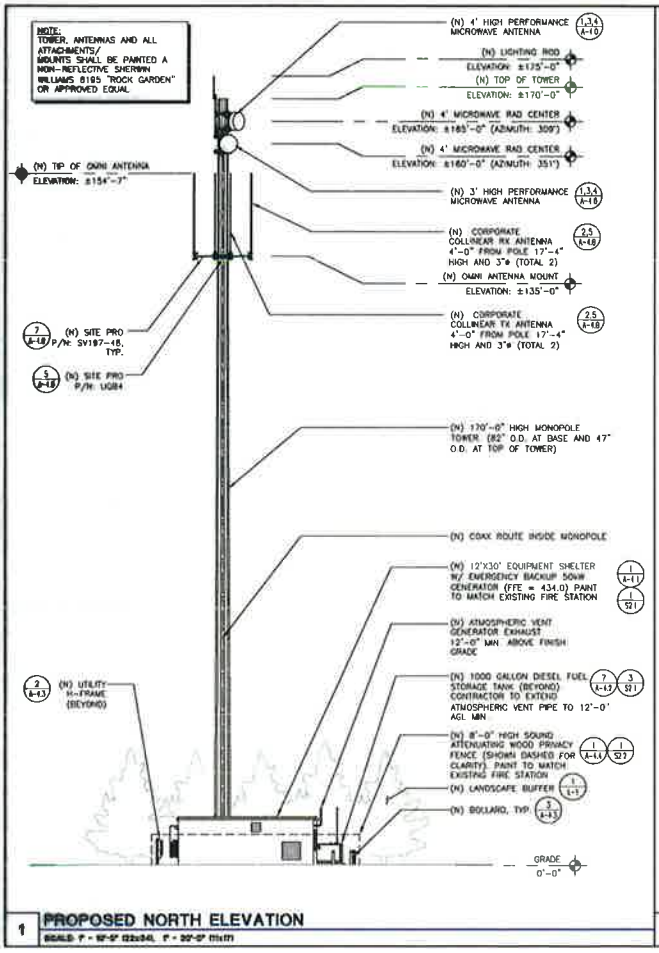
06/05/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT
07/30/18	ISSUED FOR PRELIM. PERMIT
08/02/18	ISSUED FOR PRELIM. PERMIT
04/15/19	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWING SIGNATURE

ARCHITECT'S STAMP
[redacted]
REGISTERED ARCHITECT
STATE OF WASHINGTON

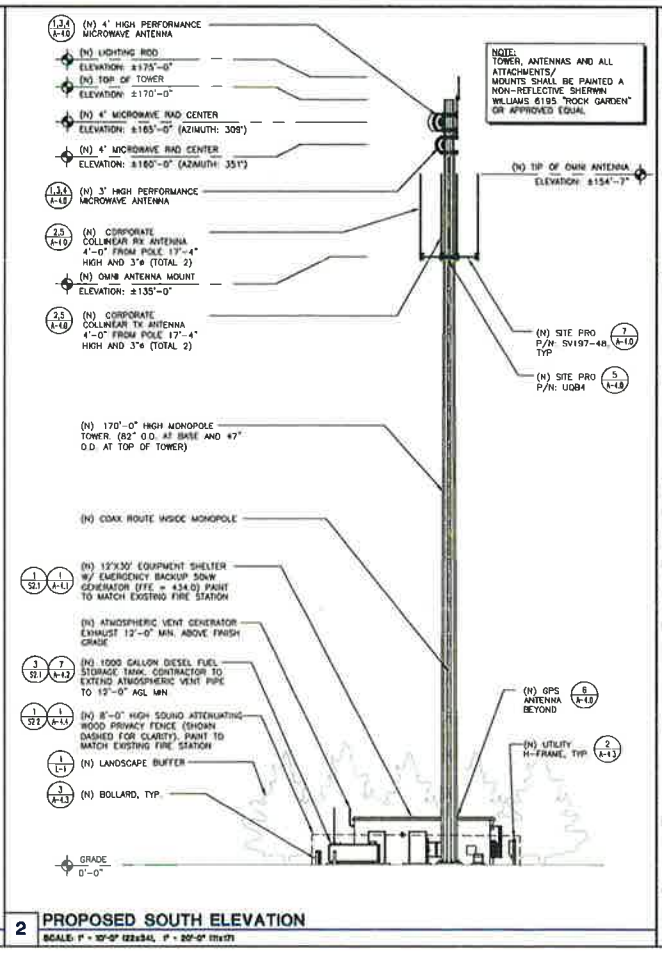
SHEET NAME
PROPOSED ANTENNA PLAN

SHEET NUMBER
A-2.1



1 PROPOSED NORTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 PROPOSED SOUTH ELEVATION

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

1241B NEWCASTLE WAY
BELLEVUE, WA 98006

1150 5TH AVE S, SUITE 202
SEATTLE, WA 98134
PH: (206) 292-9766
FAX: (425) 259-2679
WWW.CBSEA.COM

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC

PREPARED BY: LM/MS

APPROVED BY: PM

08/01/18	ISSUED FOR PERMIT
07/24/18	ISSUED FOR PRELIM. PERMIT
07/05/18	ISSUED FOR PRELIM. PERMIT
06/13/18	ISSUED FOR PRELIM. PERMIT
04/13/18	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

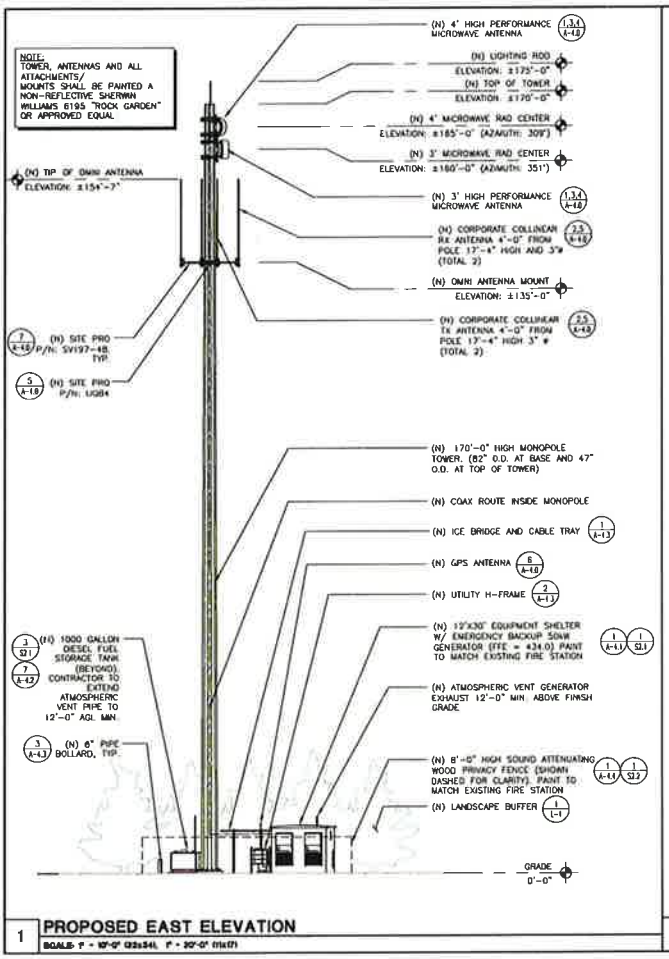
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME

PROPOSED ELEVATIONS

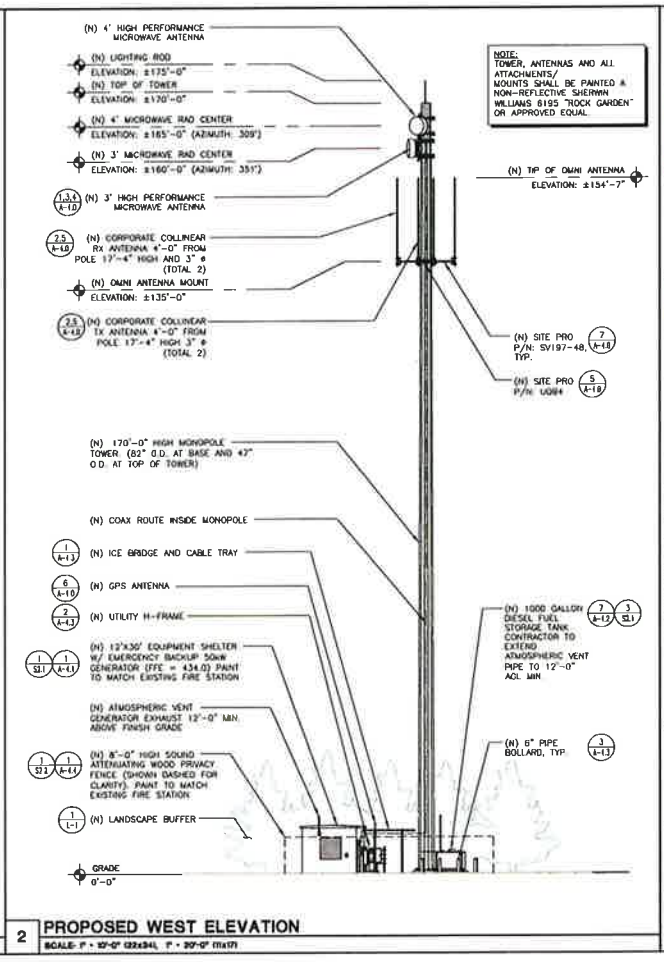
SHEET NUMBER

A-3.0



1 **PROPOSED EAST ELEVATION**

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)



2 **PROPOSED WEST ELEVATION**

SCALE: 1" = 10'-0" (22x34), 1" = 20'-0" (11x17)

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

15400 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: LC

PREPARED BY: LM/MB

APPROVED BY: PH

06/01/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PERMIT
07/30/18	ISSUED FOR PERMIT
08/01/18	ISSUED FOR PERMIT
08/13/18	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

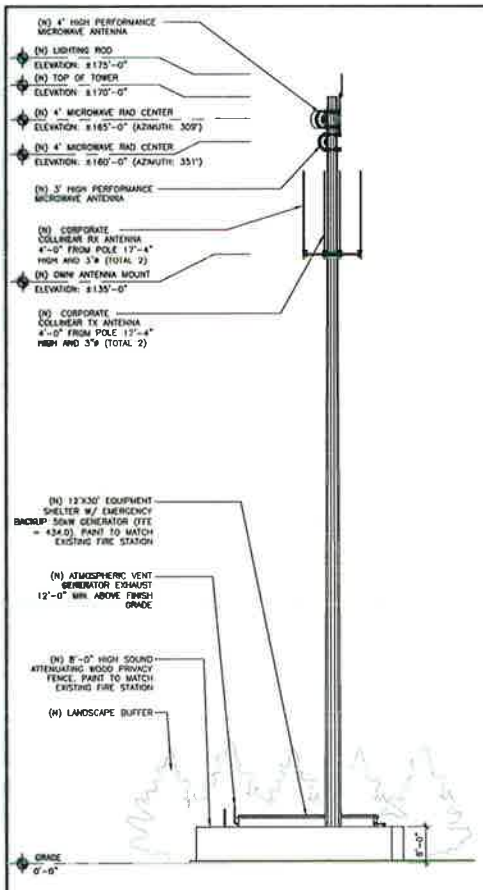
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME

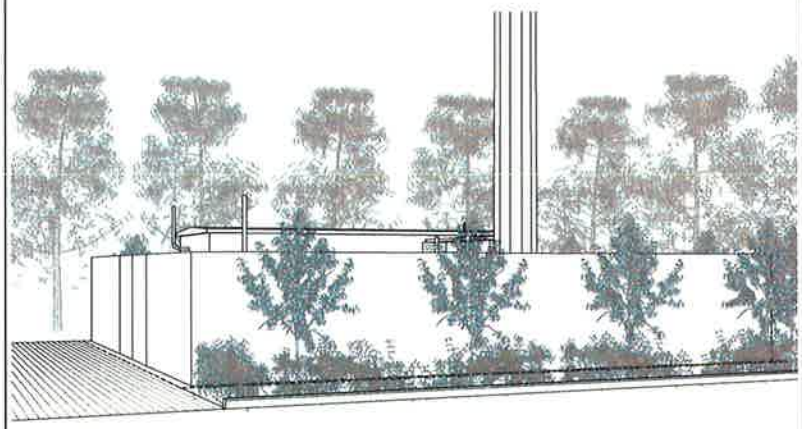
PROPOSED ELEVATIONS

SHEET NUMBER

A-3.1



1 **PROPOSED SOUTH ELEVATION**
NOT TO SCALE



2 **PROPOSED SOUTHWEST VIEW DETAIL**
NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[redacted]

CAMP+ ASSOCIATES
[redacted]

PROJECT MANAGER: [redacted]
PREPARED BY: [redacted]
APPROVED BY: [redacted]

05/01/18	ISSUED FOR PERMIT
01/08/18	ISSUED FOR PERMIT
01/05/18	ISSUED FOR PERMIT
06/01/18	ISSUED FOR PERMIT
04/13/18	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
[redacted]

SHEET NAME
PROPOSED SOUTHWEST VIEW DETAIL

SHEET NUMBER
A-3.2

GENERAL NOTES:

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

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

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

- GENERAL NOTES

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
(1)	1	E-LWRM	RING MOUNT WELDMENT		58.16	201.48
(2)	4	CUMP-15	5/8" - 11 NC THREADED ROD (GR5)	18.45	0.33	3.18
(3)	3	CUMP-21	5/8" - 11 NC THREADED ROD (GR5)	21.45	0.33	3.18
(4)	16	ASWR	5/8" HDG A325 FLATWASHER		0.03	0.81
(5)	16	CWLR	5/8" HDG LOCKWASHER		0.03	0.81
(6)	16	ASHNUT	5/8" HDG A325 2H-H NUT		0.13	2.24
					TOTAL WT.	281.10

12' TO 45' DIAMETER MONOPOLE (REF.)

REQUIRED ROD LENGTH IS EQUAL TO THE POLE DIAMETER (THREADED ROD MAY BE CUT TO LENGTH AS REQUIRED

24" OR 48" STANDARD (CUT AS REQUIRED)

6" TYP.

6" TYP.

3 UNIVERSAL RING MOUNT ASSEMBLY (SITEPRO P/N: LWRM)

NOT TO SCALE

NOTES:

1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.
3. THE WEIGHT OF THE ANTENNA MOUNT = 8.5 LBS.
4. IF ICE BRIDGE OR 6MM AR POST IS NOT GROUNDED, PROVIDE GROUNDING WITH #3 AWG TINNED BARE COPPER WIRE ELECTRICALLY BONDED TO LOWER PART OF POST AND CONNECTED TO GROUND RING

GPS ANTENNA

1 1/4" NOMINAL DIAMETER (1.66" ACTUAL O.D.) X 3'-0" MIN. SCHEDULE 40 GALVANIZED STEEL MOUNTING PIPE. (SEE NOTE 4)

SITE PRO UNIVERSAL PIPE-TO-PIPE CLAMP SET MODEL NO. UPC1

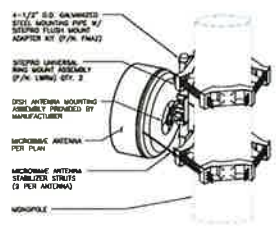
ICE BRIDGE POST OR SIMILAR POST

GROUNDING KIT

#3 AWG, GROUND WIRE

6" DIA. COAX CABLE. 5" MIN. BENDING RADIUS

6



1 DISH ANTENNA MOUNTING

NOT TO SCALE

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
(1)	4	E-SITEPRO	BENT PLATE Y-CLAMP	72-5/8 W	11.43	45.72
(2)	24	CWLR	5/8" HDG LOCKWASHER		0.03	0.81
(3)	24	ASHNUT	5/8" HDG HEAVY SH HEX NUT		0.13	3.12
(4)	8	CUMP-11	5/8" x 12" THREADED ROD (GR5)		0.33	7.81
					TOTAL WT.	57.35

DETAIL A

LWRM UNIVERSAL RING MOUNT FOR POLES 9'1" TO 45' DIA. (ORDERED SEPARATELY) OR UQLM MINI RING MOUNT FOR POLES 10 1/2" TO 28' DIA. (ORDERED SEPARATELY)

SECTION A-A

DETAIL B

4 FLUSH MOUNT ADAPTER KIT (SITEPRO P/N: FMA2)

NOT TO SCALE

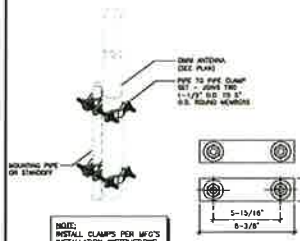
PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	E-SITE	QUAD BRACKET	14 1/8	58.48	233.84
2	24	ASWR	5/8" HDG A325 FLATWASHER	0.03	0.03	0.81
3	24	CWLR	5/8" HDG LOCKWASHER	0.03	0.03	0.81
4	24	ASHNUT	5/8" HDG A325 HEX NUT	0.13	0.13	3.12
5	12	CUMP-90	5/8" x 90" THREADED ROD (GR5)	0.33	7.35	4.23
					TOTAL WT.	283.11

12' TO 45' DIAMETER MONOPOLE (REF.)

7 SITE PRO QUAD UNIVERSAL RINGMOUNT UQB4 DETAIL

NOT TO SCALE



NOTE: INSTALL CLAMPS PER MFG'S INSTALLATION INSTRUCTIONS

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	DCPXK	CLAMP, PIPE TO PIPE, 4-3/8"		7.25	13.25
2	4	CUMP-11	5/8" - 11 NC THREADED ROD		0.33	1.98
3	4	ASHNUT	5/8" HDG A325 2H-H NUT		0.13	0.78
4	4	CWLR	5/8" HDG LOCKWASHER		0.03	0.18
5	4	ASWR	5/8" HDG A325 FLATWASHER		0.03	0.18

VARIABLE PARTS TABLE

ASSEMBLY "A"	QTY "B"	PART "C"	LENGTH "D"	UNIT WT "C"	UNIT WT "D"	TOTAL WEIGHT
[illegible]	1	[illegible]	12	1.98	0.78	10.72

FITS 1-1/2" TO 5" PIPE O.D.

2 OMNI ANTENNA MOUNTING WITH SITE PRO DCPXK PIPE TO PIPE CLAMP

NOT TO SCALE

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SV197-48	SUPPORT ARM WELDMENT - 48"		74.72	74.72
2	4	ASHCAP	5/8" - 2 1/2" HDG A325 HEX BOLT		0.36	1.42
3	4	ASWR	5/8" HDG A325 FLATWASHER		0.03	0.14
4	4	CWLR	5/8" HDG LOCKWASHER		0.03	0.12
5	4	ASHNUT	5/8" HDG A325 HEX NUT		0.13	0.52
					TOTAL WT.	76.90

4-1/2" O.D.

ISOMETRIC VIEW

TOP

FRONT

SIDE

5 SITE PRO 48" SUPPORT ARM SV197-48 DETAIL

NOT TO SCALE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

1648 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: LJC

PREPARED BY: LK/MS

APPROVED BY: PK

08/02/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT
07/09/18	ISSUED FOR PRELIM. PERMIT
06/01/18	ISSUED FOR PRELIM. PERMIT
04/11/18	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

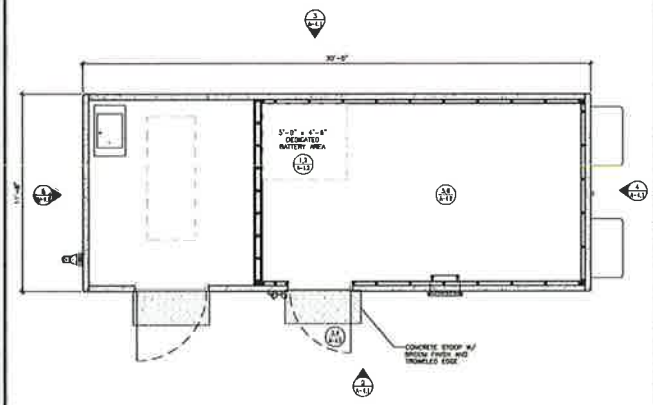
ARCHITECTS STAMP

SHEET NAME

ANTENNA MOUNTING DETAILS

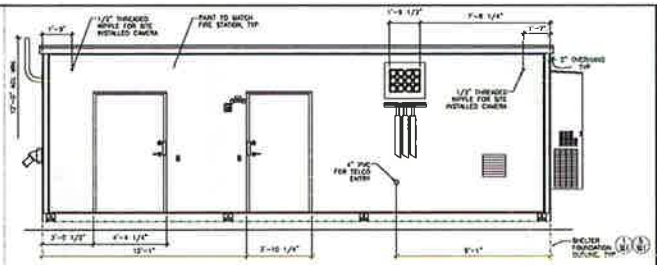
SHEET NUMBER

A-4.0

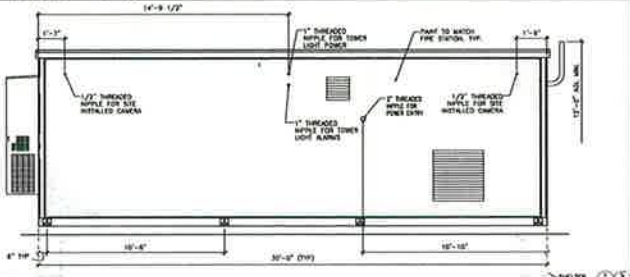


NOTES:
1. SHELTER IS OWNER FURNISHED, CONTRACTOR INSTALLED (O.F.C.I.).
2. ALL MEASUREMENTS SHALL BE VERIFIED WITH PREFABRICATED SHELTER SHOP DRAWING PRIOR TO ANY CONSTRUCTION WORK OR COORDINATION.
3. REFER TO STRUCTURAL DRAWINGS FOR SHELTER FOUNDATION AND SHELTER ANCHORING TO FOUNDATION DETAILS.
4. CONTRACTOR TO USE EXOTHERMIC WELD AT ALL GROUND TAILS FROM BUILDING TO GROUND RING. SEE ALSO GROUNDING PLAN.

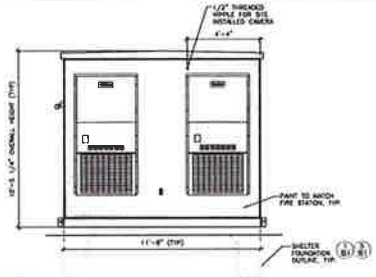
1 TYPICAL SHELTER PLAN VIEW
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)



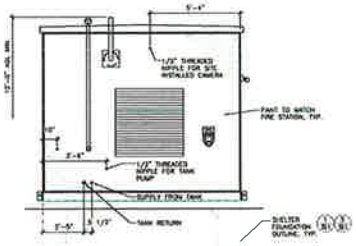
2 FRONT ELEVATION
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)



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



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



5 LEFT ELEVATION
SCALE 3/8" = 1'-0" (22x34) 3/16"= 1'-0" (11x17)

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 8
(NEW BUILD)
12418 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: L/C
PREPARED BY: LH/RC
APPROVED BY: PH

08/02/16	ISSUED FOR PERMIT
07/29/16	ISSUED FOR PRELIM. PERMIT
07/05/16	ISSUED FOR PRELIM. PERMIT
06/02/16	ISSUED FOR PRELIM. PERMIT
04/13/16	ISSUED FOR PRELIM. PERMIT

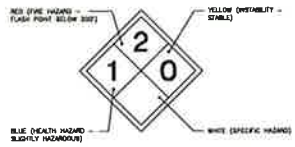
PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
SHELTER DETAILS

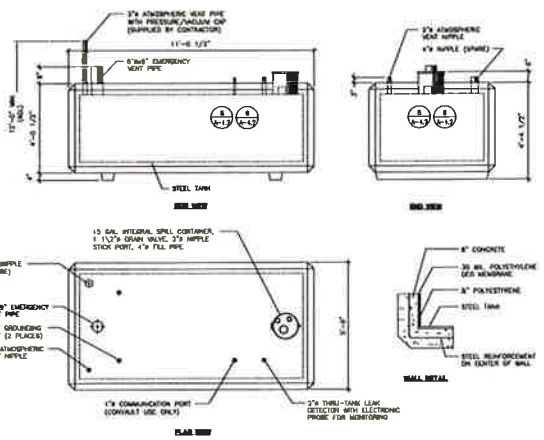
SHEET NUMBER
A-4.1

9 COMBUSTIBLE LIQUIDS SIGN
NOT TO SCALE



8 HAZARDOUS MATERIAL CLASSIFICATION SIGN (DIESEL)
NOT TO SCALE

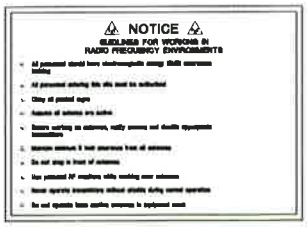
4 RF WARNING SIGN
NOT TO SCALE



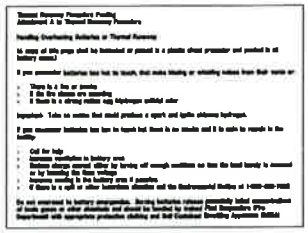
CONVAULT 1000 GAL. TANK NOTES:
1. STEEL TANK SHALL BE U.L. 142 LISTED FOR ABOVE GROUND STORAGE OF FLAMMABLE LIQUIDS.
2. STEEL TANK SKIN SHALL BE 3/16" THICK A.S.T.M. A-36 STEEL PLATE.
3. ALL EXPOSED METAL WITH THE EXCEPTION OF STAINLESS STEEL MUST BE POWDER COATED TO INHIBIT CORROSION.
4. STEEL TANKS 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 SHALL 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



6 RF NOTICE SIGN
NOT TO SCALE



1 THERMAL RUNAWAY PROCEDURE
NOT TO SCALE

2 CORROSIVE LIQUIDS SIGN
NOT TO SCALE

3 N.O.C.C. SIGN
NOT TO SCALE

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
[redacted]

[redacted]

[redacted]

PROJECT MANAGER: CJC
PREPARED BY: LM/MB
APPROVED BY: PM

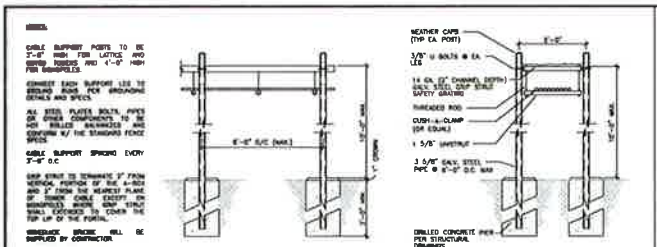
02/02/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT
07/02/18	ISSUED FOR PRELIM. PERMIT
06/01/18	ISSUED FOR PRELIM. PERMIT
04/13/18	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

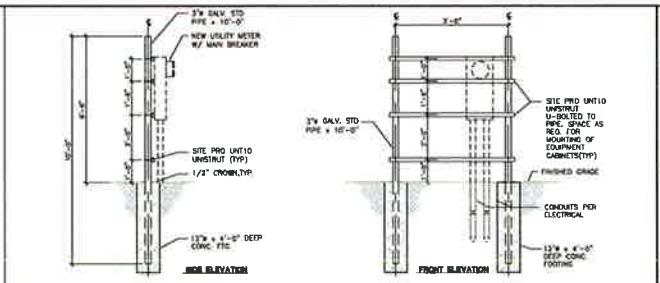
SHEET NAME
FUEL TANK AND SIGNAGE DETAILS

SHEET NUMBER
A-4.2

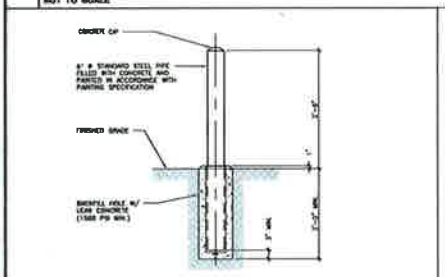


1 ICE BRIDGE DETAIL - 2 POST

NOT TO SCALE

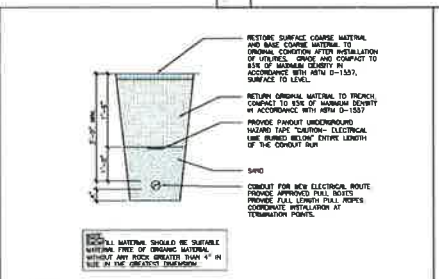


2 UTILITY RACK DETAIL



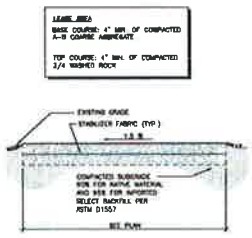
3 BOLLARD DETAIL

NOT TO SCALE



4 ELECTRICAL TRENCH DETAIL

NOT TO SCALE



5 GRAVEL PAVING DETAIL

NOT TO SCALE

6 NOT USED

NOT TO SCALE

7 NOT USED

-

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

[redacted] NEWCASTLE WAY
BELLEVUE, WA [redacted]

[redacted]

CAMP+

[redacted]

PROJECT MANAGER: [redacted]

PREPARED BY: [redacted]

APPROVED BY: PH

06/05/14	ISSUED FOR PERMIT
07/24/14	ISSUED FOR PERMIT
07/25/14	ISSUED FOR PERMIT
08/22/14	ISSUED FOR PERMIT
09/15/14	ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP

REGISTERED ARCHITECT

[redacted]

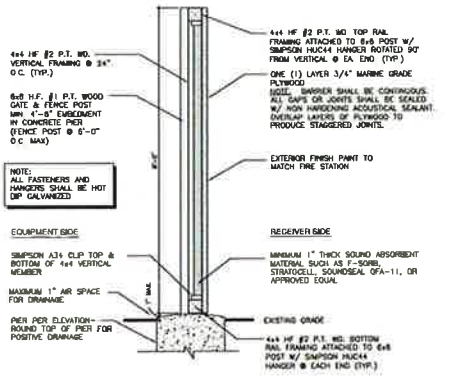
STATE OF WASHINGTON

SHEET NAME

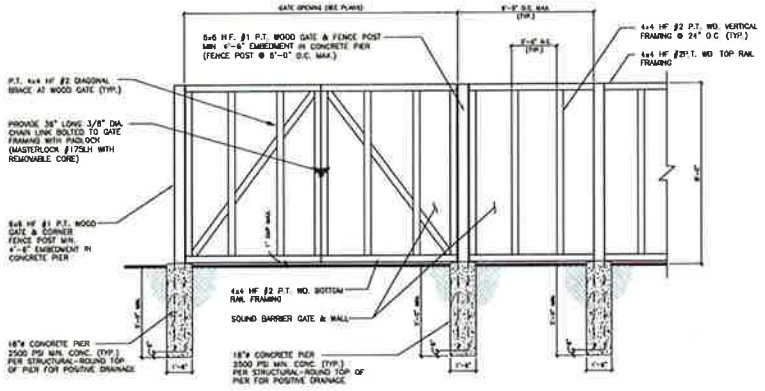
DETAILS

SHEET NUMBER

A-4.3



SECTION



ELEVATION

NOTES:

1. MATERIALS SUCH AS SIDING MAY BE ADDED TO THE EXTERIOR SIDE OF THE BARRIER WALL CONSTRUCTION BUT MAY NOT SUBSTITUTE FOR REQUIRED BARRIER MATERIALS SUCH AS PLYWOOD OR SHEET METAL.
2. SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION

1 SOUND ATTENUATING FENCE ASSEMBLY DETAILS

NOT TO SCALE

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION #

(NEW BUILD)

[redacted]

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC

PREPARED BY: LM/MD

APPROVED BY: PH

08/02/18	ISSUED FOR PERMIT
07/26/18	ISSUED FOR PRELIM. PERMIT
07/02/18	ISSUED FOR PRELIM. PERMIT
06/22/18	ISSUED FOR PRELIM. PERMIT
04/13/18	ISSUED FOR PRELIM. PERMIT

PLAN REVISIONS SUBMITTED

ARCHITECT'S STAMP

[redacted]

SHEET TITLE

SOUND ATTENUATING FENCE ASSEMBLY DETAILS

SHEET NUMBER

A-4.4

STRUCTURAL NOTES

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

CODE

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

DESIGN LOADS

DEAD LOADS:
BUILDING WEIGHT — 100.5 KIPS ([illegible] KIPS BLDG WT + 20.5 KIPS EQUIPMENT)

LIVE LOADS:
ROOF (SNOW LOAD) — 25 PSF
ROOF [illegible] — [illegible]

[illegible]

[illegible] LOADS

[illegible]

SITE CLASS (ASSUMED)	D
SHORT PERIOD SPECTRAL RESPONSE ACCEL (S_s)	[illegible]
ONE SECOND SPECTRAL RESPONSE ACCEL (S_1)	[illegible]
SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCEL (S_{DS})	[illegible]
ONE SECOND DESIGN SPECTRAL RESPONSE ACCEL (S_{D1})	[illegible]
RISK CATEGORY	[illegible]
SEISMIC IMPORTANCE FACTOR (I_e)	[illegible]
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE RESISTING SYSTEM	ORDINARY REINFORCED CONC SHEAR WALLS
RESPONSE MODIFICATION FACTOR (R)	[illegible]
SEISMIC RESPONSE COEFFICIENT (C_s)	[illegible]

[illegible]

BASE SHEAR (V): $V = C_sW = $ [illegible] — [illegible]

WIND LOADS:

BASIC WIND SPEED (3 SECOND GUST)	115 MPH
EXPOSURE	B
K_{zt}	1.0

[illegible]

STATEMENT OF SPECIAL INSPECTIONS

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

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

[illegible]	CONT	PERIODIC	REMARKS
SOILS			
EXCAVATION & FILL		X	[illegible]
FOUNDATION BEARING CAPACITY VERIFICATION		X	
CONCRETE			
REINFORCING PLACEMENT		X	
ANCHOR BOLTS		X	
CONCRETE PLACEMENT	X		
EXPANSION ANCHORS		X	[illegible]

NOTE: [illegible]

FOUNDATIONS

SOILS REPORT: REPORT NO. 114-570974; PREPARED BY TERRATECH; DATED NOV 24, 2015

ALLOWABLE SOIL PRESSURE: 2000 PSF

LATERAL EARTH PRESSURE:
PASSIVE — 350 PCF
COEFFICIENT OF FRICTION — 0.45

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR 12" OF COMPACTED STRUCTURAL FILL AS REQUIRED AND AT LEAST 18" BELOW ADJACENT EXTERIOR 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 MATERIALS 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% FINES PASSING THE #200 SIEVE.

FILL AND BACKFILL MATERIAL SHOULD BE PLACED IN LEVEL LIFTS NOT EXCEEDING TWELVE (12) INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM TEST METHOD D1557-00.

BACKFILL BEHIND ALL RETAINING WALLS WITH WELL DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE. PROVIDE DAMPPROOFING AT EXTERIOR FACE OF ALL FOUNDATION WALLS [illegible].

EXCAVATIONS AND DRAINAGE INSTALLATION SHALL BE OBSERVED BY A SOILS ENGINEER RETAINED BY THE OWNER. IF EXCAVATION SHOWS SOIL CONDITIONS TO BE OTHER THAN THOSE ASSUMED ABOVE NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

CONCRETE

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

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

[illegible]

TYPE OF CONSTRUCTION	F'c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MAXIMUM SHRINKAGE STRAIN
SLAB ON GRADE	[illegible] PSI	[illegible]	[illegible] SACK	N/A
FOOTINGS	3000 PSI	[illegible]	[illegible] SACK	N/A
GRADE BEAMS	3000 PSI	[illegible]	[illegible] SACK	N/A
ALL OTHER CONC	[illegible] PSI	[illegible]	[illegible] SACK	N/A

[illegible]

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

REINFORCING STEEL

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

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. PROVIDE WELDED WIRE FABRIC IN SHEETS NOT ROLLS. LAP WELDED WIRE FABRIC 12" AT SIDES AND ENDS.

REINFORCING STEEL SHALL BE DETAILED INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH SP-66 AND ACI 318, LATEST EDITIONS, UNLESS OTHERWISE NOTED. REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE.

MECHANICAL SPLICING OF REINFORCING BARS, WHERE INDICATED ON THE DRAWINGS, SHALL BE BY AN ICBO APPROVED SYSTEM. SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

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

[illegible]

BAR SIZE	DEVELOPMENT LENGTH: TENSION TOP BARS	TENSION OTHER BARS	COMPRESSION ALL BARS	LAP SPLICE: TENSION TOP BARS	TENSION OTHER BARS	COMPRESSION ALL BARS
#3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

BAR SIZE	DEVELOPMENT LENGTH: TENSION TOP BARS	TENSION OTHER BARS	COMPRESSION ALL BARS	LAP SPLICE: TENSION TOP BARS	TENSION OTHER BARS	COMPRESSION ALL BARS
#3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
#8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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

VERTICAL BARS SHALL START FROM TOP OF FOOTING. HORIZONTAL BARS SHALL START A DISTANCE OF 1/2 THE NORMAL BAR SPACING FROM TOP OF FOOTING AND TOP OF FRAMED SLABS. IN ADDITION, THERE SHALL BE A HORIZONTAL BAR AT A MAXIMUM OF [illegible] TOP OF WALL AND BOTTOM OF FRAMED SLABS.

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

PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS ON GRADE TO BREAK UP SLAB INTO RECTANGULAR AREAS OF NOT MORE THAN 400 SQUARE FEET EACH. AREAS TO BE AS SQUARE AS PRACTICAL AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS TO BE APPROVED BY THE ARCHITECT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY PREPARED IMMEDIATELY PRIOR TO POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE AND SPACING AS MAIN REINFORCING DETAILED BEYOND JOINT.

SEE ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOF. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (1) #5 x 4'-0" DIAGONAL AT EACH CORNER. EXTEND BARS 2'-0" BEYOND 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.

[illegible]

[illegible]

[illegible]

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

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

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

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

WELDING

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

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

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

EXISTING BUILDING

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

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

GENERAL

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

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

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

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

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

FOUNDATION PLAN NOTES

1. REFERENCE TO SLAB ELEVATION SHOWN ON PLAN AND VERIFY W/ ARCH DRAWINGS. EXTERIOR FOOTINGS SHALL BEAR A MIN OF 1'-6" BELOW ADJACENT GRADE.
2. FOOTINGS AND SLAB ON GRADE SHALL BEAR ON FIRM NATIVE SOIL OR COMPACTED STRUCTURAL FILL AS SPECIFIED IN THE SOILS REPORT.
3. WHERE SLAB ON GRADE IS INDICATED, SLAB SHALL BE 4" THICK W/ 6x6-W1.4xW1.4 WELDED WIRE FABRIC REINF. SLAB SHALL BE POURED OVER A 2" SAND LAYER OVER A 10 MIL VAPOR BARRIER OVER 4" OF 5/8" CRUSHED ROCK.
4. REFER TO PLAN AND "CONCRETE GENERAL NOTES" ON SHEET S1.1 FOR CONTROL JOINT PLACEMENT AND DETAIL [illegible] FOR CONTROL JOINT CONSTRUCTION.
5. PLACE ALL REINFORCEMENT PER THE STRUCTURAL NOTES AND FOUNDATION DETAILS. REFER TO SHEET S1.1 FOR ADDITIONAL CONCRETE DETAILING REQUIREMENTS.
6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, WALL LOCATIONS, AND CONCRETE ROUGH OPENINGS WITH ARCHITECTURAL DRAWINGS AND NOTIFY ALL PARTIES OF ANY DISCREPANCIES.
7. CONTRACTOR SHALL PROVIDE FOOTING AND SLAB SUBGRADE PREPARATION, WATERPROOFING, AND BACKFILL & DRAINAGE BEHIND RETAINING WALLS PER GEOTECHNICAL REPORT. GEOTECHNICAL ENGINEER SHALL OBSERVE EXCAVATED SOIL CONDITIONS DURING CONSTRUCTION (AND GROUNDWATER CONDITIONS) AS REQUIRED, AND PROVIDE ADDITIONAL RECOMMENDATIONS IF NECESSARY BASED ON ACTUAL SITE CONDITIONS.

ABBREVIATIONS			
ABV	ABOVE	GLB	GLUE LAMINATED BEAM
AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ALT	ALTERNATE	KP	[illegible]
ARCH	ARCHITECT	KSI	KIPS PER SQUARE INCH
BL	[illegible]	L	ANGLE
BD	BAR DIAMETER	MECH	MECHANICAL
BLKG	BLOCKING	MF	MOMENT FRAME
BM	BEAM	MTL	METAL
BOT	BOTTOM	NS	[illegible]
BRNG	BEARING	OC	ON CENTER
BTWN	BETWEEN	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	PL	PLATE
CLR	CLEAR	PLCS	PLACES
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
COL	COLUMN	PSF	POUNDS PER SQUARE FOOT
CONC	CONCRETE	PT	POST TENSIONED
CONN	CONNECTION	PT	PRESSURE TREATED
CONT	CONTINUOUS	REINF	REINFORCING
CLG	[illegible]	REQD	REQUIRED
DBL	DOUBLE	SCHED	SCHEDULE
DET	DETAIL	SIM	SIMILAR
DIA	DIAMETER	SOG	SLAB ON GRADE
DIM	DIMENSION	STD	STANDARD
DIR	DIRECTION	STIFF	STIFFENER
EA	EACH	STL	STEEL
ELEV	ELEVATION	SYMM	SYMMETRICAL
EX	[illegible]	SW	SHEAR WALL
FF	[illegible]	TOC	TOP OF CONCRETE
FDN	FOUNDATION	TOS	TOP OF STEEL
FLR	FLOOR	TOW	TOP OF WALL
FTG	FOOTING	TYP	TYPICAL
FTG	FOOTING	UNO	UNLESS NOTED OTHERWISE
FT	[illegible]	VERT	VERTICAL
GC	GENERAL CONTRACTOR	WF	WIDE FLANGE

King County

BELLEVUE STATION 9

(NEW BUILD)

[illegible] NEWCASTLE WAY
BELLEVUE WA [illegible]

CG ENGINEERING
[illegible]

CG PROJECT# 16015.902

PROJECT MANAGER [illegible]

PREPARED BY [illegible]

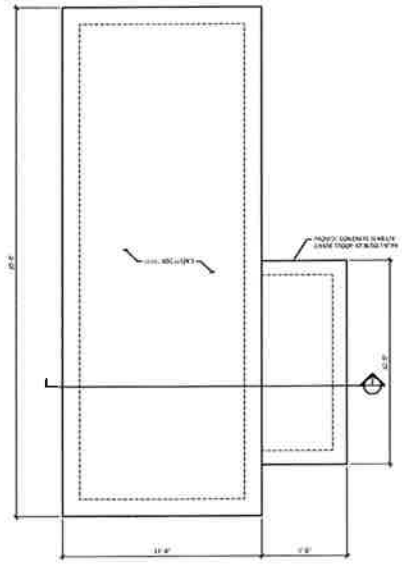
APPROVED BY [illegible]

REV	DATE	DESCRIPTION
[illegible]	[illegible]	[illegible]

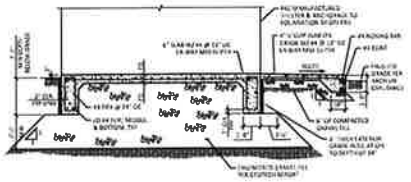
PLAN REVIEWERS SIGNATURE

SHEET NAME
STRUCTURAL NOTES

SHEET NUMBER
S1.1



1 SHELTER FOUNDATION PLAN



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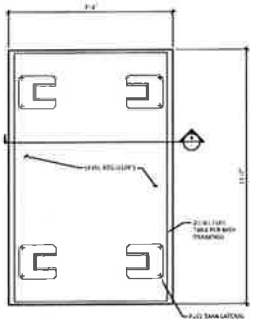
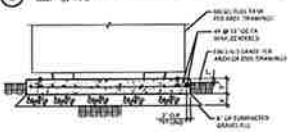


3 DIESEL TANK PLAN



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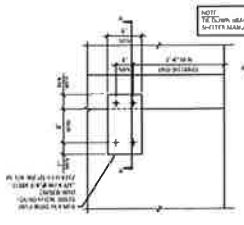

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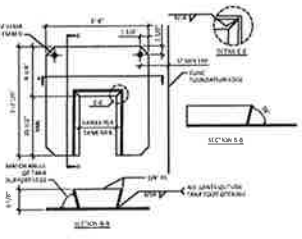
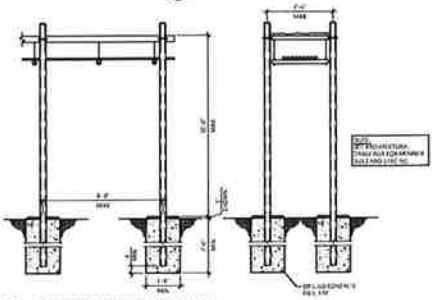


6 FUEL TANK LATERAL RESTRAINTS



7 ICE BRIDGE PIER FOUNDATIONS

King County

BELLEVUE STATION 9

(NEW BUILD)

12412 NEWCASTLE WAY
BELLEVUE WA 98006

CG ENGINEERING

CG PROJECT # 18015.902

PROJECT MANAGER

PREPARED BY

APPROVED BY

NO.	DATE	DESCRIPTION
1		

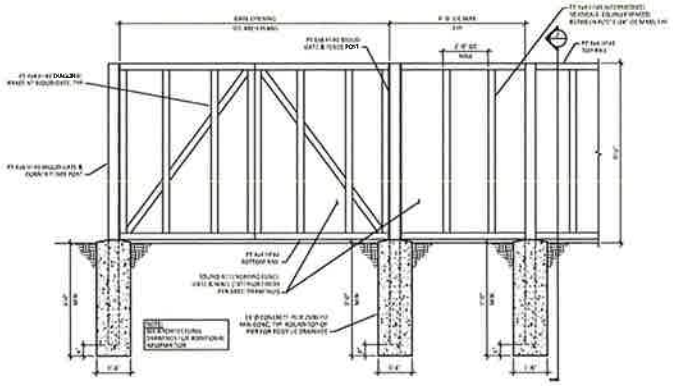
PLAN REVIEWER SIGNATURE

SHEET NAME

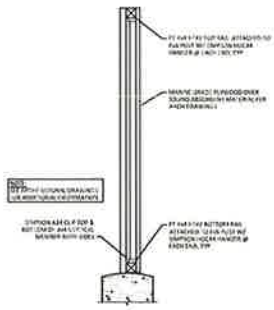
BUILDING AND TANK FOUNDATION PLANS AND DETAILS

SHEET NUMBER

S2.1



1 SOUND ATTENUATING FENCE FOUNDATION ELEVATION



2 SOUND ATTENUATING FENCE FOUNDATION SECTION

King County

BELLEVUE STATION 9

(NEW BUILD)

16418 NEWCASTLE WAY
BELLEVUE WA 98008

CG ENGINEERING
[redacted]
PHONE: (425) 770-0800
FAX: (425) 770-0830

CG PROJECT # 18015.902

PROJECT MANAGER MM

PREPARED BY RS

APPROVED BY MM

NO	DATE	DESCRIPTION
1	[redacted]	[redacted]

PLAN REVIEWER SIGNATURE

SHEET TITLE
SOUND ATTENUATING FENCE ELEVATION AND DETAIL

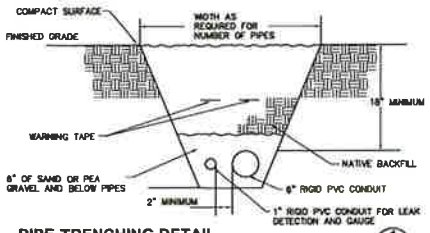
SHEET NUMBER
S2.2

MISCELLANEOUS EQUIPMENT SCHEDULE

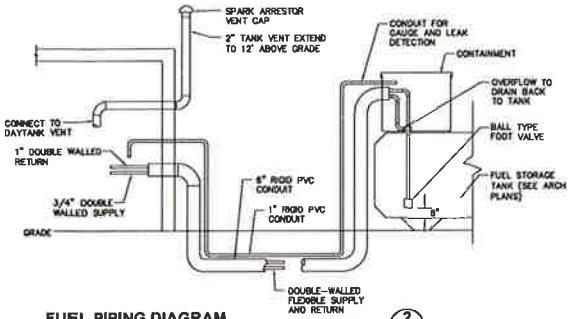
SYMBOL	ITEM DESCRIPTION	SPECIFIED MFR & MODEL NO.	AREA SERVED	EQUIPMENT CAPACITY	ELECTRICAL		REMARKS
					AMPS	VOLTS/PH	
LDP-1	TANK GAUGE AND LEAK DETECTION PANEL	FUEL SENTRY TG-EL-D4A	TANK, DAY TANK	6 INPUT	4.2	120/1	PROVIDE NEMA 3 ENCLOSURE

LEAK DETECTION

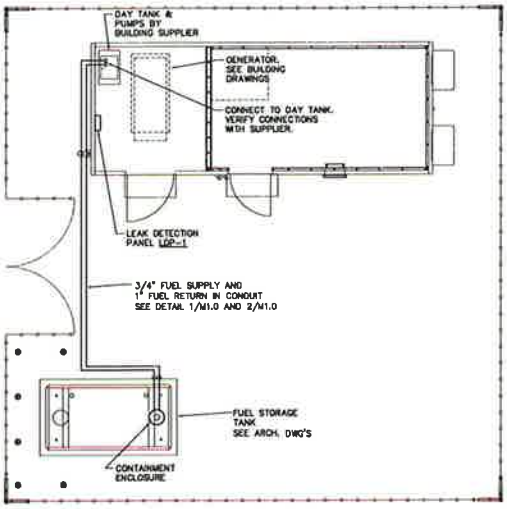
PROVIDE LEAK MONITORING OF THE DOUBLE-WALLED FUEL PIPING, AND THE DOUBLE-WALLED FUEL TANK.
PROVIDE LIQUID DETECTOR IN DOUBLE WALLED FUEL TANK.
PROVIDE DETECTOR FOR DOUBLE WALLED FLEXIBLE FUEL PIPING.
PROVIDE A LIQUID DETECTOR IN THE DOUBLE WALLED DAY TANK.
PROVIDE CONDUIT AND WIRE FROM PANEL TO EACH LEAK DETECTION DEVICE.



PIPE TRENCHING DETAIL 1/M1.0
NOT TO SCALE



FUEL PIPING DIAGRAM 2/M1.0
NOT TO SCALE



NORTH

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

VEACH

King County
PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
12412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ARCHITECTS

PROJECT MANAGER:
PREPARED BY: SJC
APPROVED BY: DW

07/31/16	PERMIT
05/31/16	PRELIMINARY

PLAN REVIEWERS SIGNATURE

SHEET NAME
FUEL SYSTEM PIPING PLAN

SHEET NUMBER
M1.0

PP1

225 A. BUS 200 A. MAIN CIRCUIT BREAKER

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL LOAD (VA)	BREAKER A	P	CCT	PH	CCT	BREAKER A	P	TOTAL LOAD (VA)	DESCRIPTION
HVAC #1	2800	50	2	1	A	2	50	2	1500	HVAC #2
------	2800		2	3	B	4		2	1500	REDUNDANT UNIT
PANEL APP2	(1450)	125	2	5	A	6	60	2	1500	SURGE ARRESTOR
------	(1450)			7	B	8			1500	------
LIGHTING LTG	150	20	1	9	A	10	20	1	180	EXT LTG RECEPT
EL BLDG LTG	1011	20	1	11	B	12	20	1	800	EQUIP RM RECEPTS
FIRE SUPPRESSION	196	20	1	13	A	14	20	1	360	FUEL PUMP
				15	B	16	20	1	300	LEAK CONTROL PANEL
				17	A	18				
				19	B	20				
				21	A	22				
				23	B	24				
				25	A	26				
				27	B	28				
				29	A	30				
				31	B	32				
				33	A	34				
				35	B	36				
				37	A	38				
				39	B	40				
				41	A	42				

PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.0	KW @	100% =	0.0 @ 100.0% =		0.0 KVA
FLUORESCENT	1.3	KW @	85% =	1.5 @ 100.0% =		1.7 KVA
RECEPTACLES						
FIRST 10 KW	1.1	KW @	100% =	1.1 @ 100.0% =		1.1 KVA
REMAINDER	0.0	KW @	100% =	0.0 @ 50% =		0.0 KVA
MOTORS						
LARGEST	25.3	KW @	82% =	29.2 @ 125.0% =		36.5 KVA
REMAINDER	5.1	KW @	82% =	6.2 @ 100.0% =		6.3 KVA
OTHER	0.5	KW @	100% =	0.5 @ 100.0% =		0.5 KVA
TOTAL	31.9	KW		38.4 KVA		68.0 KVA
			MINIMUM PANEL AMPACITY =			183 AMPERES
PHASE "A"	15.0	KW	PANEL POWER FACTOR	83%	A-B	92% PHASE BALANCE
PHASE "B"	16.3	KW				

PP2

225 A. BUS

240 / 120 VOLT, 1 PHASE, 3 WIRE

10000 AMPERE PANEL SHORT CIRCUIT RATING

PANEL TYPE: PROVIDED WITH EQUIPMENT SHELTER
PANEL MOUNTING: SURFACE

NOTE: PROVIDED WITH EQUIPMENT SHELTER

DESCRIPTION	TOTAL LOAD (VA)	BREAKER A	P	CCT	PH	CCT	BREAKER A	P	TOTAL LOAD (VA)	DESCRIPTION
RECEPTACLE #1	1500		1	1	A	2		1	1500	RECEPTACLE #2
------	1500		2	3	B	4		2	1500	------
RECEPTACLE #3	1500	25	2	5	A	6	25	2	1500	RECEPTACLE #4
------	1500		2	7	B	8		2	1500	------
RECEPTACLE #5	1500	25	2	9	A	10	25	2	1500	RECEPTACLE #6
------	1500		2	11	B	12		2	1500	------
RECEPTACLE #7	1500	25	2	13	A	14		2		RECEPTACLE #8
------	1500		2	15	B	16				------
RECEPTACLE #9	1500	25		17	A	18				
------	1500		2	19	B	20				
SPACE				21	A	22	20	1	180	ROW 2 TWIST LOCK 1
SPACE				23	B	24	20	1	180	ROW 2 TWIST LOCK 2
ROW 1 TWIST LOCK #1	180	20	1	25	A	26	20	1	180	ROW 2 TWIST LOCK 3
ROW 1 TWIST LOCK #2	180	20	1	27	B	28	20	1	180	ROW 2 TWIST LOCK 4
ROW 1 TWIST LOCK #3	180	20	1	29	A	30	20	1	180	ROW 2 TWIST LOCK 5
ROW 1 TWIST LOCK #4	180	20	1	31	B	32				
ROW 1 TWIST LOCK #5	180	20	1	33	A	34				
		0	0	35	B	36			0	0
TELCO RECEPT #1	180	20	1	37	A	38	20	1	180	TELCO RECEPT #2
TELCO RECEPT #3	180	20	1	39	B	40	20	1	180	TELCO RECEPT #4
				41	A	42				

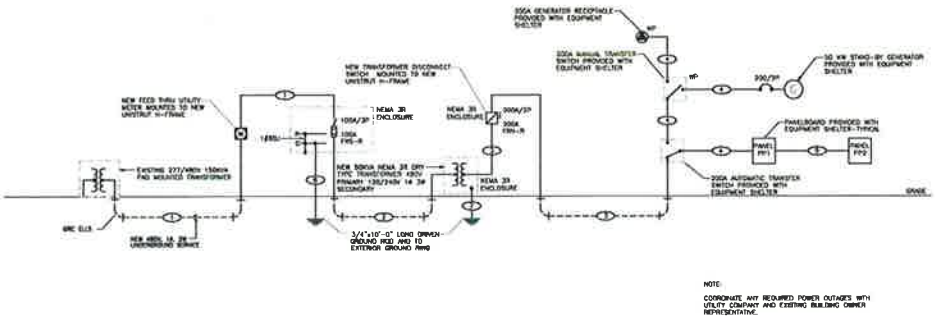
PANEL LOADING SUMMARY

LOAD TYPE	CONNECTED LOAD		POWER FACTOR	KVA	LOAD FACTOR	NEC CALCULATED LOAD
LIGHTING						
INCANDESCENT	0.0	KW @	100% =	0.0 @ 100.0% =		0.0 KVA
FLUORESCENT	0.0	KW @	85% =	0.0 @ 100.0% =		0.0 KVA
RECEPTACLES						
FIRST 10 KW	3.5	KW @	100% =	3.5 @ 100.0% =		3.5 KVA
REMAINDER	0.0	KW @	100% =	0.0 @ 50% =		0.0 KVA
MOTORS						
LARGEST	0.0	KW @	82% =	0.0 @ 125.0% =		0.0 KVA
REMAINDER	0.0	KW @	82% =	0.0 @ 100.0% =		0.0 KVA
OTHER	24.0	KW @	100% =	24.0 @ 100.0% =		24.0 KVA
TOTAL	56.5	KW		28.5 KVA		28.5 KVA
			MINIMUM PANEL AMPACITY =			119 AMPERES
PHASE "A"	13.4	KW	PANEL POWER FACTOR	100%	A-B	83% PHASE BALANCE
PHASE "B"	15.1	KW				

FEEDER SCHEDULE

- (2 #1) 1 1/4" C
- (2 #2 & 1#6G) 1" C
- (3 #3/0 & 1#6G) 2" C
- (3 #3/0 & 1#6G) 2" C PROVIDED WITH EQUIPMENT SHELTER
- (3 #1 & 1#6G) 1 1/2"C PROVIDED WITH EQUIPMENT SHELTER
- 1 #8CU
- 1 #4CU

ALL CONDUCTORS SHALL BE COPPER 600V RATED WITH THWN INSULATION



NOTE:
COORDINATE ANY REQUIRED POWER OUTAGES WITH UTILITY COMPANY AND EXISTING BUILDING OWNER REPRESENTATIVE.

1 ELECTRICAL ONE LINE DIAGRAM

1. INSTALLATION OF SECONDARY POWER AND CONNECTION TO METER SHALL BE COMPLETED IN COMPLIANCE WITH NATIONAL ELECTRIC CODE, NFPA 70, AND THE STATE OF WASHINGTON LAWS, RULES AND REGULATIONS FOR INSTALLING ELECTRIC WIRES & EQUIPMENT, ALL LATEST ISSUE, AND WITH SPECIFICATIONS PER A.S.T.M. B 231, B 400, I.C.E.A. S68-41-401, I.C.E.A. P81-570, & LOCAL PUD
2. PROVIDE A METER BASE PER LOCAL UTILITY STANDARDS. MOUNT ON SIDE OF OWNER FURNISHED BACK BOARD
3. UNDERGROUND CONDUIT SHALL BE RIGID POLYVINYL CHLORIDE CONDUIT; SCHEDULE 40, TYPE 1, CONFORMING TO UL ARTICLE 651; WESTERN PLASTICS OR CARLON MANUFACTURER CONFORMED SHALL BE SLIP-ON, SOLVENT SEALED 1 PIPE; SOLVENT WESTERN TYPE COMPATIBLE WITH PVC DUCT. ALL BENDS SHALL BE "HIDE SWEEP" TYPE WITH A 24" MINIMUM RADIUS. ALL CONDUIT UNDER ROADS SHALL BE RIES, (ON PVC ENCASED IN 6"x18" RED CONCRETE DUCTBANK).
4. CONDUIT USED INDOORS SHALL BE E.M.T., AND RIGID GALVANIZED STEEL FOR OUTDOORS. COUPLINGS SHALL BE RIGID STEEL AND COMPRESSION TYPE FOR E.M.T. SET SCREW FITTINGS ARE NOT PERMITTED. FOR ALL STUBS-UPS, USE RIGID GALVANIZED STEEL CONDUIT.
5. WIRE AND CABLE SHALL BE OF THE TYPE AND SIZE AS REQUIRED BY NEC. THERE WILL BE NO SPLICES ALLOWED. PROVIDE HOPE PULLING HAND HOLES AS NEEDED.
6. CONTRACTOR SHALL PROVIDE TEST OF THE GROUNDING SYSTEM BY CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. GROUNDING SYSTEM RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS. ALL ABOVE GRADE INTERIOR GROUNDING CONNECTORS SHALL BE DOUBLE-LUG COMPRESSION TYPE. ALL BELOW GRADE AND EXPOSED EXTERIOR GROUNDING CONNECTIONS TO PERMANENT EQUIPMENT AND (TWO) BUILDING ELEMENTS SHALL BE CADWELD TYPE. CARE SHALL BE TAKEN TO REVIEW CONNECTION LOCATIONS AND MATERIAL TYPES TO AVOID POSSIBLE GALVANIC CORROSION. ALL EXPOSED GROUNDING CONNECTIONS TO BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS "NO-OXY", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH PROJECT MANAGER. ALL BELTS, WASHERS AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
7. ALL EXTERIOR GROUND BARS SHALL BE COATED WITH ANTI-CORROSIVE AGENT SUCH AS LPS-3 OR AS PER NOTE 6 ABOVE.
8. ALL JUNCTION AND OUTLET BOXES TO BE LABELED WITH KROY TAPE, OR EQUAL, DESIGNATING ALL CIRCUIT NUMBERS CONTAINED IN EACH BOX.
9. CONTRACTOR TO ENSURE A/C PROVIDED WITH (2) INTERNAL TVSS.
10. CONTRACTOR SHALL COORDINATE WITH SITE SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. WHEREVER POTENTIAL CONFLICTS/INTERFERENCES EXIST, HAND EXCAVATE TO AVOID DAMAGE. CONTACT ALL UTILITIES TO LOCATE UNDERGROUND PIPING IN PUBLIC ROW.
11. VERIFY THAT A.I.C. OF THE UTILITY DOES NOT EXCEED THE A.I.C. RATING OF THE PROVIDED EQUIPMENT SHELTER PACKAGE. IF OVER 10KAIC, PROVIDE FUSIBLE SERVICE ENTRANCE SWITCH AND CONFIRM LOWERING OF A/C TO ACCEPTABLE LEVELS.
12. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
13. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

GENERAL NOTES

ABBREVIATIONS

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

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

LEGEND / ABBREVIATIONS

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

13418 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+

PROJECT MANAGER: EJC

PREPARED BY: LM/WO

APPROVED BY: PN

06/02/14	ISSUED FOR PERMIT
07/24/14	ISSUED FOR PRELIM. PERMIT
07/25/14	ISSUED FOR PRELIM. PERMIT
08/01/14	ISSUED FOR PRELIM. PERMIT
09/12/14	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

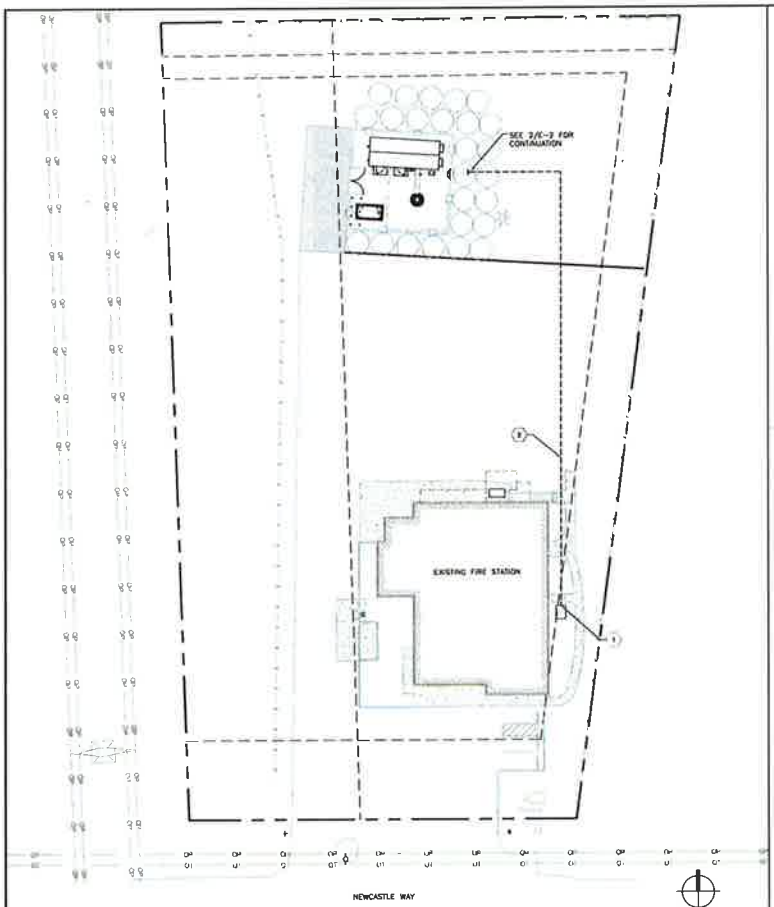
RECEIVED
NOV 07 2014
CITY OF BELLEVUE
STATE OF WASHINGTON

SHEET NAME

ONE-LINE DIAGRAM & PANEL SCHEDULE

SHEET NUMBER

E-1

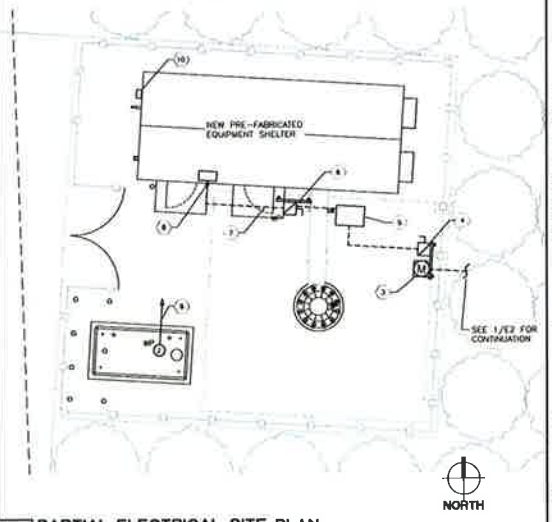


1 ELECTRICAL SITE PLAN

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

KEY NOTES:

1. CONTRACTOR SHALL TERMINATE NEW RACEWAY AT EXISTING 277/480V PAD MOUNTED UTILITY TRANSFORMER. COORDINATE INSTALLATION WITH PUGET SOUND ENERGY (PSE). CONTRACTOR SHALL REMOVE EXISTING LANDSCAPING LOCATED IN FRONT OF TRANSFORMER IN ACCORDANCE WITH PSE REQUIREMENTS.
2. NEW 480V 1ø 2W UNDERGROUND SERVICE MINIMUM 36" BELOW FINISH GRADE. RESTORE EXISTING LANDSCAPING TO EXISTING CONDITION.
3. NEW 480V UTILITY METER WITH MOUNTED TO NEW UNISTRUT FRAME. COORDINATE INSTALLATION WITH PSE.
4. NEW FUSED MAIN DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
5. NEW DRY TYPE TRANSFORMER MOUNTED TO CONCRETE PAD WITH VIBRATION ISOLATORS. SEE ONE LINE DIAGRAM 1/E-1.
6. NEW TRANSFORMER DISCONNECT MOUNTED TO NEW UNISTRUT FRAME. SEE ONE LINE DIAGRAM 1/E-1.
7. NEW 120/240V SERVICE TO NEW EQUIPMENT SHELTER LOCATED 36" BELOW FINISH GRADE.
8. CONTRACTOR SHALL TERMINATE AT AUTOMATIC TRANSFER SWITCH PROVIDED WITH NEW PRE-MANUFACTURED EQUIPMENT SHELTER.
9. CONTRACTOR SHALL PROVIDE ALARM CONNECTIONS TO FUEL TANK AND FUEL PIPING ALARM CONDUCTORS TO LEAK DETECTION CONTROL PANEL.
10. CONTRACTOR TO PROVIDE 120V CONNECTION TO LEAK DETECTION PANEL.



2 PARTIAL ELECTRICAL SITE PLAN

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

King County

PSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

10412 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES

PROJECT MANAGER: EJC

PREPARED BY: LM/MD

APPROVED BY: PM

06/02/16	ISSUED FOR PERMIT
07/29/16	ISSUED FOR PRELIM. PERMIT
07/29/16	ISSUED FOR PRELIM. PERMIT
08/02/16	ISSUED FOR PRELIM. PERMIT
08/11/16	ISSUED FOR PRELIM. PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME

ELECTRICAL SITE PLAN

SHEET NUMBER

E-2

GENERAL NOTES:

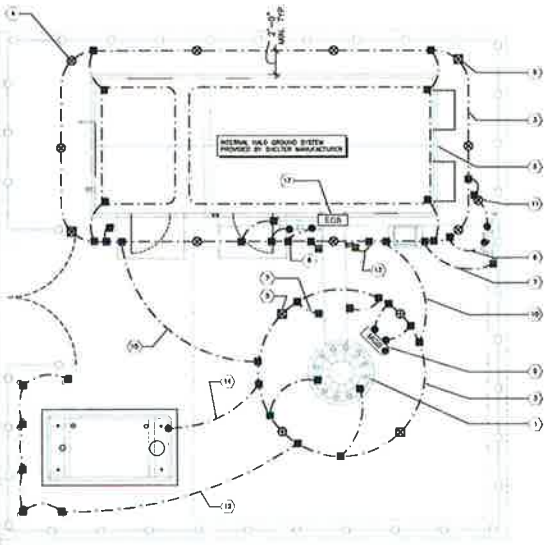
1. ALL CADWELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COATED WITH TWO (2) COATS OF SHERWIN WILLIAMS GALVANITE B30D65 OR EQUAL.
2. ALL ELECTRICAL, CADWELD AND MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDATION COMPOUND APPLIED TO CONNECTION.
3. ANY METAL OBJECTS WITHIN 6 FEET OF THE EXTERNAL GROUND RING SHALL BE GROUNDED.
4. ALL GROUNDING MATERIALS AND CADWELD MOLDS, SHOTS, ETC. SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS OTHERWISE NOTED.
5. THE ELECTRICAL CONTRACTOR SHALL FOLLOW GROUNDING SYSTEM INSTALLED AND TESTING PROCEDURES AS DESCRIBED IN THE GENERAL ELECTRICAL PROVISIONS.
6. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK. CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
7. USE OF BIF BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 15° BENDS CAN BE ADEQUATELY SUPPORTED.
8. OBSERVE REC AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
9. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
10. SIZE TO COMPLY WITH ANSI STANDARDS FOR GROUNDING.

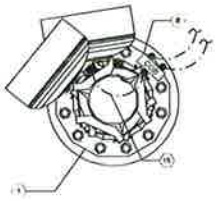
LEGEND

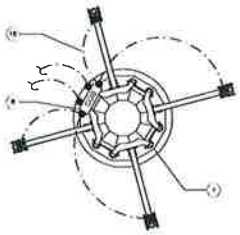
ITEM	DESCRIPTION
●	3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C. (UNLESS STATED)
■	CADWELD INSPECTION WELL (SEE DETAIL 3/E-4)
— —	#2 AWG TINNED SOLID BARE COPPER WIRE, MINIMUM 30" BELOW GRADE, OR 6" BELOW LOCAL FROST LINE, U.N.O.
— ■ —	CADWELD/EXOTHERMIC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

KEYED NOTES:

1. NEW 170' HIGH MONOPOLE TOWER. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO EXOTHERMIC WELD CONNECTION AT BASE OF TOWER.
2. NEW 13'-0" x 30'-0" EQUIPMENT SHELTER.
3. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR LOCATED 30" BELOW FINISH GRADE FOR EXTERIOR GROUND RING AT TOWER AND EQUIPMENT SHELTER.
4. (2/E-1) PROVIDE 3/4" DIAMETER x 10'-0" LONG COPPER CLAD GROUND ROD, MINIMUM 30" BELOW GRADE, AT MINIMUM 10'-0" O.C.
5. (3/E-1) GROUND INSPECTION AND TEST WELL. SEE DETAIL FOR CONSTRUCTION REQUIREMENTS. MIN (1) #4AWG PER GROUND ROD.
6. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT EXTERIOR GROUND RING TO MECHANICAL CONNECTION AT NEW ELECTRICAL ENCLOSURES.
7. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FOR GROUND CONNECTION TO MANLIFT BRIDGE / UTILITY FRAME PIPE SUPPORT. PROVIDE GROUND CONNECTION AT EACH PIPE SUPPORT.
8. (4/E-1) NEW COLLECTION GROUND BAR MOUNTED AT ANTENNA LEVEL OF TOWER. PROVIDE (2) #2 STRANDED (UNEN INSULATED) COPPER CONDUCTORS TO MECHANICAL CONNECTION AT MASTER GROUND BAR AT BASE OF TOWER.
9. (5/E-1) NEW MASTER GROUND BAR MOUNTED AT BASE OF TOWER. PROVIDE (2) #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT EXTERIOR NEW GROUND RING.
10. PROVIDE #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT TOWER GROUND RING TO EXOTHERMIC WELD CONNECTION AT COMPOUND SHELTER GROUND RING PHYSICALLY SEPARATE AS MUCH AS PRACTICAL.
11. NEW METER GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR CADWELDED TO NEW GROUND ROD AND PROVIDE EXOTHERMIC WELD CONNECTION TO EQUIPMENT SHELTER GROUND RING.
12. SAFETY BOLLARD GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO EXOTHERMIC CONNECTION AT BOLLARD, TYP.
13. GPS GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO EXOTHERMIC WELD CONNECTION AT GPS ANTENNAS, TYP.
14. FUEL TANK GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM EXOTHERMIC WELD CONNECTION AT GROUND RING TO MECHANICAL CONNECTION AT FUEL TANK GROUND LUG.
15. MICROWAVE ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO EXOTHERMIC WELD CONNECTION AT MICROWAVE ANTENNAS, TYP.
16. COMPOSITE COLLINEAR ANTENNA GROUNDING. #2 BARE SOLID TINNED COPPER CONDUCTOR FROM MECHANICAL CONNECTION AT COLLECTION GROUND BAR TO EXOTHERMIC WELD CONNECTION AT COMPOSITE COLLINEAR ANTENNAS, TYP.
17. (6/E-1) EXTERNAL GROUND BAR MOUNTED BELOW ENTRY PORT AT EQUIPMENT SHELTER. PROVIDE # #2 BARE SOLID TINNED COPPER CONDUCTORS TO EXOTHERMIC WELD CONNECTION AT NEW EXTERIOR GROUND RING.







1 **COMPOUND AND ANTENNA GROUNDING PLANS**

SCALE: 1/4" = 1'-0" (24x36), 1/8" = 1'-0" (11x17)

King County

KCPSERN

PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9

(NEW BUILD)

12413 NEWCASTLE WAY
BELLEVUE, WA 98005

[redacted]

CAMP+

PROJECT MANAGER: LJC

PREPARED BY: LM/MO

APPROVED BY: PN

09/03/14	ISSUED FOR PERMIT
07/28/14	ISSUED FOR PRELIM PERMIT
07/03/14	ISSUED FOR PRELIM PERMIT
06/03/14	ISSUED FOR PRELIM PERMIT
04/11/14	ISSUED FOR PRELIM PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECT'S STAMP

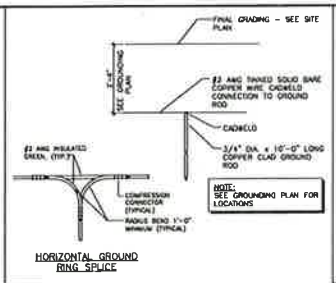
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME:
GROUNDING PLAN & NOTES

SHEET NUMBER:
E-3

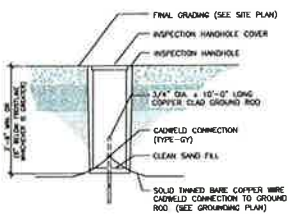
1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. ALL GROUNDING SHALL CONFORM TO R56 STANDARDS.
3. CONDUIT BENDINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY BEQUEATHING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY OF THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. PREFABRICATED SHELTER WILL BE PROVIDED WITH INTERNAL WIRING FOR COMPLETE INTERNAL WIRING REFER TO DRAWINGS PROVIDED BY SHELTER MANUFACTURER.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING TWO (2) HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & MAKE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL GROUNDING CONNECTORS TO BE CLEAN AND FREE OF PAINT AT THESE MATING SURFACES AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG TIN PLATED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE STAINLESS STEEL OR COPPER CLAD STEEL, 5/8"Ø 10'-0" LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 30" BELOW FINAL GRADE OR 6" BELOW FROST LINE FOR MAXIMUM DEPTH.
12. CONNECTIONS TO THE GROUND BUS BAR SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. GROUND RODS SHALL BE LOCATED A MINIMUM OF 30" BELOW GRADE OR 6" MINIMUM BELOW THE FROST LINE.
15. INSTALL GROUND CONDUCTORS AND GROUND ROD MINIMUM OF 1'-0" FROM EQUIPMENT CONCRETE PAD, SPREAD FOOTING OR FENCE.
16. OBSERVE N.E.C. AND LOCAL UTILITY REQUIREMENTS FOR ELECTRICAL SERVICE GROUNDING.
17. GROUNDING ATTACHMENT TO TOWER SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS OR AT GROUNDING POINTS PROVIDED (2 MINIMUM).
18. MINIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
19. MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS IS 8" WHEN BENDING IS NECESSARY. GROUND CONDUCTORS ARE TO BE AS STRAIGHT AS POSSIBLE.
20. NO SPLICES PERMITTED IN GROUND CONDUCTORS.
21. LUBRICATE ALL MECHANICAL CONNECTORS ARE TORQUED TO THE MANUFACTURER'S SPECIFIED VALUES.
22. GROUND BARS SHALL NOT BE FIELD MODIFIED.
23. USE PAIR SCHEME FOR LOADING ON MASTER GROUND BAR AS DISCUSSED IN NOTE 11B, 33 & 34.

1 GENERAL NOTES
NOT TO SCALE



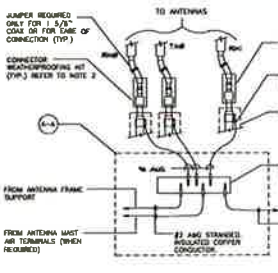
HORIZONTAL GROUND RING SPLICE

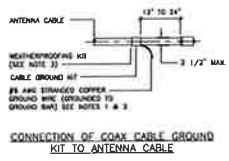
2 GROUND RING DETAIL
NOT TO SCALE



NOTE: SEE GROUNDING PLAN FOR LOCATIONS

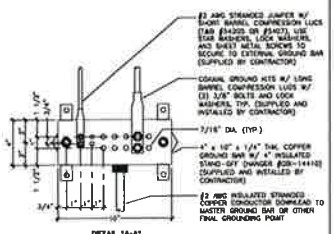
3 CADWELD INSPECTION WELL



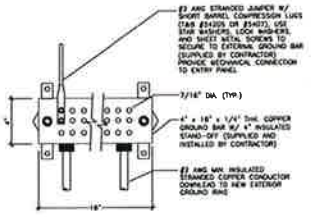


CONNECTION OF COAX CABLE GROUND KIT TO ANTENNA CABLE

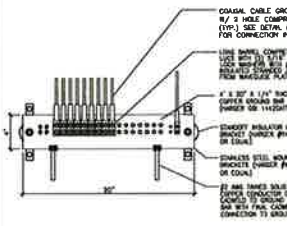
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG.
3. WEATHER PROOFING SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG.
4. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT (COLD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

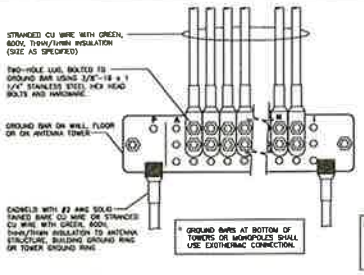


4 COAXIAL CABLE GROUND WIRE TO COLLECTION GROUND BAR CONNECTION
NOT TO SCALE



6 EXTERNAL GROUND BAR
NOT TO SCALE





PAIR SCHEME SPECIFICATIONS:

PRODUCER (P)
CONNECTS TO WIRELESS EQUIPMENT CABINETS, CABLE ENTRANCE GROUND BAR (CEGB), MAIN DISTRIBUTION FRAME GROUND BAR (MGFB), 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 RBN EQUIPMENT

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

7 NOT USED
-

King County

PSERN
PUGET SOUND EMERGENCY RADIO NETWORK

BELLEVUE STATION 9
(NEW BUILD)
1545 NEWCASTLE WAY
BELLEVUE, WA 98006

CAMP+ ASSOCIATES
1544 - 191st AVE. N. SUITE 204
WINNWOOD, WA 98036
PHONE: (425) 712-0282
FAX: (425) 712-7941

PROJECT MANAGER: LJC
PREPARED BY: LM/MD
APPROVED BY: RH

08/01/14 ISSUED FOR PERMIT
07/30/14 ISSUED FOR PERMIT
07/02/14 ISSUED FOR PERMIT
06/02/14 ISSUED FOR PERMIT
04/11/14 ISSUED FOR PERMIT

PLAN REVIEWERS SIGNATURE

ARCHITECTS STAMP
REGISTERED ARCHITECT
STATE OF WASHINGTON

SHEET NAME
GROUNDING DETAILS & NOTES

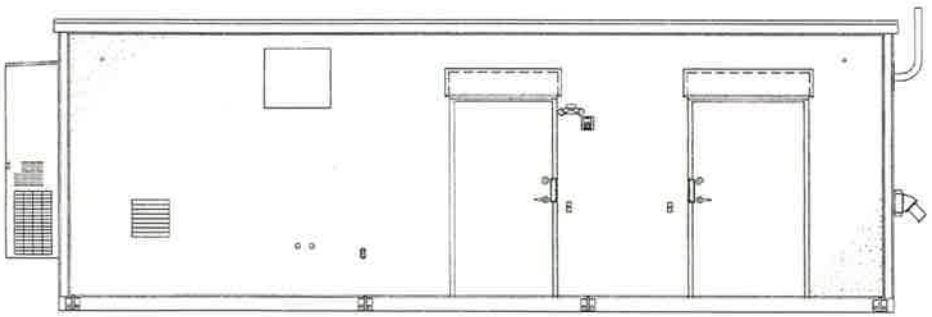
SHEET NUMBER
E-4

KING COUNTY, WA
11'-8" X 30'-0" SHELTER

(Shelter is not for human occupancy)

Structural Observation Required

Red line: STRUCTURAL OBSERVATION REQUIRED AT FACTORY DURING CONSTRUCTION AND IN FIELD AT FINAL PLACEMENT FOR 2015 IBC RISK CATAGORY IV STRUCTURE, Sections 1704.3, 1704.4 & 1704.6.2



TO BE BUILT AT THE: THERMOBOND
ELKHART PLANT
58120 COUNTY ROAD 3
ELKHART, IN 46517
PHONE: (574) 295-1214

DRAWING INDEX

SHEET	DESCRIPTION	REV 1	REV 2	REV 3	REV 4	REV 5	REV 6
C1	COVER SHEET						
C2	MATERIALS LIST						
A1	FLOOR PLAN						
A2	ELEVATIONS						
E1	ELECTRICAL SCHEMATIC						
E1.1	ALARM DIAGRAM						
E2	GROUNDING LAYOUT						
E2.1	GROUNDING DETAILS						
E4	ELECTRICAL DIMENSIONS						
S1	FLOOR CASTINGS						
S2	WALL CASTINGS						
S2.1	WALL CASTINGS DETAILS						
S3	ROOF CASTINGS						
S4	CROSS SECTION						
T1	TRANSPORT CONNECTIONS						
T2	INSTALL DETAILS						

RELEASE DATES

STATUS	RELEASED TO	BY	DATE

P=PROGRESS F=FINAL R=REVISED PR=PRODUCTION C=CUSTOMER S=STATE/THIRD PARTY

REVISIONS

REV	DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			
7			

WASHINGTON

OCCUPANT LOAD: 0
CONSTRUCTION TYPE: VB
USE GROUP: S-2 / F-1

CODES:

2015 INTERNATIONAL BUILDING CODE WITH STATE AMENDMENTS
2015 INTERNATIONAL MECHANICAL CODE WITH STATE AMENDMENTS
2014 NATIONAL ELECTRICAL CODE WITH STATE AMENDMENTS
2015 WASHINGTON STATE ENERGY CODE

MIRROR IMAGE OF SHELTER MAY BE BUILT

SPECIAL CONDITIONS / LIMITATIONS

1. THIS STRUCTURE IS NOT DESIGNED FOR INSTALLATION IN A FLOOD HAZARD AREA.
2. THIS STRUCTURE IS NOT DESIGNED FOR HUMAN OCCUPANCY AND IS EXEMPT FROM THE 2015 IMSC PER SECTION 202 (1 EXEMPTION #4 OR SECTION 202 1.2 EXEMPTION #1
3. THERMOBOND WILL NOT BE RESPONSIBLE FOR INSTALLATION OF ANY SPRINKLER SYSTEM, WHICH MAY BE REQUIRED BY LOCAL BUILDING OFFICIAL.
4. THERMOBOND WILL NOT BE RESPONSIBLE FOR ANY ANTENNA INSTALLATION ASSOCIATED WITH THIS BUILDING.
5. THIS BUILDING SHALL NOT BE LOCATED AT A SITE THAT EXCEEDS THE LISTED DESIGN LOADS.
7. IF BATTERIES W/ AN ELECTROLYTE CAPACITY OF MORE THAN 50 GAL. ARE TO BE INSTALLED IN THIS BUILDING, ONE OF THE FOLLOWING MUST BE INSTALLED BY OTHERS ON SITE:
   a. AN EXHAUST FAN W/ A HYDROGEN LIMIT SWITCH SO THAT TO LIMIT THE HYDROGEN TO 1% OF THE TOTAL VOLUME OF THE ROOM.
   b. CONTINUOUS VENTILATION SHALL BE PROVIDED AT A RATE NOT LESS THAN 1 CU FT PER MINUTE PER SQ FT OF FLOOR AREA OF THE ROOM.

DESIGN LOADS

OCCUPANCY TYPE (RISK CAT.): IV
FLOOR LIVE LOAD: 300 psf
CONCENTRATED BATTERY LOAD: 1000 psf
ROOF LIVE LOAD: 150 psf

$Pf = (0.7)^* (Ce) * (I) * (Cs) * (Pg)$

EXPOSURE FACTOR	Ce = 1.0
IMPORTANCE FACTOR	Is = 1.20
THERMAL FACTOR	Ct = 1.0
GROUND SNOW LOAD	Pg = 40

WIND DESIGN

WIND SPEED: 140 MPH 3 SECOND GUST
EXPOSURE: D
α = 9.5
GCpi = ± 0.18 (PER ASCE 7)

SHIPPING INFORMATION:

SHIPPING HEIGHT: 10'-6 1/8"
SHIPPING WIDTH: 8'-8"
SHIPPING LENGTH: 30'-0"
SHIPPING WEIGHT: 60,000 LBS

SEISMIC DESIGN:

BUILDING DEAD LOAD: 80,000 LBS
BUILDING FOOT PRINT: 350 SQ FT
SEISMIC DESIGN CATEGORY: D
BASIC SEISMIC-FORCE-RESISTING SYSTEM: INTERMEDIATE PRE-CAST WALL
ANALYSIS PROCEDURE: ELF
ASSUMED SITE CLASS: D
DESIGN SPECTRAL RESPONSE ACCELERATION: S_s = 1.50 S_1 = 0.50
SITE COEFFICIENTS: F_a = 1.00 F_v = 2.2
DESIGN BASE SHEAR: V = CSW = (0.375) (80,000) = 30000 LBS
H = ESTIMATED HEIGHT WITH EQUIPMENT
W = LS

STAMPS AND SEALS

Kevin M. Finn, P.E., Inc.
Kevin M. Finn, P.E.
1716 Elkhart Rd., Suite 1
Goshen, IN 46526
WA PE Lic. # 3300
WA Firm # 3222

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THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN. 46517
Phone: 800-793-2659, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER
COVER

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

DATE: 4/26/16
SALES MANAGER: R. Pfeifer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 2003 NONE
SHEET: C1

shelter 4/28/16 set

MATERIALS LIST

ITEM	QTY	UM	DESCRIPTION	MANUFACTURER	MFR PART NUMBER	TBB PART NUMBER	NOTE
	1	EA	DATA CENTER - W/ OUTSWING	EXCELDOOR	16L STEEL FRAME	SPEC-0040	4
	1	EA	AUTO DOOR - W/ OUTSWING - SPECIAL PREP	EXCELDOOR	3 3/4" ULTRADOOR		4
	5	EA	ELECTRIC HINGE		1 4/5"H-CH		4
	1	EA	MAGNETIC WEATHER STRIPPING (HEAD)	PEMKO	346	SPEC-0035	7
	1	EA	42" THRESHOLD	REESE	5076	SPEC-0032	7
	1	EA	42" THRESHOLD STOP	REESE	5076S	SPEC-0033	7
	1	EA	42" NEOPHONE STYLE DOOR SWEEP	REESE	5076C	SPEC-0030	7
	1	EA	42" DROP CAP	REESE	5076	SPEC-0035	7
	1	EA	42" DRIP CAP	REESE	5076	SPEC-0035	7
	1	EA	ANTI-PICK PLATE	LATCH GUARD	LG1050SP	SPEC-0060	7
	1	LA	PAINT 3/4 X 120 DOOR/FRAME TELECOM BROWN	COPPERCO		SPEC-0021	7
	1	EA	CONSTRUCTION CORE w/KEY PIT	CENTRAL 96 HARDWARE		SPEC-0012	7
	1	EA	ELECTRIC LOCKSET	SCHLAGE	ND96RDEU15-PASSAGE-626		6
	1	EA	DEADBOLT	BEST	FULL LA		7
	1	EA	HYDRAULIC DOOR CLOSER WITH HOLD OPEN	ADVANTAGE	1600	SPEC-0020	7
	1	EA	HEAD PROTECTOR	HIRSCH	CROSS-RAIL		6
2	2	EA	11 TON HVAC W/GAS HEAT & ECONOPOWER ECONOMIZERS CAPABLE OF MODULATING OUTDOOR/RETURN AIR UP TO 100% OUTDOOR AIR PER MODEL NO.S.B.S.)	FANNAIR	AHPMMGA036CA0A0A0E		8
3	2	EA	DUCTED RETURN	FANNAIR	RDA-36	SPEC-0004	8
4	2	EA	RETURN GRILL	FANNAIR	RDA-36	SPEC-0004	8
5	1	EA	THERMOSTAT / W/ TAMPER PROTECT	FANNAIR	ECONOTAT-2	SPEC-0030	8,12
6							
7	1	EA	20 KW GENERATOR, DIESEL, INTERIOR	CUMMINS	20G1 GA		5
8	1	EA	200A MTS	SQUARE D	HCT361	SPEC-0066	8,12
9	1	EA	200A GENERATOR RECEPTACLE	APPLETON	A460RCW-7601-BO	SPEC-0055	8
10							
11	1	EA	200A INTEGRATED LOAD CENTER, 120/24	HOGG		SPEC-0100	8,12
12	2	EA	DIMERED BAR	SQUARE D	PKRP2L4	SPEC-0072	8
13	2	EA	FLAT BARE, 250A	SQUARE D	6C250		8
14	1	EA	EXIT BARE, 250A	SQUARE D	6C250	SPEC-0078	8
15	1	EA	EXIT BOX, 250A	SQUARE D	6C250	SPEC-0266	8
16	1	EA	EXIT BARE, 250A	SQUARE D	6C250T	SPEC-0264	8
17	22	EA	LUG BARE, 250A	SQUARE D	6C250	SPEC-0262	8
18	1	EA	EXIT BAR, 250A	SQUARE D	6C250	SPEC-0264	8
19	1	EA	250A NEMA 3R/4X, 14GA	SQUARE D	6C250-3R	SPEC-0262	8
20	1	EA	PANEL COVER	SQUARE D	6C250-3R	SPEC-0264	8
21	3	EA	GROUND BAR	SQUARE D	PKRP2L4	SPEC-0072	8
22	1	EA	6' BASEBOARD HEATER, 240V	DIMPLEX	DPW2406W		9
23	1	EA	BASEBOARD HEATER UNIT FLOAT THERMOSTAT	DIMPLEX	TF240W	SPEC-0224	9
24	10	EA	DUPLEX RECEPTACLE	LEVITON	CR20-I	SPEC-0201	8,12
25	2	EA	WEATHERPROOF GFCI RECEPTACLE	PASS & SEYMOUR	2084-TRWR	SPEC-0054	8
26	4	EA	TAMP LOCK RECEPTACLE, 20A/120V, LS-20R	MORRIS	1151-3610	SPEC-0048	9
27	1	EA	SINGLE POLE SWITCH	LEVITON	CSB20-1D	SPEC-0056	9
28	10	EA	26" 32W - DUAL FLUORESCENT	LITHONIA	26 2 32 GEB RS ESP	SPEC-0192	9
29	3	EA	EMERGENCY/EXIT LIGHT WITH BATTERY BACK-UP	LITHONIA	ELM LED	SPEC-0177	9
30	1	EA	150W EXTERIOR LIGHT WITH PHOTON SENSOR	HUBBELL/LITHONIA	OAWH2TRT 120/277 4 WHP		9
31	1	EA	ENTRY MAT - 4' X 8'	ANDERSON	3478A	SPEC-0080	9
32	1	EA	GROUND BAR KIT	HARGER	GPKG4107	SPEC-0015	8
33	1	LA	20' 2 #4/0 w/ GROUND BAR	HARGER	20 4/0G-1	SPEC-0014	8
34	1	EA	8W ALARM BLOCK	ELPASO	SMATH-25	SPEC-0200	7,12
35	2	EA	DOOR ALARM	LEVITON	5207	SPEC-0036	7,12
36	1	EA	METAL WALL POCKET	PEMKO	303WB	SPEC-0048	7
37	1	EA	STEP HEATER	HONEYWELL	GRAINGER 5A826	SPEC-0251	7
38	1	EA	FIRST AID KIT	NORTH	GRAINGER 4EP82	SPEC-0254	7
39	1	EA	TELCO BOARD 8' X 4' X 3/4"	TIMBERBOARD			8
40	76	FT	3/4" CABLE LADDER HARDWARE	CENTRAL STEEL FABRICATORS	MISC	SPEC-0231	7,10
41	1	EA	4" MANDREL PIT	TB-LINE	442 S 18L	SPEC-0036	7
42	3	EA	4" MANDREL END CAP	TB-LINE	44 E 18L	SPEC-0032	7
43	20	LA	SOFT MANIFOLD	MANIFOLD	ALARM08-10	SPEC-0197	8
44	2	EA	MANIFOLD END CAP	MANIFOLD	ALARM08	SPEC-0240	8
45	1	EA	MANIFOLD FLANK COVER	MANIFOLD	ALA-16	SPEC-0234	8
46	1	EA	MANIFOLD RECEPTACLE	PASS & SEYMOUR	5351	SPEC-0078	7,12
47	1	EA	14" EXHAUST FAN	DAYTON	3EA42	SPEC-0094	8
48	1	EA	14" SPOKE DAMPER	LEADER INDUSTRIES, INC	SPD14-S 22GA	SPEC-0170	8
49	1	EA	3/4" FIXTURE THERMOSTAT	DAYTON	3A91C	SPEC-0046	8,12
50	3	EA	14" FIXED LOUVER	LEADER INDUSTRIES, INC	FXD-14 22GA	SPEC-0160	8
51	1	EA	14" SPOKE DAMPER	LEADER INDUSTRIES, INC	SPD14-S 26GA	SPEC-0166	8
52	1	EA	18" SPOKE DAMPER	LEADER INDUSTRIES, INC	SPD18-S 16GA	SPEC-0180	8
53	1	EA	24" FIXED LOUVER	LEADER INDUSTRIES, INC	FXD-24 26GA	SPEC-0246	8
54	1	EA	12" FIXED LOUVER	LEADER INDUSTRIES, INC	FXD-12 22GA	SPEC-0242	8
55	3	EA	4" MANDREL PIT	TB-LINE	442 S 18L	SPEC-0036	7
56	6	EA	4" MANDREL END CAP	TB-LINE	44 E 18L	SPEC-0032	7
57							
58	1	EA	AUTO FRAME - LH OUTSWING	EXCELDOOR	16L STEEL FRAME	SPEC-0058	4
	1	EA	AUTO DOOR - LH OUTSWING - SPECIAL PREP	EXCELDOOR	3 3/4" ULTRADOOR		4
	5	EA	ELECTRIC HINGE		1 4/5"H-CH		4
	1	EA	MAGNETIC WEATHER STRIPPING (HEAD)	PEMKO	346	SPEC-0263	7
	1	EA	42" THRESHOLD	REESE	5076	SPEC-0100	7
	1	EA	42" THRESHOLD STOP	REESE		SPEC-0035	7
	1	EA	42" NEOPHONE STYLE DOOR SWEEP	REESE	5076C	SPEC-0030	7
	1	EA	42" DROP CAP	REESE	44	SPEC-0032	7
	1	EA	ANTI-PICK PLATE	LATCH GUARD	LG1050SP	SPEC-0060	7
	1	EA	PAINT 3/4 X 120 DOOR/FRAME TELECOM BROWN	COPPERCO		SPEC-0021	7
	1	EA	CONSTRUCTION CORE w/KEY PIT	CENTRAL 96 HARDWARE		SPEC-012	7
	1	EA	ELECTRIC LOCKSET	SCHLAGE	ND96RDEU15-PASSAGE-626		6
	1	EA	DEADBOLT	BEST	FULL LA		7
	1	EA	HYDRAULIC DOOR CLOSER WITH HOLD OPEN	ADVANTAGE	1600	SPEC-0020	7
	1	EA	CHIEF PUSHER	HIRSCH	CROSS-RAIL		6
59	1	EA	GAS DETECTOR	SPEC	CO-SENSOR 4 RPM		
60	1	EA	GENERATOR 24+ TANK ; 50 GAL	TRAYDART	UTRD-50		8

MATERIALS LIST

ITEM	QTY	UM	DESCRIPTION	MANUFACTURER	MFR PART NUMBER	TBB PART NUMBER	NOTE
61							
62	1	EA	DAYDC 2 POLE RELAY	DAYTON	GRAINGER 1EA65		
63	1	EA	DAYDC 2 POLE RELAY BASE	DAYTON	GRAINGER 1EA67		
64	2	EA	ALUMINUM COVER PLATE	BAT			
65	1	EA	ELIS 2.5G FIRE EXTINGUISHER	KIDDE	PRO5XTDP	344-001	2,9
66	1	EA	200A FUSIBLE DISCONNECT, NEMA 3R	SQUARE D	H324NRB		8,12
67	2	EA	200A FUSE	BUSS	FRN-R-200		8
68							
69							
70							
71							
72							
73							
74							
75							
76							
77	1	EA	GROUND STRAP (BAR)				
78	1	EA	GROUND STRAP COVERS			SPEC-0040	
79	20	EA	RIVETS				
80	6	EA	LIFTING LUGS				
81	4	EA	TIE DOWN PLATES				
82	16	EA	TIE DOWN BOLTS				
83	8	EA	BLOCK PLASTIC BASE PLUGS				
84	10	EA	FLOOR TILES				
85	1	EA	TUBE OF BRILLIANT WHITE CAULK				
86	4	EA	TUBES OF EDGE DRIPPING CAULK				
87	1	EA	PINT CAN OF TELECOM BROWN PAINT				
88	1	EA	PINT CAN OF ILLASTOTHERIC COMPOSE PAINT				
89	28	EA	3/8" BARTS FOR RAIL TOP TILT				
90	76	EA	3/4" BARTS FOR SHELTER SET				

FIRE SUPPRESSION SYSTEM

ITEM	QTY	UM	DESCRIPTION	MANUFACTURER	MFR PART NUMBER	TBB PART NUMBER	NOTE
91	1	EA	SHP FIRE CONTROL PANEL	FIKE	10-269-1-R-1		9,12
92	2	EA	BATTERIES, 7AH 12VDC	FIKE	02-1016		9
93	1	EA	BELL, 24VDC	FIKE	20-23-16		9
94	1	EA	HORN/STROBE, 24VDC	FIKE	20-23-40		9
95	1	EA	EXTERIOR STROBE, 24VDC	FIKE	20-23-01		9
96	4	EA	DETECTOR BASE PLATE	FIKE	60-054		9
97	4	EA	PHOTOELECTRIC DETECTOR	FIKE	60-052		9
98	1	EA	MANUAL RELEASE	FIKE	10 638		9
99	1	EA	ABORT STATION	FIKE	10 634		9
100	1	EA	CYLINDER HOLDER, PULLEY, ETC.	FIKE	76-207		9
101	2	EA	NOZZLE WITH DEFLECTOR PLATE	FIKE			9
102	2	EA	1/2 NPT	FIKE	70-279		9
103	1	EA	INTERIOR AGENT WARNING SIGN	FIKE	90-0139		9
104	1	EA	EXTERIOR AGENT RELEASE SIGN	FIKE	90-0091		9
105	1	EA	MANUAL RELEASE SIGN	FIKE	90-0096		9
106	1	EA	SYSTEM ABORT SIGN	FIKE			
107							
108							
109							
110							
111							
112							
113							
114							
115							
116							
117							
118							
119							
120							

WSEC 1142:

ALL EQUIPMENT SHALL HAVE I.D. AND PREVENTATIVE MAINTENANCE INSTRUCTIONS FURNISHED TO OWNER. REQUIRED ACTION SHALL BE STATED ON READILY ACCESSIBLE LABELS.

MATERIAL LIST NOTES:

1. SHIP LOOSE
2. PRE-INSTALL REMOVE FOR SHIPMENT
3. FABRICATED ITEM
4. PAINT - TELECOM BROWN
5. PAINT - TELECOM GRAY
6. PAINT - COLOR DESIGNATED
7. OR EQUIVALENT
8. NO SUBSTITUTIONS ALLOWED
9. NO PART NUMBER SPECIFIED
10. NOT BE DELIVERED AT SHOP
11. PROVIDED BY OTHERS
12. LABEL
13. QUANTITY ESTIMATED

STAMPS AND SEALS

KEVIN M. FLYNN — STATE OF WASHINGTON — 20150 — REGISTERED PROFESSIONAL ENGINEER

AS 14 2016

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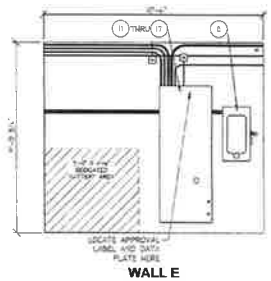
THERMOBOND BUILDINGS
68120 County Road 9, Elkhart, IN 46517
Phone: 800-423-2656, www.thermobond.com

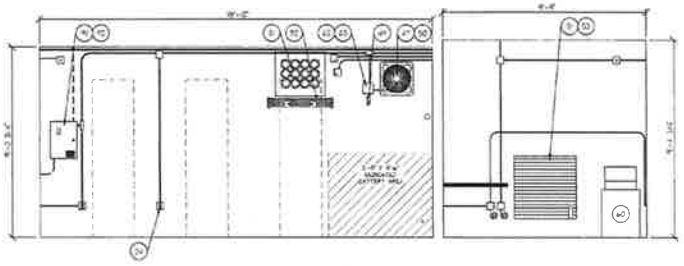
KING COUNTY, WA
11'-8" X 30'-0" SHELTER
MATERIALS LIST

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

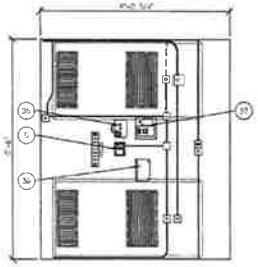
DATE: 4/28/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER:
SCALE: NONE
SHEET: C2



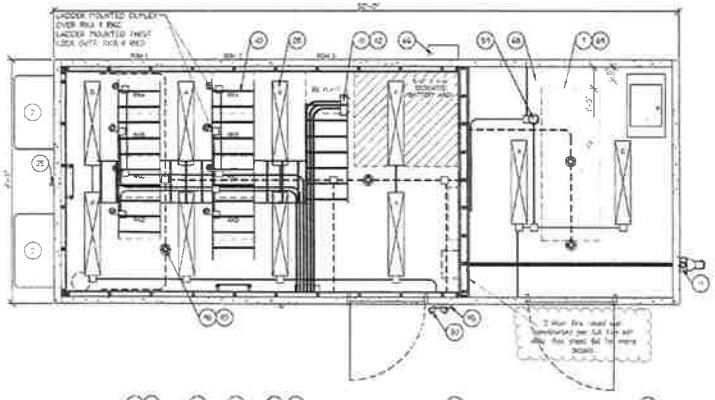
WALL E

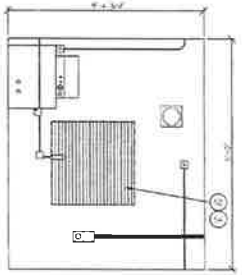


WALL C

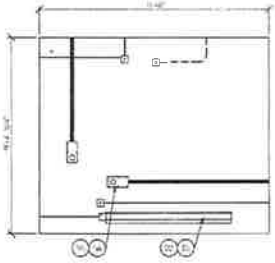


WALL D

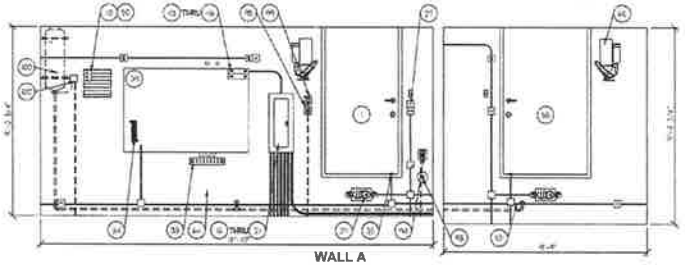




WALL B



WALL F



WALL A

FLOOR PLAN

SCALE 3/8"=1'-0"

COMMERCIAL POWER:

120/240VAC 200AMP SINGLE PHASE SERVICE

CONDUIT RUNS:

1. ALL CONDUIT RUNS TO BE EMT UNLESS STATED OTHERWISE
2. ALL CONDUIT RUNS TERMINATING AT SERVICE ENTRANCE EQUIPMENT SHALL CONTAIN BONDED BUSHINGS
3. WIREWAYS CARRYING 3 OR MORE CURRENT CARRYING CONDUCTORS SHALL BE DERATED PER TABLE 310-15(B)(3)(a) OF APPLICABLE EDITION OF THE NEC
4. CONDUIT FILL IS BASED ON CHAPTER 9, APPENDIX C OF THE NEC

CABLE LADDER:

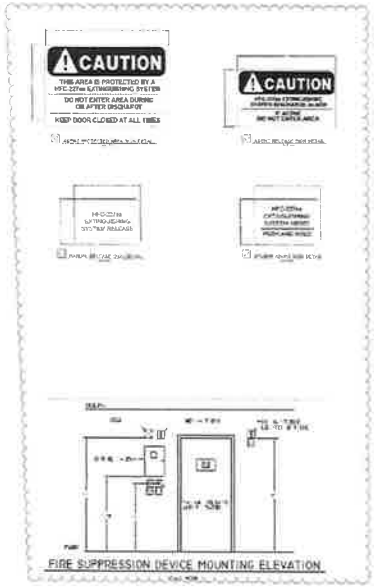
1. CABLE LADDER IS TO BE 6"x2" 6 FT. AND INSTALLED IN ACCORDANCE WITH ARTICLE 392 OF THE NEC. FINAL TO MATCH UPS IN KING COUNTY

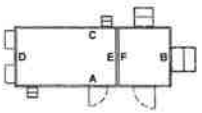
GROUNDING:

1. ALL GROUNDING EXCEPT FOR CABLE LADDER TO CONFORM TO ARTICLE 250 OF THE NEC
2. CABLE LADDER GROUNDING TO CONFORM TO ARTICLE 392.60 OF THE NEC

GENERAL NOTES:

1. LABEL FACE OF ALL ELECTRICAL EQUIPMENT WITH PHENOLIC LABELS BLACK WITH WHITE LETTERS EXTERNAL BYPASS TO END 1 LAM EXCEPT ON SMALL BE ALL UPS EQUIPMENT SHALL HAVE PHENOLIC LABELS RED WITH WHITE LETTERS BY UPSITE, UPSI, WIREHOLD RECEPTACLES





STAMPS AND SEALS

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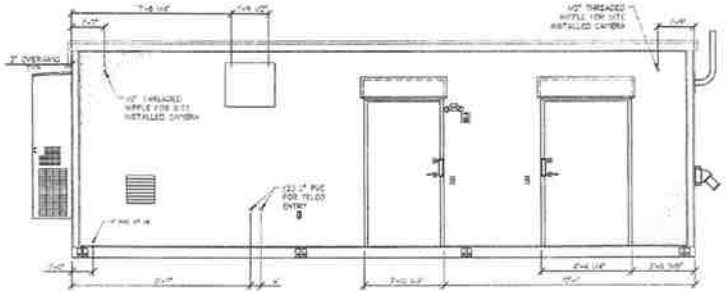
THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN 46517
Phone: 800-423-2559, www.thermobond.com

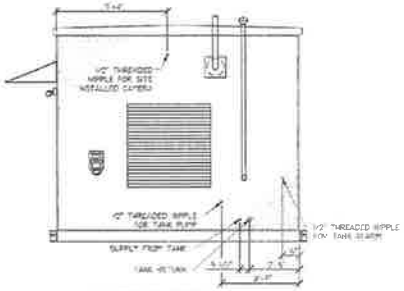
KING COUNTY, WA
11'-8" X 30'-0" SHELTER
FLOOR PLAN

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

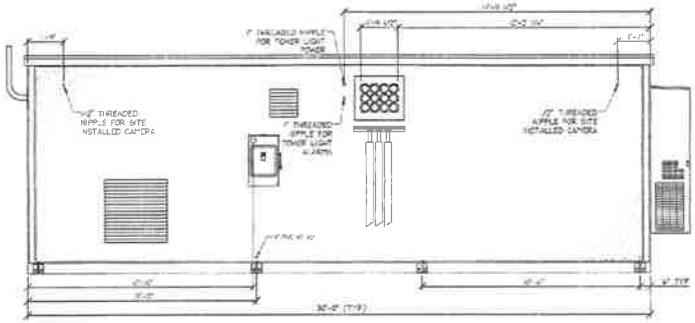
DATE: 4/26/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 24X36 NONE
SHEET: A1



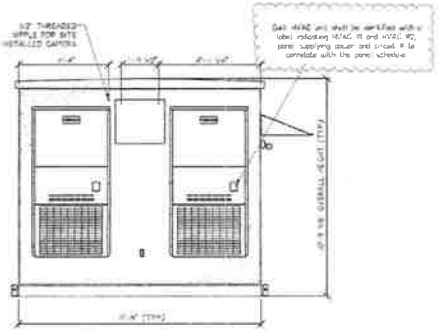
FRONT ELEVATION (WALL A)
SCALE: NONE



RIGHT ELEVATION (WALL B)
SCALE: NONE



REAR ELEVATION (WALL C)
SCALE: NONE



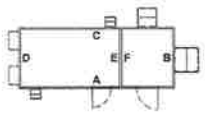
LEFT ELEVATION (WALL D)
SCALE: NONE

EXTERIOR FINISH SCHEDULE

ITEM	SURFACE	FINISH	PAINT COLOR
ROOF	PAINTED SHEET METAL	SEALED, ELASTOMERIC COURSE PAINT	TELECOM BROWN
WALLS	EXPOSED WASHED AGGREGATE	OKITE STAIN (2 COATS)	-
DOORS	STEEL, RATED	PAINT	TELECOM BROWN
CNTS	AS FINISHED	SEALED PER DETAILS SHEET	TELECOM BROWN

ELEVATION NOTES:

1. SEE MATERIALS LIST FOR SHIPPED LOOSE ITEMS
2. SEE MATERIALS LIST FOR DOOR HARDWARE



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THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN 46517
Phone: 800-423-4668, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER

ELEVATIONS

PROJECT TYPE: Shelter Type A
DRAWING NUMBER: AGB9556

DATE: 4/28/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER:
SCALE: 24X36 NONE
SHEET: A2

PP1 200A, 120/240VAC, 1ϕ/3W, 60Hz, M.BKR

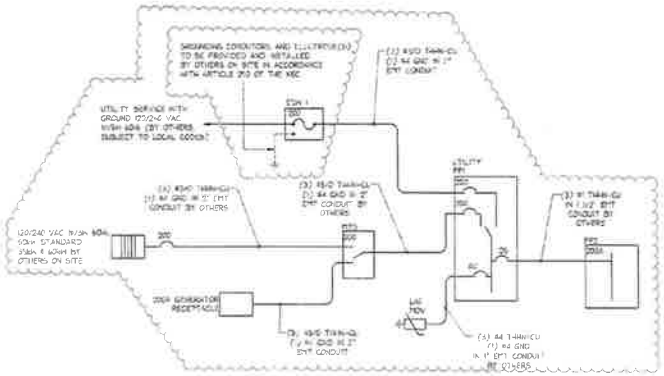
LOAD	VOLT AMPS A	VOLT AMPS B	WIRE	BREAKER TRIP	BREAKER P	BREAKER TRIP			WIRE	BREAKER TRIP	BREAKER P	VOLT AMPS A	VOLT AMPS B	LOAD
HVAC #1	2500		8	2	50	1	2	50	2	6		2500		
		2500				3	4						2500	HVAC #2
PP2 FEED	14580		1	2	125	5	6	90	2	4		90		
		14580				7	8						0	SURGE ARRESTOR
EXTERIOR LIGHT *	108		12	1	20	9	10	20	1	12		540		EXTERIOR CKT
EQ RM LIGHTS *		540	12		20	11	12	20		12			900	EQ ROOM RECEPTS
FIRE SUPPRESSION	120		12		20	13	14	20		12		1000		HEATER/CHARGER **
TOWER LIGHT		250	10		20	15	16	20		12			135	GEN RM LIGHTS *
TOWER LIGHT	250		10	1	30	17	18	20	1	10		360		GEN ROOF RECEPTS
FAN/LOUVER		48	12	1	20	19	20	20	2	12		750	750	GEN RM HEATER
CO DETECTOR	108		12	1	20	21	22	20				750		
						23	24	20	1	10		250		DAY TANK
						25	26	20		12		250		EFT TANK PUMP
						27	28							
						29	30							
						31	32							
						33	34							
						35	36							
						37	38							
						39	40							
VA PER PHASE	16048	15478										5530	4878	VA PER PHASE
												21526	19356	TOTAL VA PER PHASE
												196	196	AMPS PER PHASE
													43.7	TOTAL KVA
													196	MAX AMPS PER PHASE

* CALCULATED AT 125% FOR CONTINUOUS LOAD
** CONNECTION BY OTHERS

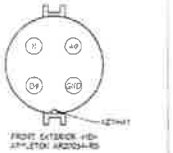
PP2 200A, 120/240VAC, 1ϕ/3W, 60Hz, M.BKR

LOAD	VOLT AMPS A	VOLT AMPS B	WIRE	BREAKER TRIP	BREAKER P	BREAKER TRIP			WIRE	BREAKER TRIP	BREAKER P	VOLT AMPS A	VOLT AMPS B	LOAD
RECTIFIER #1	1500		8	2	25	1	2	75	2	6		1500		
		1500				3	4						1500	RECTIFIER #2
RECTIFIER #3	1500		8	2	25	5	6	25	2	8		1500		
		1500				7	8						1500	RECTIFIER #4
RECTIFIER #5	1500		8	2	25	9	10	25	2	8		1500		
		1500				11	12						1500	RECTIFIER #6
RECTIFIER #7	1500		8	2	25	13	14	25	2	8		1500		
		1500				15	16						1500	RECTIFIER #8
RECTIFIER #9	1500		8	2	25	17	18							
		1500				19	20							
RDH 1 RKA DUPLEX	180		12	1	20	21	22	30	1	10		180		RDH 1 RKA THSTLOCK
RDH 1 RKC DUPLEX		180	12	1	20	23	24	30	1	10			180	RDH 1 RKC THSTLOCK
RDH 2 RKA DUPLEX	180		12	1	20	25	26	30	1	10		180		RDH 2 RKA THSTLOCK
RDH 2 RKC DUPLEX		180	12	1	20	27	28	30	1	10			180	RDH 2 RKC THSTLOCK
						29	30							
						31	32							
						33	34							
						35	36							
TELCO RECEPT #1	180		12	1	20	37	38	20	1	12		360		TELCO RECEPT #2
TELCO RECEPT #3		180	12	1	20	39	40	20	1	12			180	TELCO RECEPT #4
VA PER PHASE	5040	5040										4680	4680	VA PER PHASE
												14580	14580	TOTAL VA PER PHASE
												122	122	AMPS PER PHASE
													29.2	TOTAL KVA
													122	MAX AMPS PER PHASE

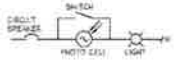
* CALCULATED AT 125% FOR CONTINUOUS LOAD
** CONNECTION BY OTHERS



ONE-LINE WIRING DIAGRAM
SCALE NONE



GENERATOR RECEPT WIRING
SCALE NONE



EXTERIOR LIGHT CIRCUIT
SCALE NONE

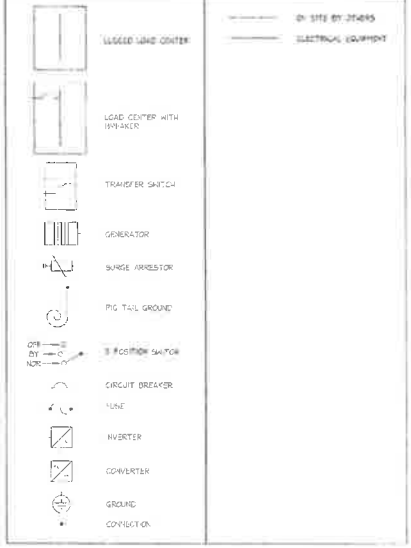
ONE-LINE DIAGRAM NOTES:

1. ALL GROUNDING TO CONFORM TO ARTICLE 250 OF THE NEC
2. WIRE/WAYS CARRYING 3 OR MORE CURRENT CARRYING CONDUCTORS SHALL BE DERATED PER TABLE 310-15(B)(2)(a) OF THE APPLICABLE EDITION OF THE NEC
3. CIRCUIT FILL IS BASED ON CHAPTER 9, APPENDIX C OF THE NEC

GENERAL NOTES:

NEC 396.4(B) 10.(2)(7) identification of disconnecting means
(1) In the purpose of legibly marking a disconnecting means as required in NEC 110.22, an identification plate is required unless the disconnect is a circuit breaker/fused switch installed within a switchboard and the circuit breaker/fused switch is identified to a prepared schedule in other clear building work. The identification plate must include the identification designation of the circuit source controlling the ungrounded disconnecting means.

SCHEMATIC LEGEND



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THERMOBOND BUILDINGS
58120 County Road 3 Elkhart, IN 46517
Phone: 800-423-8559, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER
ELECTRICAL SCHEMATICS

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

STAMPS AND SEALS

DATE 4/26/16
SALES MANAGER R. Pfiefer
DRAWN BY J. Wagner
SERIAL NUMBER -
SCALE 24x36 NONE
SHEET E1

ALARM NOTES:

1. ALL ALARMS TO BE NORMALLY CLOSED
2. UNSHIELDED SINGLE TWISTED PAIR WIRE IS STANDARD

STAMPS GOD MAIL

PROJECT NAME	Shelter Type A
DRAWING NUMBER	AGB9556
	KING COUNTY, WA 11'-8" X 30'-0" SHELTER
	ALARM DIAGRAM

THERMOBOND BUILDINGS
68120 County Road 8, Bristol, IN. 46517
Phone: 800-423-2559, www.thermobond.com

DATE	4/26/16
SCALE	1/4"=1'-0"
DRAWN BY	R. Prieto
CHECKED BY	J. Koerner
SERIAL NUMBER	-
SCALE	NONE
SHEET	E1.1

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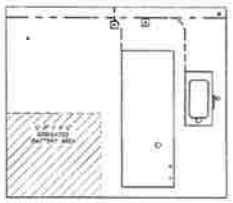
CABLE LADDER:

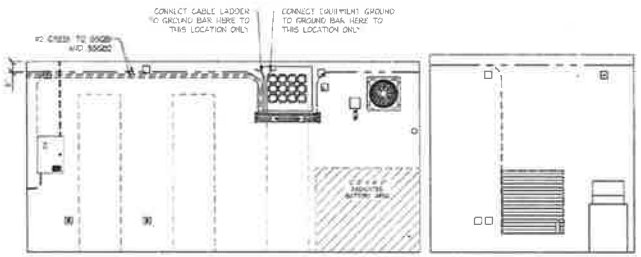
1. CABLE LADDER IS TO BE 8'-0" A.F.F. AND INSTALLED IN ACCORDANCE WITH ARTICLE 392 OF THE NEC LEVEL TO MTBA "VE" IN 10' OR SIMILAR

GROUNDING:

1. ALL GROUNDING EXCEPT FOR CABLE LADDER TO CONFORM TO ARTICLE 250 OF THE NEC
2. CABLE LADDER GROUNDING TO CONFORM TO ARTICLE 392.60 OF THE NEC

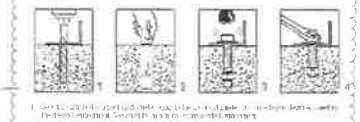


WALL E

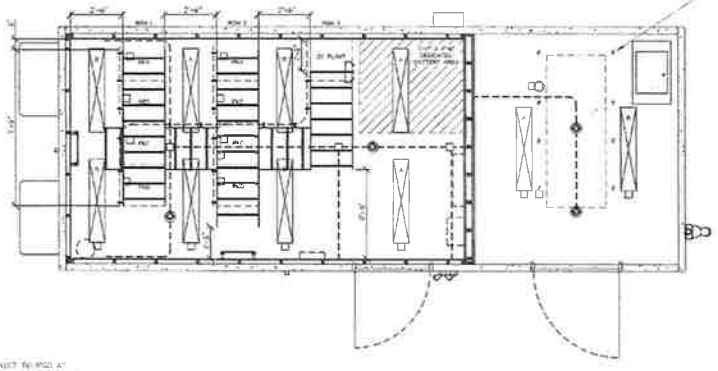


WALL C

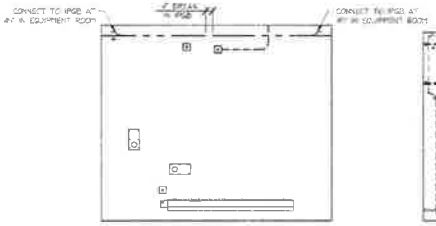
Generators to be mounted to the concrete floor using Red Head Trubolt+ Seismic Wedge Type Anchors (CWS-244) Minimum of (4) bolts placed along each side of the generators base frame (thru bottom flange into concrete)



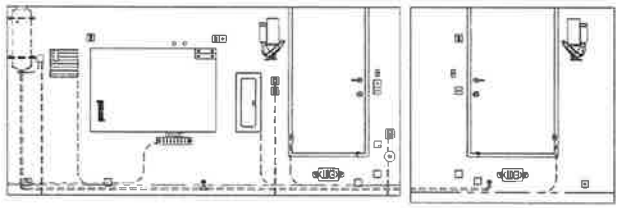
WALL D



WALL B



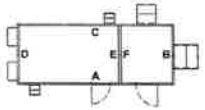
WALL F



WALL A

GROUNDING LAYOUT

SCALE: NTS



STAMPS AND SEALS

THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN. 46517
Phone: 800-423-2558, www.thermobond.com

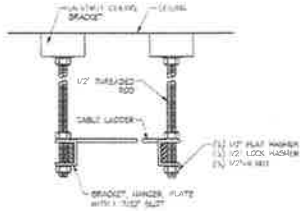
KING COUNTY, WA
11'-8" X 30'-0" SHELTER

GROUNDING LAYOUT

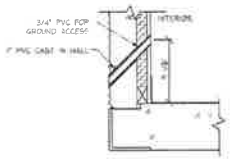
PROJECT NAME: Shelter Type A

DRAWING NUMBER: AGB9556

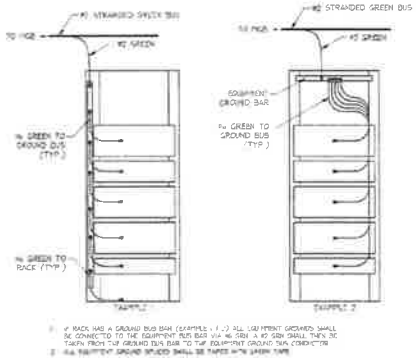
DATE: 4/26/16
SALES MANAGER: R. Pfister
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 24x36 NONE
SHEET: E2



LADDER INSTALLATION DETAIL
SCALE: NONE



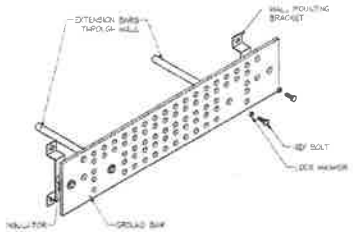
45° PVC NIPPLE DETAIL
SCALE: NONE



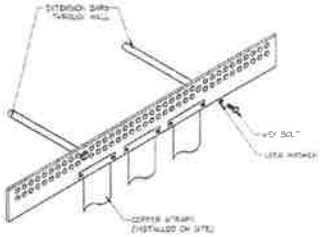
EQUIPMENT GROUNDING ELEVATION EXAMPLE
REFER TO ONLY WHEN EQUIPMENT IS INSTALLED AWAY FROM REAR OF EQUIPMENT
SCALE: NONE

GROUNDING NOTES:

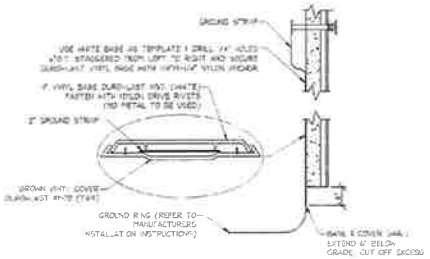
1. USE 40-DV AT ALL GROUND TERMINATIONS
2. IN PLACES WHERE THE GROUND BUS WIRE IS LESS THAN 2" FROM METALLIC OBJECTS AND HOT SURFACES, NEATLY TAPE THE SECTION WITH GREEN TAPE. WHERE NECESSARY, REMOVE TIE WRAPS (AND RE-INSTALL AFTER TAPING) AND TAPE C-TAPS FIRST AND THEN TAPE PAST THEM IN A CONTINUOUS MANNER.
3. PLACE #6/1 SHIELDING TURN(S) ON GROUND BAR PIGTAILS THAT CROSS WALL MOUNTED CONDUIT
4. ALL DOORS TO BE GROUNDED TO THEIR FRAMES WITH WELDING WIRE USE #2 GAUGE WELDING WIRE AND ETHERNET SUPPLY TWO-HOLE LUGS. PLACE 1 2" BAND OF GREEN TAPE AT EACH END OF THE JUMPER
5. INTERIOR PERIMETER GROUND BUS (PGB) #2 BARE STRANDED COPPER AROUND INSIDE PERIMETER OF BUILDING WITH EACH END LUGGED TO THE GROUND BAR.
6. BONDING JUMPERS: #6 GREEN STRANDED INSULATED WIRE FROM PANELS, EQUIPMENT TO PGB AND ACROSS LADDER RACK SPLICES/CROSSES/TEES
7. EQUIPMENT GROUND BUS: #2 GREEN RUN OUTSIDE EACH RUN OF CABLE LADDER WITH NEWTON CLIPS (NOTED)



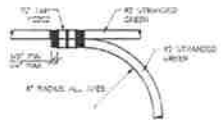
INTERIOR GROUND BAR DETAIL
SCALE: NONE



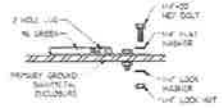
EXTERIOR GROUND BAR DETAIL
SCALE: NONE



GROUND BAR/STRAP/COVER DETAIL
SCALE: NONE

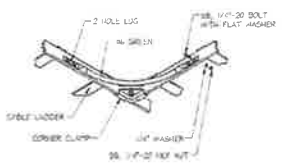


EQUIPMENT GROUND TAP
SCALE: NONE



1. SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS.
2. MAINTAIN MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.
4. ONLY ONE LUG PER SET OF BOLTS.

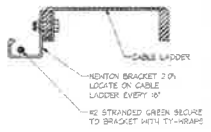
GROUNDING CONNECTION
SCALE: NONE



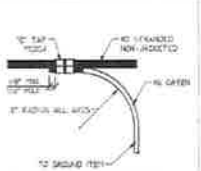
ACROSS EVERY LADDER TO LADDER CONNECTION

CABLE LADDER BOND DETAIL
SCALE: NONE

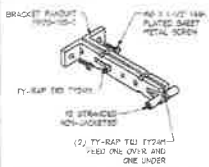
DOOR BONDING DETAIL
SCALE: NONE



NEWTON BRACKET GROUND
SCALE: NONE



IPGB RING GROUND TAP
SCALE: NONE



IPGB GROUND INSTALLATION
SCALE: NONE

STAMPS AND SEALS

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THERMOBOND BUILDINGS
68160 County Road 13, Elkhart, IN 46517
Phone: 800-421-2568, www.thermobond.com

PROJECT NAME: KING COUNTY, WA
11'-8" X 30'-0" SHELTER

DRAWING NAME: GROUNDING DETAILS

Shelter Type A

DRAWING NUMBER: AGB9556

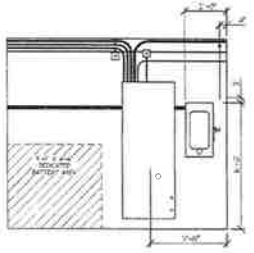
DATE: 4/26/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 3/4"=1" NONE
SHEET: E2.1

COMMERCIAL POWER:

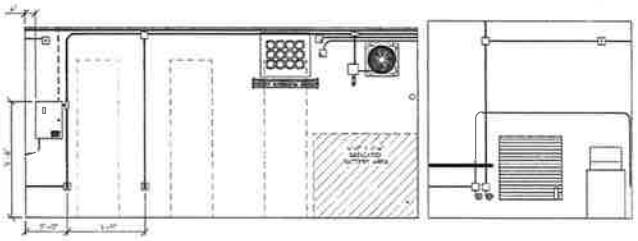
120/240VAC 200AMP SINGLE PHASE SERVICE

CONDUIT RUNS:

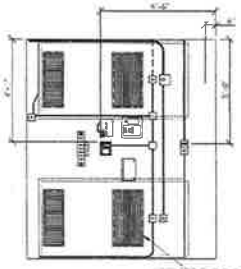
1. ALL CONDUIT RUNS TO BE EMT UNLESS STATED OTHERWISE.
2. ALL CONDUIT RUNS TERMINATING AT SERVICE ENTRANCE EQUIPMENT SHALL CONTAIN BONDING BUSHINGS.
3. RACEWAYS CARRYING 3 OR MORE CURRENT CARRYING CONDUCTORS SHALL BE DERATED PER TABLE 310-15(B)(3)(a) OF APPLICABLE EDITION OF THE NEC.
4. CONDUIT FILL IS BASED ON CHAPTER 9, APPENDIX C OF THE NEC.



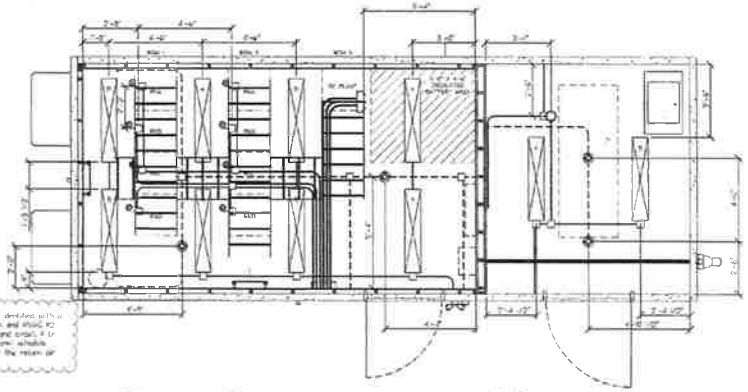
WALL E

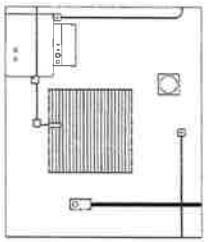


WALL C

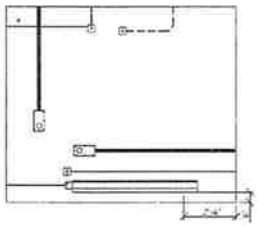


WALL D

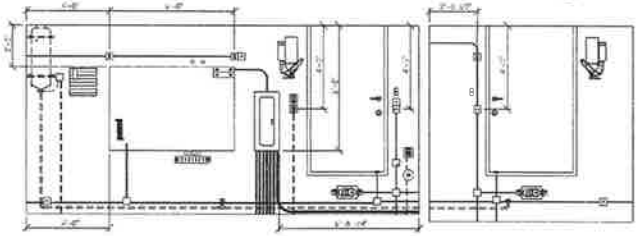




WALL B



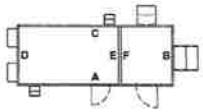
WALL F



WALL A

ELECTRICAL DIMENSIONS

SCALE 3/8"=1'-0"



STAMPS AND SEALS

THERMOBOND BUILDINGS

56120 County Road 3, Elkhart, IN 46517
Phone 800-423-2508, www.thermobond.com

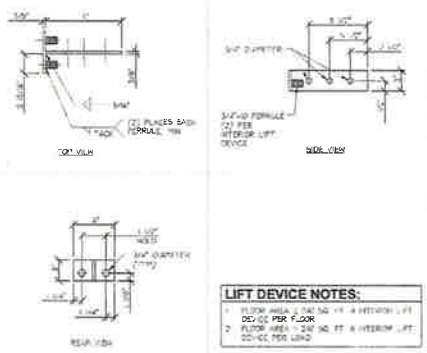
KING COUNTY, WA
11'-8" X 30'-0" SHELTER

ELECTRICAL DIMENSIONS

PROJECT NAME: Shelter Type A

DRAWING NUMBER: AGB9556

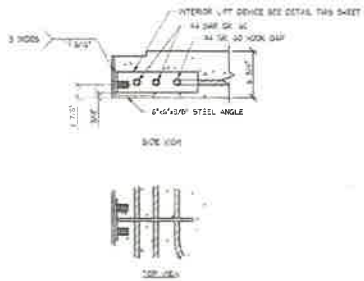
DATE: 4/28/16
SALES MANAGER: R Priefer
DRAWN BY: J. Wagner
SERIAL NUMBER:
SCALE: 3/8"=1'-0" NONE
SHEET: E4



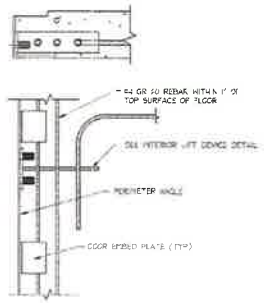
LIFT DEVICE NOTES:

1. [illegible] DEVICE PER FLOOR
2. FLOOR AREA > 240 SQ. FT. A INTERIOR LIFT DEVICE PER LOAD

1 **INTERIOR LIFT DEVICE**
SCALE: 1-1/2" = 1'-0"

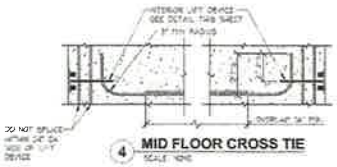


2 **FLOOR INTERIOR LIFT DEVICE DETAIL**
SCALE: 1-1/2" = 1'-0"



3 **DETAIL FOR DOOR LOCATION**
SCALE: 1-1/2" = 1'-0"

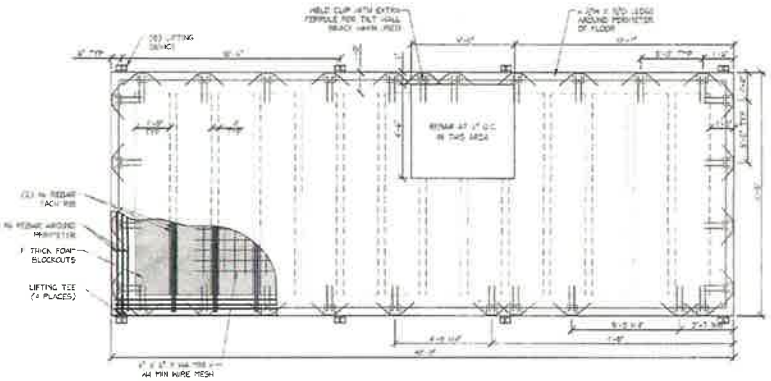
THIS DETAIL APPLIES ONLY WHEN LIFT POINT IS UNDER DOOR OPENING



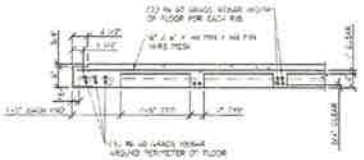
4 **MID FLOOR CROSS TIE**
SCALE: NONE

5 **END FLOOR CROSS TIE**
SCALE: NONE

ONE PER LIFT DEVICE PAIR REBAR #4 GR 60



FLOOR LAYOUT
SCALE: 3/8" = 1'-0"



6 **TYPICAL FLOOR SECTION**
SCALE: 3/4" = 1'-0"

CASTING DETAIL NOTES:

REINFORCING BAR
- REINFORCING BAR TO BE ASTM A615, LATEST REVISION, PLAIN BILLET STEEL
- REINFORCING BAR GRADE 60 OR HIGHER IS NOT PERMITTED FOR EMBED PLATE EXTENSIONS
- REINFORCING BARS FOR CLASS STRENGTH AND TAG TO BE ASTM A615 GRADE 60
- ASTM FILLET ACCEPTABLE PER ASTM A615, SECTION 10, SCALING AND KITTING NOT PERMITTED
- REINFORCING BAR BEND RADII SHALL NOT BE LESS THAN SIX BAR DIAMETERS
- LOCATION AND FORMING TOLERANCES +/- 1"
- MAXIMUM CONCRETE COVER BETWEEN CASTING BED AND PRIMARY LOAD STRENGTH REINFORCING BAR SHALL NOT EXCEED 1"
- TRANSVERSE REINFORCING BARS (PRIMARY STRUCTURAL REBAR) SHALL NOT BE SPLICED
- LONGITUDINAL REINFORCING BARS (T45 REBAR) MAY BE SPLICED AT MIDS EVERY 40" WITH A MINIMUM OVERLAP OF 18"

WELDING
- WELDING PRACTICE FOR REINFORCING BAR TO CONFORM TO AWS D1.4, LATEST EDITION
- WELDING PRACTICE FOR STRUCTURAL STEEL TO CONFORM TO AWS D1.1, LATEST EDITION
- DO NOT WELD REINFORCING BAR WITHIN THREE BAR DIAMETERS OF A BEND
- DO NOT WELD GRADE 60 REINFORCING BAR
- GRADE 60 REINFORCING BAR REQUIRED TO BE WIRE TIED CONNECTIONS ONLY
- CONTINUOUS ELECTRODES TO CONFORM TO AWS A5.18 OR AWS A5.20 LATEST EDITION
- OTHER ELECTRODES TO CONFORM TO APPLICABLE AWS STANDARDS

OTHER MATERIALS
- PLATE AND ANGLE TO BE ASTM A36 Fy = 36 KSI (MIN.)
- HEADED STUDS TO CONFORM TO ASTM A108 AND AWS D1.1 HIGH STRENGTH STEEL IS NOT PERMITTED
- HOLES SHALL BE DRILLED AND REAMED OR PUNCHED. PLASMA CUTTING OR TORCHING IS NOT PERMITTED
- FLOOR-WALL CONNECTION PLATES (WP-H) ARE NOT TO BE SPACED MORE THAN 1' APART
- WELD PLATE WP-H MAXIMUM SPACING 3'-0" ON LONG WALLS

CASTING LEGEND

- LIFTING FERRULE WELD CLIP
- FLOOR WELD CLIP
- STANDARD WELD CLIP
- EXTERIOR LIFTING DEVICE
- ADDITIONAL LIFTING PIN

CASTING TOLERANCES

WALL PANELS (SEE NOTE 1)	TOLERANCE	FLOOR PANELS	TOLERANCE
LENGTH	+/- 1/8	LEVEL	+/- .25"
WIDTH	+/- 1/8	FLATNESS	+/- .25"
DEPTH	+/- 1/8	VERTICAL SWEEP	+/- .25"
		FLOOR SWEEP	+/- .25"
EMBED PLATE POSITION	+/- 1/4		
EMBED PLATE ORIENTATION	+/- 1/8		
PENETRATION LOCATION (SEE NOTE 3)	+/- 1/8		
TOWING	+/- 1/4		
WARPING	+/- 1/4 IN 10'-0" LEAD DIMENSION, MAX		
SQUARE (SEE NOTE 2)	+/- 1/8		

NOTES:
1. MAXIMUM DEVIATION OVER HEIGHT
2. MAXIMUM DIFFERENCE IN DIAGONAL DIMENSIONS
3. LOCATED WITH A TEMPLATE

STAMPS AND SEALS

Structural Observation Required

Red Note: STRUCTURAL OBSERVATION REQUIRED AT FACTORY DURING CONSTRUCTION AND IN FIELD AT FINAL PLACEMENT PER 2015 IBC PER CATEGORY IV STRUCTURES. See Note 1704.6 1704.6.1 & 1704.6.2

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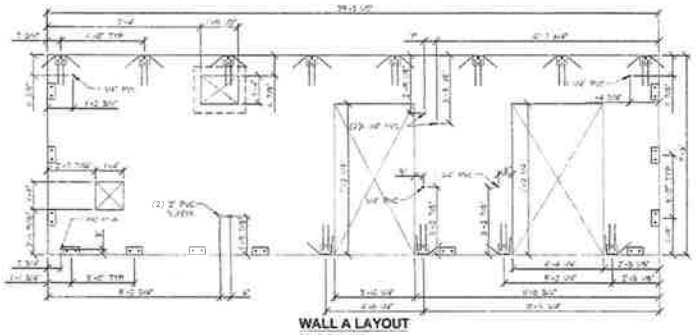
58180 County Road 9, Elkhart, IN 46517
Phone: 800-420-6609, www.thermobond.com

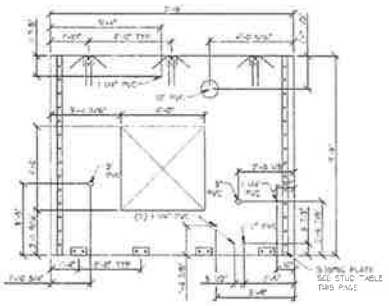
KING COUNTY, WA
11'-8" X 30'-0" SHELTER
FLOOR CASTING

PROJECT TYPE: Shelter Type A
DRAWING NUMBER: AGB9556

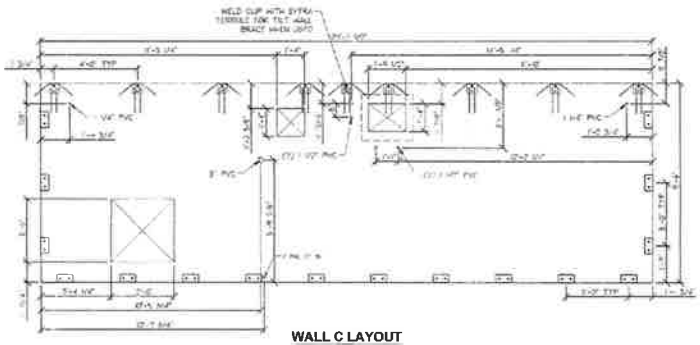
DATE: 4/26/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 24X36 NONE
SHEET: S1



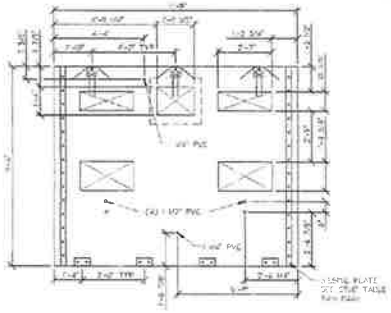
WALL A LAYOUT



WALL B LAYOUT



WALL C LAYOUT



WALL D LAYOUT

CASTING LEGEND

- LIFTING HANDLE / WELD CLIP
- FLOOR WELD CLIP
- STANDARD WELD CUP
- EXTERIOR LIFTING DEVICE
- ROOF LIFTING PIN

STUD TABLE

SHELTER LENGTH (FEET)	SHELTER WIDTH (FEET) 8'	10'	12'	14'
	NUMBER OF STUDS			
8'	4	4	5	5
9'	4	4	5	5
10'	4	4	5	5
11'	4	4	5	5
12'	4	4	5	5
13'	4	4	5	5
14'	4	4	5	5
15'	5	5	6	6
16'	5	5	6	6
17'	5	5	6	6
18'	5	5	6	6
19'	5	5	6	6
20'	5	5	6	6
21'	5	5	6	6
22'	5	5	6	6
23'	5	5	6	6
24'	5	5	6	6
25'	5	5	6	6
26'	5	5	6	6
27'	5	5	6	6
28'	5	5	6	6
29'	5	5	6	6
30'	5	5	6	6
31'	5	5	6	6
32'	5	5	6	6
33'	5	5	6	6
34'	5	5	6	6
35'	5	5	6	6
36'	5	5	6	6
37'	5	5	6	6
38'	5	5	6	6
39'	5	5	6	6
40'	5	5	6	6

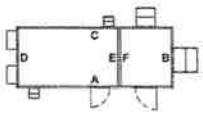
EXTERIOR FINISH SCHEDULE

ITEM	SURFACE	FINISH	PAINT COLOR
ROOF	TROWELED SMOOTH	MASSEX ELASTOMERIC COATING PAINT (WHITE STAIN TO CONTRAST)	TELEDYNE BROWN
WALLS	EXPOSED AGGREGATE		
DOORS	STEEL, PAINTED	PAINT	TELEDYNE BROWN
JOINTS	AS PACKAGED	SEALED PER DETAILS SHEET	TELEDYNE BROWN

CASTING TOLERANCES

WALL PANELS (SEE NOTE 1)	TOLERANCE	FLOOR PANELS	TOLERANCES
LENGTH	+/- 1/8	LEVEL	+/- 1/8"
WIDTH	+/- 1/8	SQUARE	+/- 1/8"
DEPTH	+/- 1/8	VERTICAL WARP	+/- 1/8"
		LOW SPOT	+/- 1/4"
(TRIM PLATE) POSITION	+/- 1/4		
(TRIM PLATE) FLATNESS	+/- 1/16		
PENETRATION LOCATION (SEE NOTE 1)	+/- 1/4		
BOWED	+/- 1/4		
WARPING	+/- 1/8 IN 2' LEAST DIMENSION, MAX		
SQUARE (SEE NOTE 1)	+/- 1/8		

NOTES:
1. CASTING DEVIATION OVER PANEL
2. ALLOWED DIFFERENCE IN DIAGONAL DIMENSIONS
3. LOCATION NOTED DIAGONALLY



STAMPS AND SEALS

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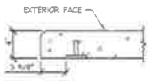
KING COUNTY, WA
11'-8" X 30'-0" SHELTER

WALL CASTING

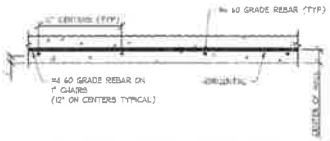
PROJECT NAME: Shelter Type A

DRAWING NUMBER: AGB9556

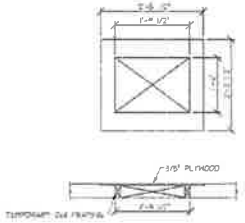
DATE: 4/28/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 3/4IN = NONE
SHEET: S2



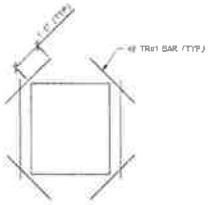
1 **TYPICAL SHORTWALL DETAIL**
SCALE: 1-1/2" = 1'-0"



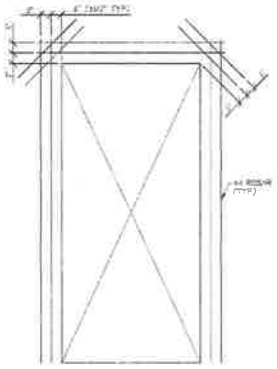
2 **TYPICAL WALL REBAR LAYOUT**
SCALE: 1-1/2" = 1'-0"



3 **MICROFLECT PANEL DETAIL**
SCALE: NONE



4 **TYPICAL OPENING DETAIL**
SCALE: NONE



5 **DOOR REBAR DETAIL**
SCALE: NONE

CASTING TOLERANCES

WALL PANELS (SEE NOTE 1)	TOLERANCE	FLOOR PANELS	TOLERANCES
LENGTH	+/- 1/2	LEVEL	+/- 1/8"
WIDTH	+/- 1/8	SQUARE	+/- 1/8"
DEPTH	+/- 1/8	VERTICAL OVER 8'	+/- 1/8"
		EDGE SWEEP	+/- 1/8"
EMBED PLATE POSITION	1/4		
EMBED PLATE WARPAGE	1/8		
PENETRATION LOCATION (SEE NOTE 3)	1/8		
SKEW/ WARPING	+/- 1/4 +/- 1/4 IN 10' LEAST DIMENSION, MAX		
REBAR (SEE NOTE 2)	+/- 1/8		

NOTES:
1. MAXIMUM DEVIATION OVER PANEL.
2. MAXIMUM DIFFERENCE IN CLOSING DIMENSIONS.
3. LOCATION NOTED TO CENTERLINE.

STAMPS AND SEALS

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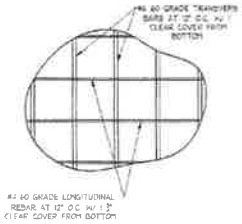
Phone: 800-348-2668, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER

WALL CASTING DETAILS

PROJECT TYPE: Shelter Type A
DRAWING NUMBER: AGB9556

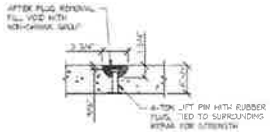
DATE: 4/28/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER:
SCALE: 3/4"=1'-0" NONE
SHEET: S2.1



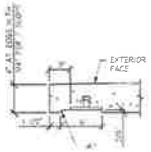
1 **TYPICAL ROOF REBAR LAYOUT**
SCALE: NONE

REBAR NOTES:

- SHORT (TENSION) DIRECTION 1" FROM BOTTOM OF CASTING BED
- LONG (TENSION) DIRECTION 1-1/4" OR JUST ABOVE TENSION REBAR



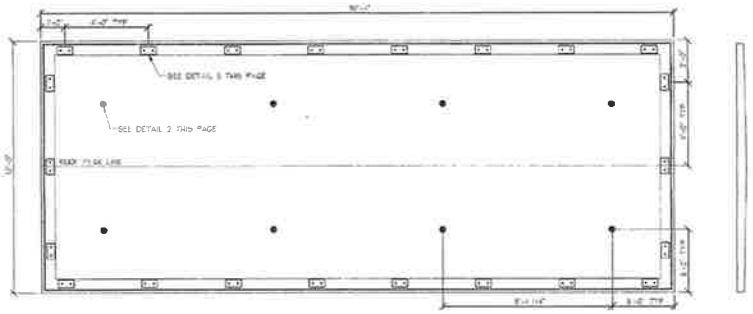
2 **SECTION AT LIFTING PIN**
SCALE: 1-1/2" = 1'-0"



3 **SECTION AT ROOF PIN**
SCALE: 1-1/2" = 1'-0"

CASTING LEGEND

- LIFTING FERRULE WELD CUP
- FLOOR WELD CUP
- STANDARD WELD CUP
- EXTERIOR LIFTING DEVICE
- ROOF LIFT PIN



ROOF LAYOUT
SCALE: 3/8" = 1'-0"

CASTING TOLERANCES

WALL PANELS (SEE NOTE 1)	TOLERANCE	FLOOR PANELS	TOLERANCES
LENGTH	+/- .06	LEVEL	+/- 1/8"
HEIGHT	+/- .06	SQUARE	+/- .09"
DEPTH	+/- .06	JOINT C.L. MARK	+/- 1/8"
		DIAG. SHEER	+/- 1/8"
EMBED PLATE POSITION	+/- .06		
EMBED PLATE TIP/FLUSH	+/- .06		
PIPE/HEATER LOCATION (SEE NOTE 2)	+/- .06		
BOWING	+/- .06		
WARPING	+/- .06 IN 10' (EAST DIMENSION, THIS)		
SQUARE (SEE NOTE 2)	+/- .06		

NOTES:
1. THICKNESS DEVIATION OVER PANEL.
2. "FACTORY" DIFFERENCE IN DIAGONAL DIMENSIONS.
3. ALL ARE UNLESS OTHERWISE NOTED.

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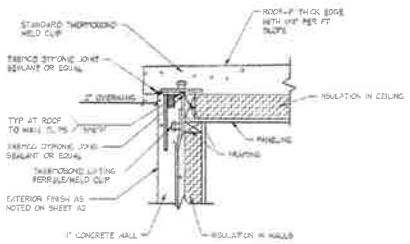
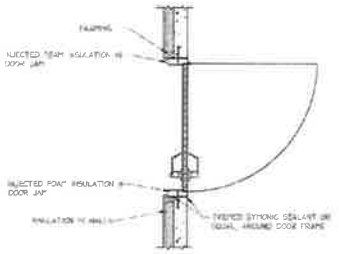
KING COUNTY, WA
11'-8" X 30'-0" SHELTER
ROOF CASTING

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

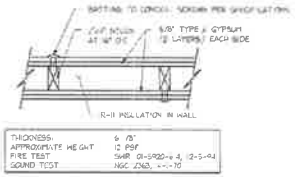
DATE: 4/28/16
SALES MANAGER: R. Pfeifer
DRAWN BY: J. Wagner
SERIAL NUMBER:
SCALE: 1" 24X36": NONE
SHEET: S3



2 TYPICAL ROOF TO WALL SECTION DETAIL
SCALE 1-1/2" = 1'-0"



4 TYPICAL DOOR SECTION DETAIL
SCALE 3/4" = 1'-0"



THICKNESS:	6 7/8"
APPROXIMATE WEIGHT	12 PSF
FIRE TEST	UBC 26-3-92 & 26-4, 12-5-94
SOUND TEST	NGC 2060, +41-70

5 2 HOUR INTERIOR WALL CONSTRUCTION DETAIL
GA FILE WP NO. 4136
SCALE 1-1/2" = 1'-0"

NOTE:
BASE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE OF 2 X 4 WOOD STUDS AT 24" O.C. WITH 1 3/4" TYPE W DRYWALL SCREWS 12" O.C. FACE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE WITH 1 7/8" TYPE W DRYWALL SCREWS 12" O.C. AND OFFSET 6" FROM SCREWS IN BASE LAYER JOINTS STAGGERED W/ EACH LAYER AND SIDE. (SOUND RATING)

CROSS SECTION NOTES:
FLOORS ARE TO BE LEVELED AND SEALED BEFORE SHIPPING

CONSTRUCTION MATERIALS:

INTERIOR FINISH:
- FLOOR: 1/8" X 12" X 12" VINYL TILE WITH 4" BASE COVE
- WALLS: 1/2" FRP COVERED PANELING (CLASS "C" MINIMUM)
- CEILING: 1/2" FRP COVERED PANELING (CLASS "C" MINIMUM)

INSULATION:
- WALLS: 2 1/2" THERMAX FOAM INSULATION (R-15.8) ESR-1659
- CEILING: 3 1/2" THERMAX FOAM INSULATION (R-22.1) ESR-1659

FRAMING:
- WALLS: 2" X 3" FURRING STRIPS ON END AT 24" O.C.
- CEILING: 2" X 4" FURRING STRIPS ON END AT 24" O.C.

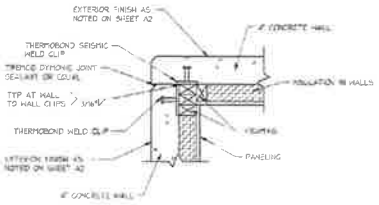
CONCRETE:
- FLOOR: 4000psi LIGHTWEIGHT
- WALLS: 4000psi LIGHTWEIGHT
- CEILING: 5000psi LIGHTWEIGHT

GEN ROOM MATERIALS:

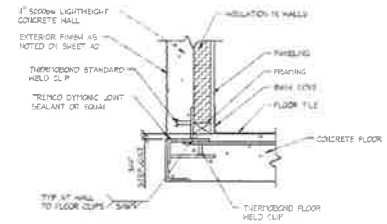
INTERIOR FINISH:
- FLOOR: TWO PART EPOXY WITH NON SLIP FINISH
- WALLS AND CEILING: ALKALI RESISTANT PRIMER WITH 2 COATS OF INTERIOR SEMI GLOSS ACRYLIC ENAMEL FINISH (WHITE)

INSULATION:
- EXTERIOR WALLS: N/A
- INTERIOR WALL: FIBERGLASS BATT INSULATION (R-11)
- CEILING: N/A

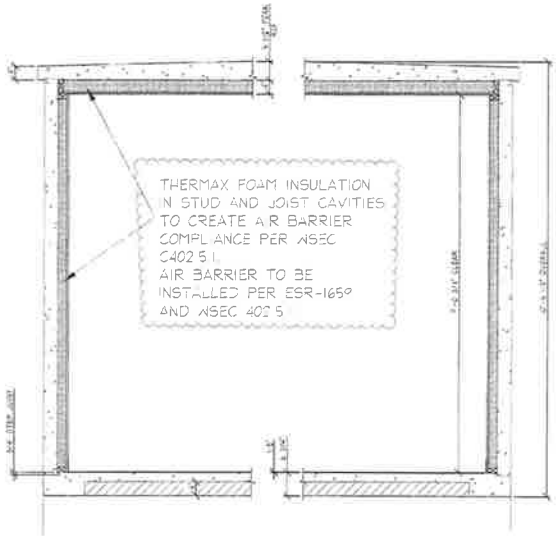
FRAMING:
- INTERIOR WALL: 2" X 4" FURRING STRIPS AT 16" O.C.



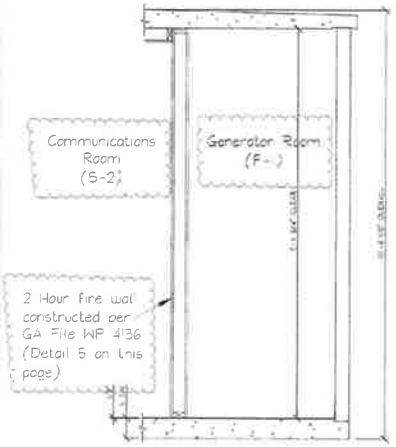
3 TYPICAL WALL TO WALL SECTION DETAIL
SCALE 1-1/2" = 1'-0"



1 TYPICAL WALL TO FLOOR SECTION
SCALE 1-1/2" = 1'-0"



BUILDING SECTION
SCALE 3/4" = 1'-0"



GEN ROOM SECTION
SCALE 3/4" = 1'-0"

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58120 County Road 3, Elkhart, IN 46517
Phone: 800-423-8658, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER
CROSS SECTION

PROJECT TYPE: Shelter Type A
DRAWING NUMBER: AGB9556

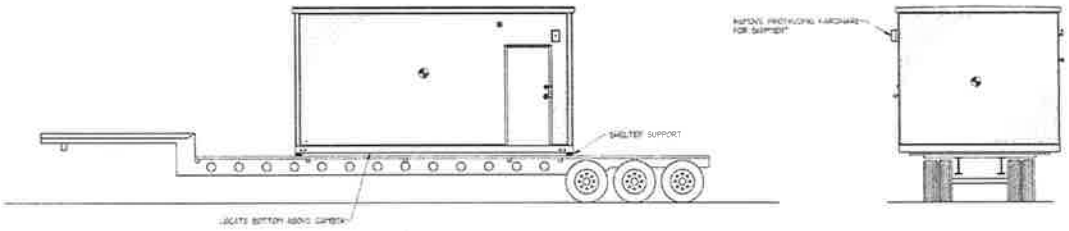
DATE	4/28/16
SALES MANAGER	R. Pfeifer
DRAWN BY	J. Wagner
SERIAL NUMBER	-
SCALE = 24X36	NONE
SHEET	S4

TRANSPORT NOTES:

1. CARTAGE COMPANY TO EXECUTE TIE DOWN, DETERMINE ADEQUACY OF TIE DOWN AND IS RESPONSIBLE FOR LOCATING SHELTER C.G. FOR EQUIPMENT REQUIREMENTS AND DOT COMPLIANCE.
2. REMOVE AND SHIP LOOSE ALL FIXTURES PROTRUDING OVER WIDTH LIKELY TO BE DAMAGED
3. COVER OPENINGS WATERTIGHT
4. PROVIDE DRIVER WITH SET OF LIFTING DRAWINGS AND INSTRUCTIONS TO DELIVER LIFTING DRAWING WITH SHELTER AT SITE OFF-LOAD
5. INSPECT SHELTER FOR DAMAGE BEFORE RELEASING DRIVER

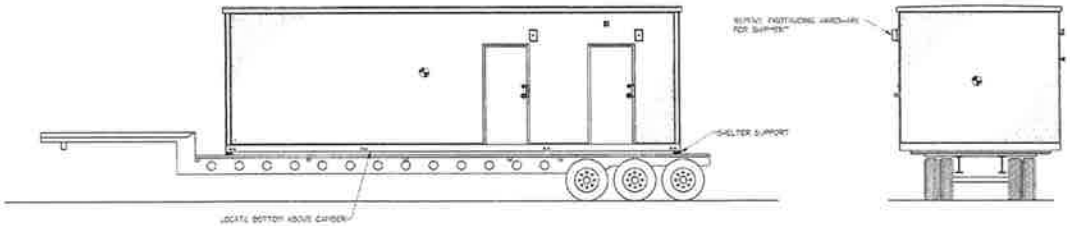
DUNNAGE AND TIE DOWN NOTES:

1. BLOCK SHELTER ONLY AT THE ENDS UNDER THE END WALLS
2. BLOCK SHELTER ABOVE HIGHEST POINT OF TRAILER CAMBER BY AT LEAST 1/2"



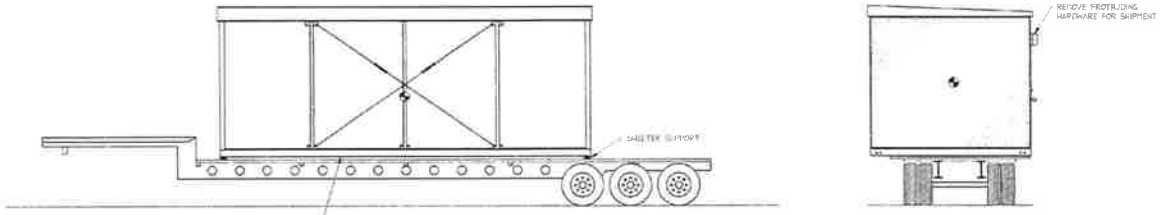
UP TO 20 FT LONG SHELTER

CENTER OF GRAVITY



OVER 20 FT LONG SHELTER

CENTER OF GRAVITY



OPEN SIDED MODULAR SHELTER

CENTER OF GRAVITY

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THERMOBOND BUILDINGS
58120 County Road 3, Elkhart, IN. 46517
Phone: 800-423-2559, www.thermobond.com

KING COUNTY, WA
11'-8" X 30'-0" SHELTER
TRANSPORT CONNECTIONS

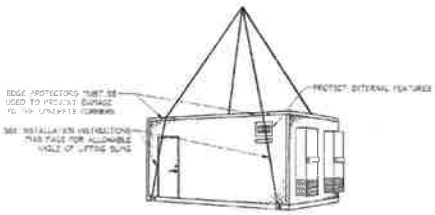
PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

STAMPS AND SEALS

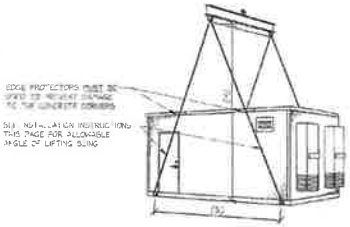
KEVIN M. [illegible]
STATE OF WASHINGTON
PROFESSIONAL ENGINEER

DATE: 4/28/16
SALES MANAGER: R. Pfiefer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 24X36 NONE
SHEET: T1

(4) POINT OPTION 1 BUILDING LIFT
(PREFERRED METHOD)
SLINGS VERTICAL



(4) POINT OPTION 3 BUILDING LIFT

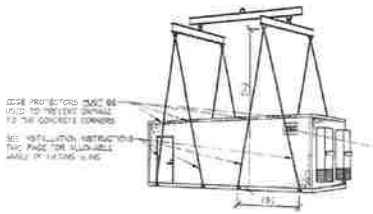


(4) POINT OPTION 2
BUILDING LIFT
SEE TABLE

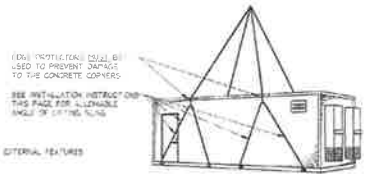
TABLE 1 (4) POINT LIFT OPTION 2

LIFT DEVICE SEPARATION (B)	MINIMUM LIFT DEVICE HEIGHT (C)
8'-0"	5'-0"
9'-0"	5'-0"
10'-0"	5'-0"
11'-0"	5'-0"
12'-0"	5'-0"
13'-0"	5'-0"
14'-0"	5'-0"
15'-0"	5'-0"
16'-0"	5'-0"
17'-0"	5'-0"
18'-0"	5'-0"

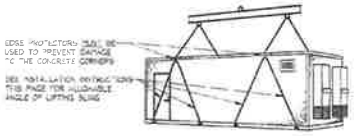
1 4 POINT LIFT OPTIONS
SCALE: NONE



(8) POINT OPTION 1 BUILDING LIFT
(PREFERRED METHOD)



(8) POINT OPTION 3 BUILDING LIFT

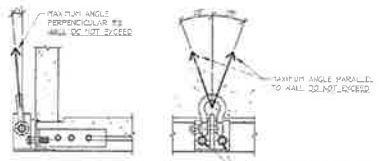


(8) POINT OPTION 2
BUILDING LIFT
SEE TABLE

TABLE 1 (8) POINT LIFT OPTION 1

LIFT DEVICE SEPARATION (B)	MINIMUM LIFT DEVICE HEIGHT (C)
8'-0"	5'-0"
9'-0"	5'-0"
10'-0"	5'-0"
11'-0"	5'-0"
12'-0"	5'-0"
13'-0"	5'-0"
14'-0"	5'-0"
15'-0"	5'-0"
16'-0"	5'-0"
17'-0"	5'-0"
18'-0"	5'-0"

2 8 POINT LIFT OPTIONS
SCALE: NONE



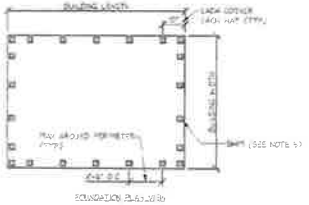
BOLT INSTALLATION:

1. DRILL (NO PILOT) HOLE 1/4" DEEP MAX.
2. DO NOT DRIVE WITH HIGH PRESSURE IMPACT WRENCH.

3 END INSTALLATION AND SLING LIMITS
SCALE: NONE

RIGGING NOTES:

1. SHELTER MUST BE LIFTED ONLY AT POINTS PROVIDED, USING APPROPRIATE SPREADER BARS AND SLINGS, AND WITHIN THE LIMITS SHOWN ON THIS DRAWING.
2. UNLESS OTHERWISE APPROVED OR INDICATED, LIFT ONLY THE SHELTER SELF-WEIGHT. DO NOT LIFT THE SHELTER WITH ADDITIONAL EQUIPMENT INSIDE.
3. INSPECT EACH LIFT DEVICE FOR TORN CRACKS, WARPING OR OTHER DEFECTS BEFORE INSTALLING ON SHELTER. DO NOT USE A LIFTING DEVICE THAT HAS ANY CRACKS, QUESTIONABLE WELDS, IRREGULAR OR ELONGATED HOLES, OR IS WORN OUT OR MISSHAPE.
4. INSPECT BOLTS BEFORE INSTALLATION. DO NOT USE ANY BOLTS THAT HAVE DAMAGED THREADS, ARE RUSTY, APPEAR ELONGATED OR ARE MALFORMED IN ANY WAY.
5. DO NOT ROUTE SLING NEAR HVAC SYSTEMS.
6. REMOVE OR PROTECT DOOR HARDWARE AND OTHER PROTRUSIONS FROM DAMAGE.
7. RIGGER IS TO PROVIDE ALL EQUIPMENT ABOVE THE THERMOBOND EXTERIOR LIFTING DEVICE THE RIGGER IS RESPONSIBLE FOR ENSURING THAT THE QUALITY AND ELEMENTS LISTED HEREIN ARE MET.
8. RIGGING SHALL CONFORM TO APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.
9. IF SHELTER IS DELIVERED WITH TEMPORARY SHIPPING WALLS OR ANY OTHER TEMPORARY STRUCTURE INSTALLED FOR TRANSPORT, DO NOT REMOVE BEFORE SHELTER PLACEMENT.
10. DO NOT USE SLINGS @ ACUTE ANGLES FOR LIFTING.
11. DO NOT SET THE SHELTER ON AN UNEVEN OR UNSTABLE SURFACE.



INSTALLATION NOTES:

1. ALL FOUNDATION WORK BY OTHERS AND SUBJECT TO LOCAL INSPECTION.
2. FOUNDATION SURFACE SHALL BE LEVEL TO WITHIN +/- 1/8" PER 10 LINEAR FEET IN ANY DIRECTION.
3. FOUNDATION SHALL BE SQUARE TO WITHIN +/- 1/4".
4. THE DOWN HEATER IF USED MUST BE INTIMATELY AGAINST SHIMS.
5. SHELTER MUST BE SHIMMED TO LEVEL ABOVE PREEXISTING IN THE SLAB AND BUILDING FLOOR SYSTEM. SHIM HARDNESS NOT LESS THAN 60 DUROMETER OR COMPRESSIVE STRENGTH 4,000 PSI MINIMUM. SHIMS NOT LESS THAN 6" SQUARE, THICKNESS AS REQUIRED.
6. INSPECT MORTAR ON FOR DEBRIS AND REMOVE BEFORE SETTING SHELTER.

SHELTER MUST BE SHIMMED

4 SHELTER SHIMMING
SCALE: NONE

STAMPS AND SEALS

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KING COUNTY, WA
11'-8" X 30'-0" SHELTER
INSTALL DETAILS

PROJECT NAME: Shelter Type A
DRAWING NUMBER: AGB9556

DATE: 4/28/16
SALES MANAGER: R. Pfeifer
DRAWN BY: J. Wagner
SERIAL NUMBER: -
SCALE: 1" = NONE
SHEET: T2