



City of Tacoma, WA

**TACOMA POWER**

**REQUEST FOR BIDS**

**TACOMA RAIL RADIO MONOPOLE**

**SPECIFICATION NO. PG21-0533N**





**City of Tacoma  
Power/Generation Engineering**

**REQUEST FOR BIDS PG21-0533F  
Tacoma Rail Radio Monopole**

**Submittal Deadline:** 11:00 a.m., Pacific Time, Wednesday, September 1, 2021

**Submittal Delivery:** Sealed submittals will be received as follows:

**By Email:**

[sendbid@cityoftacoma.org](mailto:sendbid@cityoftacoma.org)

Maximum file size: 35 MB. Multiple emails may be sent for each submittal.

**Bid Opening:** Submittals in response to a Request for Bids will be opened by a Purchasing representative. Final results are posted to the website as they become available.

**Solicitation Documents:** An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at [www.TacomaPurchasing.org](http://www.TacomaPurchasing.org).

- [Register for the Bid Holders List](#) to receive notices of addenda, questions and answers and related updates.
- Click here to see a [list of vendors registered for this solicitation](#).

**Pre-Proposal Meeting:** A pre-proposal meeting will be held at the Tacoma Rail Office, 2601 State Route 509, N. Frontage Rd, Tacoma, WA 98421 Tuesday, August 24, 2020 at 10:00 a.m.

**Project Scope:** Install 139' monopole to include drilled shaft foundation, pole stacking, installing equipment mounts, and grounding

**Estimate:** \$90,000 - \$100,000

**Paid Sick Leave:** The City of Tacoma requires all employers to provide paid sick leave as set forth in Title 18 of the Tacoma Municipal Code. For more information, visit [our Minimum Employment Standards Paid Sick Leave webpage](#).

**Americans with Disabilities Act (ADA Information:** The City of Tacoma, in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Specification materials can be made available in an alternate format by emailing Gail Himes at [ghimes@cityoftacoma.org](mailto:ghimes@cityoftacoma.org), or by calling her collect at 253-591-5785.

**Federal Title VI Information:**

"The City of Tacoma" in accordance with provisions of Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 U.S.C. sections 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration of award.

**Additional Information:** Requests for information regarding the specifications may be obtained by contacting Dawn DeJarlais, Buyer by email to [ddejarlais@cityoftacoma.org](mailto:ddejarlais@cityoftacoma.org)

**Protest Policy:** City of Tacoma [protest policy](#), located at [www.tacomapurchasing.org](http://www.tacomapurchasing.org), specifies procedures for protests submitted prior to and after submittal deadline.



Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.

## **SPECIFICATION CONTENTS**

This Specification contains the following:

1. Request for Bids
2. Bidder's Checklist
3. Letters and Calls
4. Special Notice to Bidders
5. Signature Page
6. State Responsibility and Reciprocal Bid Form
7. Proposal Sheets
8. Contractor's Record of Prior Contracts (Three Minimum, Section 01300 – Subsection 1.1)
9. List of Equipment
10. Substitution Request Form
11. Equity In Contracting (EIC) Memo
12. EIC Program Regulations
13. EIC Special Notice to Bidders
14. EIC Utilization Form
15. EIC Code
16. Insurance Certificate Requirements
17. Contractor's Work Hazard Analysis Report
18. Contractor Performance Review
19. General Provisions
20. Prevailing Wages
21. Sustainability Worksheet
22. Special Provisions
23. Technical Provisions
24. Appendices
  - Appendix A – Geotechnical Memo
  - Appendix B – Drawings
  - Appendix C – Valmont Installation Instructions
  - Appendix D – Tacoma Rail Stormwater Pollution Prevention Plan (SWPPP)
  - Appendix E – Soil Sample Analytical Report, February 26, 2020
  - Appendix F – Sample Documents
    - a) Performance Bond
    - b) Payment Bond
    - c) Contract
    - d) General Release

## BIDDER'S CHECK LIST

The bidder's attention is especially called to the following forms which must be submitted with your bid:

- (a) Schedule of bid price.  
The unit/lump sum prices bid must be shown in the space provided.
- (b) Signature page.  
To be completed and signed by the bidder.
- (c) Certification of Compliance with Wage Payment Statutes
- (d) ~~Proposal data sheets (required when included in the proposal).~~
- (e) Contractor's Record of Prior Contracts **(required/not required)**.
- (f) List of Equipment **(required/not required)**.
- (g) State Responsibility and Reciprocal Bid Preference Form **(required/not required)**.
- (h) ~~Subcontractor List (applicable only for construction contracts of \$1,000,000 and over).~~
- (i) **CONSTRUCTION CONTRACTS:** Bid proposals for contractor labor must include fully completed "EIC Utilization Form".  
  
~~**NON-CONSTRUCTION CONTRACTS:** Bid proposals for material and services must include fully completed "Prime Contractor Pre-Work Form".~~
- (j) "Submittals Required with Bid" as are listed in the Special Provisions Section 01300 – Submittals and Shop Drawings (for construction contracts) or Submittals Section (for supply contracts).
- (k) Sustainability Worksheet

The following forms are to be executed after the contract is awarded:

- (a) Contract  
This agreement is to be executed by the successful bidder.
- (b) Performance and Payment Bonds **(required/not required)**.  
To be executed by the successful bidder and his surety company, and countersigned by a local resident agent of said surety company.
- (c) Contractor's Work Hazard Analysis Report (for construction contracts only)
- (d) General Release to the City of Tacoma (for construction contracts only).  
To be executed by the successful bidder upon completion of work and prior to the receipt of the final payment.



## LETTERS AND CALLS

All information requested prior to the bid opening is subject to the limitations in Paragraph 1.02 of the **General Provisions**.

Address all letters to the Department of Public Utilities, P. O. Box 11007, Tacoma, Washington 98411.

For questions regarding General Provisions, Special or Technical Provisions, direct attention to Dawn DeJarlais, Senior Buyer, [ddejarlais@cityoftacoma.org](mailto:ddejarlais@cityoftacoma.org).

For letters and calls regarding the EIC Program, direct attention to the EIC Program Coordinator at 253-591-5224 for calls, and to EIC/Community & Economic Development, Tacoma Municipal Building, 747 Market Street, Tacoma, Washington 98402, for letters.

For letters and calls regarding the LEAP Program, direct attention to the LEAP Coordinator at 253-594-7933 for calls, and to LEAP/ Community & Economic Development, Tacoma Municipal Building, 747 Market Street, Tacoma, Washington 98402, for letters.

All letters shall indicate the title and specification number (prior to award) or title and contract number (following award).

**CITY OF TACOMA  
FINANCE/PURCHASING DIVISION  
SPECIAL NOTICE TO BIDDERS**

Public works and improvement projects for the City of Tacoma are subject to Washington state law and Tacoma Municipal Code, including, but not limited to the following:

**I. STATE OF WASHINGTON**

**A. RESPONSIBILITY CRITERIA – STATE OF WASHINGTON**

In order to be considered a responsible bidder the bidder must meet the following mandatory state responsibility criteria contained in RCW 39.04.350:

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect **at the time of bid submittal**;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable:
  - a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
  - b. Have a Washington Employment Security Department number, as required in Title 50 RCW;
  - c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW and;
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).
5. Have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW and must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection.

**B. RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS:**

Effective March 30, 2012, RCW 39.04.380 imposes a reciprocal preference for resident contractors. Any bid received from a non-resident contractor from a state that provides an in-state percentage bidding preference is subject application of a comparable percentage disadvantage.

A non-resident contractor from a state that provides an in-state percentage bidding preference means a contractor that:

1. Is from a state that provides a percentage bid preference to its resident contractors bidding on public works projects, and
2. Does not have a physical office located in Washington at the time of bidding on the City of Tacoma public works project.

The state of residence for a non-resident contractor is the state in which the contractor was incorporated, or if not a corporation, the state in which the contractor's business entity was formed.

The City of Tacoma will evaluate all non-resident contractors for an out of state bidder preference. If the state of the non-resident contractor provides an in state contractor preference, a comparable percentage disadvantage will be applied to the non-resident contractor's bid prior to contract award. The responsive and lowest and best responsible bidder after application of any non-resident disadvantage will be awarded the contract.

The reciprocal preference evaluation does not apply to public works procured pursuant to RCW 39.04.155, RCW 39.04.280, federally funded competitive solicitations where such agencies prohibit the application of bid preferences, or any other procurement exempt from competitive bidding.

Bidders must provide the City of Tacoma with their state of incorporation or the state in which the business entity was formed and include whether the bidder has a physical office located in Washington.

The bidder shall submit documentation demonstrating compliance with above criteria on the enclosed State Responsibility and Reciprocal Bidder Information form.

### **C. SUBCONTRACTOR RESPONSIBILITY**

1. The Contractor shall include the language of this subcontractor responsibility section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. The requirements of this section apply to all subcontractors regardless of tier.
2. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:
  - a. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
  - b. Have a current Washington Unified Business Identifier (UBI) number;
  - c. If applicable, have:
    - a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
    - b. A Washington Employment Security Department number, as required in Title 50 RCW;
    - c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
    - d. An electrical contractor license, if required by Chapter 19.28 RCW;
    - e. An elevator contractor license, if required by Chapter 70.87 RCW and;
3. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).

## **II. CITY OF TACOMA**

### **A. SUPPLEMENTAL RESPONSIBILITY CRITERIA – CITY OF TACOMA:**

In order to be considered a responsible bidder, the prospective bidder shall have all of the following qualifications set forth in Tacoma Municipal Code 1.06.262:

1. Adequate financial resources or the ability to secure such resources;
2. The necessary experience, stability, organization and technical qualifications to perform the proposed contract;
3. The ability to comply with the required performance schedule, taking into consideration all existing business commitments;
4. A satisfactory record of performance, integrity, judgment and skills; and
5. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.
  - a. Bidder Responsibility. Bidders shall not be in violation of 39.04.350 RCW Bidder Responsibility Criteria - Supplemental Criteria.

In addition to the mandatory bidder responsibility criteria listed immediately above, the City may, in addition to price, consider any or all of the following criteria contained in Tacoma Municipal Code Chapter 1.06.262 in determining bidder responsibility:

1. The ability, capacity, experience, stability, technical qualifications and skill of the respondent to perform the contract;
2. Whether the respondent can perform the contract within the time specified, without delay or interference;
3. Integrity, reputation, character, judgment, experience, and efficiency of the respondents, including past compliance with the City's Ethics Code;
4. Quality of performance of previous contracts;
5. Previous and existing compliance with laws and ordinances relating to contracts or services;
6. Sufficiency of the respondent's financial resources;
7. Quality, availability, and adaptability of the supplies, purchased services or public works to the particular use required;
8. Ability of the respondent to provide future maintenance and service on a timely basis;
9. Payment terms and prompt pay discounts;
10. The number and scope of conditions attached to the submittal;
11. Compliance with all applicable City requirements, including but not limited to the City's Ethics Code and its Small Business Enterprise and Local Employment and Apprenticeship programs;
12. Other qualification criteria set forth in the specification or advertisement that the appropriate department or division head determines to be in the best interests of the City.

The City may require bidders to furnish information, sworn or certified to be true, to demonstrate compliance with the City responsibility criteria set forth above. If the city manager or director of utilities is not satisfied with the sufficiency of the information provided, or if the prospective respondent does not substantially meet all responsibility requirements, any submittal from such respondent must be disregarded.

## **B. ADDITIONAL SUPPLEMENTAL CRITERIA – NOT APPLICABLE**

## **C. MODIFICATIONS TO SUPPLEMENTAL CRITERIA**

Potential bidders may request modifications to the City's **supplemental criteria** by submitting a written request to the Purchasing Division via email to [sendbid@cityoftacoma.org](mailto:sendbid@cityoftacoma.org) no later than 5:00 p.m. Pacific Time, three days prior to the submittal deadline. Please include the Specification No. and Title when submitting such requests. Requests must include justification for why certain criteria should be modified. Requests received after this date and time will not be considered.

The City will respond to a timely submitted request prior to the bid opening date. Changes to the supplemental criteria, if warranted, will be issued by addendum to the solicitation documents and posted to the City's website for the attention of all prospective bidders.

## **D. DETERMINATION OF BIDDER RESPONSIBILITY**

If the City determines the bidder does not meet the criteria above and is therefore not a responsible bidder, the City shall notify the bidder in writing with the reasons for its determination. If the bidder disagrees, the bidder may appeal the determination in a manner consistent with the City's Protest Policy. Appeals are coordinated by the Purchasing Division heard by the Procurement and Payables Division manager for contracts less than or equal to \$500,000 and by Contracts and Awards Board for contracts greater than \$500,000.

## SIGNATURE PAGE

### **CITY OF TACOMA DEPARTMENT OF PUBLIC UTILITIES – TACOMA POWER**

All submittals must be in ink or typewritten, executed by a duly authorized officer or representative of the bidding/proposing entity, and received and time stamped as directed in the **Request for Bids page near the beginning of the specification**. If the bidder/proposer is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

#### **REQUEST FOR BIDS SPECIFICATION NO. PG21-0533N Tacoma Rail Radio Monopole Foundation and Installation**

The undersigned bidder/proposer hereby agrees to execute the proposed contract and furnish all materials, labor, tools, equipment and all other facilities and services in accordance with these specifications.

The bidder/proposer agrees, by submitting a bid/proposal under these specifications, that in the event any litigation should arise concerning the submission of bids/proposals or the award of contract under this specification, Request for Bids, Request for Proposals or Request for Qualifications, the venue of such action or litigation shall be in the Superior Court of the State of Washington, in and for the County of Pierce.

#### **Non-Collusion Declaration**

*The undersigned bidder/proposer hereby certifies under penalty of perjury that this bid/proposal is genuine and not a sham or collusive bid/proposal, or made in the interests or on behalf of any person or entity not herein named; and that said bidder/proposer has not directly or indirectly induced or solicited any contractor or supplier on the above work to put in a sham bid/proposal or any person or entity to refrain from submitting a bid/proposal; and that said bidder/proposer has not, in any manner, sought by collusion to secure to itself an advantage over any other contractor(s) or person(s).*

\_\_\_\_\_  
Bidder/Proposer's Registered Name

\_\_\_\_\_  
Signature of Person Authorized to Enter      Date  
into Contracts for Bidder/Proposer

\_\_\_\_\_  
Address

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
City, State, Zip

\_\_\_\_\_  
(Area Code) Telephone Number / Fax Number

\_\_\_\_\_  
E-Mail Address

\_\_\_\_\_  
State Business License Number  
in WA, also known as UBI (Unified Business Identifier) Number

\_\_\_\_\_  
E.I.No. / Federal Social Security Number Used on Quarterly  
Federal Tax Return, U.S. Treasury Dept. Form 941

\_\_\_\_\_  
State Contractor's License Number  
(See Ch. 18.27, R.C.W.)

\_\_\_\_\_  
E-Mail Address for Communications

Addendum acknowledgement #1\_\_\_\_\_ #2\_\_\_\_\_ #3\_\_\_\_\_ #4\_\_\_\_\_ #5\_\_\_\_\_

***THIS PAGE MUST BE SIGNED AND RETURNED WITH SUBMITTAL.***



City of Tacoma

## Certification of Compliance with Wage Payment Statutes

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date (August 16, 2021), that the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the state of Washington that the foregoing is true and correct.

\_\_\_\_\_  
Bidder

\_\_\_\_\_  
Signature of Authorized Official\*

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
City

\_\_\_\_\_  
State

*Check One:*

Individual ☐

Partnership ☐

Joint Venture ☐

Corporation ☐

State of Incorporation, or if not a corporation, the state where business entity was formed:

\_\_\_\_\_

If a co-partnership, give firm name under which business is transacted:

\_\_\_\_\_

*\* If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

Specification No. \_\_\_\_\_

Name of Bidder: \_\_\_\_\_

## State Responsibility and Reciprocal Bid Preference Information

Certificate of registration as a contractor  
(Must be in effect at the time of bid submittal):

Number: \_\_\_\_\_

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Current Washington Unified Business Identifier  
(UBI) Number:

Number: \_\_\_\_\_

Do you have industrial insurance (workers' compensation)  
Coverage nor your employees working in Washington?

☐ Yes      ☐ No  
☐ Not Applicable

Washington Employment Security Department Number

Number: \_\_\_\_\_

☐ Not Applicable

Washington Department of Revenue state excise tax  
Registration number:

Number: \_\_\_\_\_

☐ Not Applicable

Have you been disqualified from bidding any public  
works contracts under RCW 39.06.010 or 39.12.065(3)?

☐ Yes      ☐ No  
If yes, provide an explanation of your  
disqualification on a separate page.

Do you have a physical office located in the state of  
Washington?

☐ Yes      ☐ No

If incorporated, in what state were you incorporated?

State: \_\_\_\_\_ ☐ Not Incorporated

If not incorporated, in what state was your business  
entity formed?

State: \_\_\_\_\_

Have you completed the training required by RCW  
39.04.350, or are you on the list of exempt businesses  
maintained by the Department of Labor and Industries?

☐ Yes      ☐ No



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 Name of Bidder
**PROPOSAL**

	<b><u>QUANTITY</u></b>	<b><u>BID UNIT</u></b>	<b><u>UNIT COST</u></b>	<b><u>TOTAL COST</u></b>
<b><u>ITEM 1</u></b>				
Mobilization/Demobilization	1	LS	\$_____	\$_____
<b><u>ITEM 2</u></b>				
Reinforced Concrete Drilled Pier	1	LS	\$_____	\$_____
<b><u>ITEM 3</u></b>				
Monopole Installation	1	LS	\$_____	\$_____
<b><u>ITEM 4</u></b>				
Grounding Installation	1	LS	\$_____	\$_____
<b><u>ITEM 5</u></b>				
*Force Account				\$_____
*Bidders shall include the \$ <u>10,000</u> figure as part of their overall bid.				
<b>TOTAL ITEMS 1 - 5</b>				\$_____
**Sales Tax @ <u>10.3%</u>				\$_____
(**Note Paragraph 1.13 of General Provisions)				
<b>TOTAL AMOUNT</b>				\$_____

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Name of Bidder

**PROPOSAL**

**NOTE TO BIDDERS**

A pre-bid meeting will be held at the project site on Tuesday, August 24, 2021 at 10:00 a.m. A site visit will follow the pre-bid meeting. Please confirm your attendance with Ms. Dawn DeJarlais at [ddejarlais@cityoftacoma.org](mailto:ddejarlais@cityoftacoma.org).

If you are unable to attend this meeting, please call the EIC (Equity in Contracting) Office at 253-591-5224 and/or the LEAP (Local Employment and Apprenticeship Program), at 253-591-5826, for instructions in filling out the EIC/LEAP forms (if applicable) or for questions concerning these requirements.

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 Name of Bidder

<b>CONTRACTOR'S RECORD OF PRIOR CONTRACTS</b>
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NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

Beginning Date	Completion Date	Contract With	Contact Person Telephone #	Amount of Contract

REMARKS: \_\_\_\_\_

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Following is a list to be filled in by the bidder, showing equipment definitely available for use on the proposed work as required. (Give quantity, description, size or capacity, condition and present location of each item of equipment.)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

# EIC REQUIREMENT FORM

## EQUITY IN CONTRACTING REQUIREMENTS & PROCEDURES:

All bidders must complete and submit with their bid the following solicitation form contained in the bid submittal package:

City of Tacoma – EIC Utilization Form

### **IMPORTANT NOTE:**

It is the bidder's responsibility to insure that the subcontractor(s) listed on the EIC Utilization Form are currently certified by the State of Washington's Office of Minority and Women Business Enterprises (OMWBE) at the time of bid opening. This may be verified by contacting the EIC Office at 253-591-5075 between 8 AM and 5 PM, Monday through Friday or the [OMWBE](http://www.omwbe.com) Office at (866) 208-1064. Please refer to the City of Tacoma EIC code.

Equity in Contracting Requirements		
Minority Business Enterprise Requirement	Women Business Enterprise Requirement	Small Business Enterprise Requirement
9%	9%	0%

A list of EIC-eligible companies is available on the following web site addresses:

[www.omwbe.diversitycompliance.com](http://www.omwbe.diversitycompliance.com)\*

**MATERIAL MISSTATEMENTS CONCERNING COMPLETED ACTIONS BY THE BIDDER IN ANY SWORN STATEMENT OR FAILURE TO MEET COMMITMENTS AS INDICATED ON THE EIC UTILIZATION FORM MAY RENDER THE BIDDER IN DEFAULT OF CITY ORDINANCE 1.07**

CCD/SBE: G21-0533F  
Date of Record: 8/3/2021

\*For the OMWBE list, be sure to look for businesses in Pierce, King, Lewis, Mason, Grays Harbor, Thurston, or any counties adjacent to the county in which the work is performed per 1.07.050(2)(b-c). Contact the EIC Office if you have any questions.

# CITY OF TACOMA

## Special Instructions

### Equity in Contracting Instructions

As part of the City of Tacoma's ongoing work to address past disparities and to increase the City's contracting with and utilization of historically underutilized businesses, the Equity in Contracting (EIC) Program places requirements on City contracts for utilization of businesses certified by the Washington State Office of Minority and Women's Business Enterprise and approved by the Equity in Contracting Program ("Certified Businesses"). The EIC Program also provides guidance and technical assistance to Certified Businesses who are interested in providing supplies, services and public works to the City of Tacoma. The EIC Program requirements are contained in [Tacoma Municipal Code Chapter 1.07](#).

Bidders on City of Tacoma contracts are required to meet the stated EIC requirements. Bids will be evaluated on an individual basis to determine EIC compliance. **A bidder who fails to meet the stated EIC requirements will be considered non-responsible.** Bidders are also subject to the City's Equal Employment Opportunity policies prohibiting discrimination.

The stated EIC requirements may be met by the bidder or by identified subcontractors. All SBE goals may be met by using DBEs or SBEs from the OMWBE list. Contact the EIC Office at (253) 591-5075 if there are questions about this requirement.

It is the bidder's responsibility to ensure that their firm or identified subcontractors are certified by the State of Washington's Office of Minority and Women Business Enterprises and approved by the City of Tacoma EIC Program **at the time of bid submittal**. Business certification may be verified by contacting the EIC Office at 253-591-5075 between 8 AM and 4:30 PM, Monday through Friday.

A list of OMWBE certified firms for Pierce, King, Lewis, Mason and Grays Harbor counties, is available on the following web site address: [www.omwbe.diversitycompliance.com](http://www.omwbe.diversitycompliance.com).

**The Equity in Contracting (EIC) forms included in these bid documents must be fully and accurately completed (including attachments) and included with bid submittals. Failure to include the required forms will result in the submittal being rejected as nonresponsive.**



City of Tacoma  
Community & Economic Development  
Office of Equity in Contracting  
747 Market Street, Rm 900  
Tacoma WA 98402  
253-591-5075

## EQUITY IN CONTRACTING UTILIZATION FORM

This form is to document **only** the contractors, subcontractors, material suppliers or other types of firms that are intended to be used to meet the stated EIC requirements for the contract awarded from this solicitation. This information will be used to determine contract award. Additional forms may be used if needed.

- You must include this form with your bid submittal in order for your bid to be responsive.
- Prime contractors are **required** to solicit bids from firms approved by the City of Tacoma Equity in Contracting Program as Certified Businesses.
- It is the prime contractor's responsibility to check the certification status of the firms intended to be utilized prior to the submittal deadline.

Bidder's Name: \_\_\_\_\_

Address: \_\_\_\_\_ City/State/Zip: \_\_\_\_\_

Spec. No. \_\_\_\_\_ Base Bid \* \$ \_\_\_\_\_ Complete company names and phone numbers are required to verify your usage of qualifying firms.

a. Company Name and Certification Number(s)	b. MBE, WBE, or SBE (Write all that apply)	c. NAICS code(s)	d. Contractor Bid Amount (100%)	e. Material Supplier Bid Amount (20%)	f. Estimated MBE Usage Dollar Amount	g. Estimated WBE Usage Dollar Amount	h. Estimated SBE Usage Dollar Amount
i. MBE Utilization %	j. WBE Utilization %	k. SBE Utilization %					

By signing and submitting this form the bidder certifies that the EIC firms listed will be used on this project including all applicable change orders.

\_\_\_\_\_  
Type or Print Name of Responsible Officer / Title

\_\_\_\_\_  
Signature of Responsible Officer

\_\_\_\_\_  
Date

# INSTRUCTIONS FOR COMPLETING EIC UTILIZATION FORM

**The purpose of these instructions is to assist bidders in properly completing the EIC Utilization Form.**

This form when submitted with your bid provides information to the City of Tacoma to accurately review and evaluate your proposed EIC usage.

1. \* Base Bid is the prime contractor's bid, plus any alternates, additives and deductive selected by the City. Also, please refer to Items #10-12 below.
2. Column "a" – List all EIC companies that you will be awarding a contract to if you are the successful bidder.
3. Column "b" – Identify if this firm is being utilized as an MBE, WBE, or SBE. (Firms may count towards multiple requirements)
4. Column "c" – List the appropriate NAICS code for the scope of work, services, or materials/supplies for each contractor.
5. Column "d" – The bid amount must be indicated for **all** listed **EIC** that you plan on doing business with. This quote is the price that you and the contractor have negotiated prior to bid opening.
6. Column "e" – The bid amount must be indicated for **all** listed **EIC** that you plan on doing business with. This quote is the price that you and the material supplier have negotiated prior to bid opening.
8. Column "f" – Estimated MBE Usage Dollar Amount: For all MBE firms used, multiply the amount in Column "d" by 1.0 plus the amount in Column "e" by 0.20. Insert the total amount in this column.
9. Column "g" – Estimated WBE Usage Dollar Amount: For all WBE firms used, multiply the amount in Column "d" by 1.0 plus the amount in Column "e" by 0.20. Insert the total amount in this column.
10. Column "h" – Estimated SBE Usage Dollar Amount: For all MBE, WBE, or SBE firms used, Multiply the amount in Column "d" by 1.0 plus the amount in Column "e" by 0.20. Insert the total amount in this column.
11. Block "i" – The percent of actual MBE utilization calculated on the Base Bid only. (Divide the sum of Estimated MBE Usage Dollar Amount (Column "f") by your Base Bid (\*) then multiply by 100 to get a percentage: \$ amounts from column "f" divided by Base Bid (\*) x 100 = EIC usage as a percent of the Base Bid.)
12. Block "j" – The percent of actual WBE utilization calculated on the Base Bid only. (Divide the sum of Estimated WBE Usage Dollar Amount (Column "g") by your Base Bid (\*) then multiply by 100 to get a percentage: \$ amounts from column "g" divided by Base Bid (\*) x 100 = EIC usage as a percent of the Base Bid.)



13. Block "k" – The percent of actual SBE utilization calculated on the Base Bid only. (Divide the sum of Estimated SBE Usage Dollar Amount (Column "h") by your Base Bid (\*) then multiply by 100 to get a percentage: \$ amounts from column "h" divided by Base Bid (\*) x 100 = EIC usage as a percent of the Base Bid.)

It is the prime contractor's responsibility to check the status of EIC contractors prior to bid opening. Call the EIC Office at 253- 591-5075 for additional information.

## **Chapter 1.07**

### **Equity in Contracting**

#### **Sections:**

- 1.07.010 Policy and purpose.
- 1.07.020 Definitions.
- 1.07.030 Discrimination prohibited.
- 1.07.040 Program administration.
- 1.07.050 Approval as a Certified Business.
- 1.07.060 Program requirements.
- 1.07.070 Evaluation of submittals.
- 1.07.080 Contract compliance.
- 1.07.090 Program monitoring.
- 1.07.100 Enforcement.
- 1.07.110 Remedies.
- 1.07.120 Unlawful acts.
- 1.07.130 Severability.
- 1.07.140 Review of program.

#### **1.07.010 Policy and purpose.**

It is the policy of the City of Tacoma that citizens be afforded an opportunity for full participation in our free enterprise system and that historically underutilized business enterprises shall have an equitable opportunity to participate in the performance of City contracts. The City finds that in its contracting for supplies, services and public works, there has been historical underutilization of small and minority-owned businesses located in certain geographically and economically disfavored locations and that this underutilization has had a deleterious impact on the economic well-being of the City. The purpose of this chapter is to remedy the effects of such underutilization through use of narrowly tailored contracting requirements to increase opportunities for historically underutilized businesses to participate in City contracts. It is the goal of this chapter to facilitate a substantial procurement, education, and mentorship program designed to promote equitable participation by historically underutilized businesses in the provision of supplies, services, and public works to the City. It is not the purpose of this chapter to provide any person or entity with any right, privilege, or claim, not shared by the public, generally, and this chapter shall not be construed to do so. This chapter is adopted in accordance with Chapter 35.22 RCW and RCW 49.60.400.

(Ord. 28625 Ex. A; passed Nov. 5, 2019; Ord. 27867 Ex. A; passed Dec. 15, 2009)

#### **1.07.020 Definitions.**

Terms used in this chapter shall have the following meanings unless defined elsewhere in the Tacoma Municipal Code (“TMC”), or unless the context in which they are used clearly indicates a different meaning.

##### **1.07.020.B**

“Bid” means an offer submitted by a Respondent to furnish Supplies, Services, and/or Public Works in conformity with the Specifications and any other written terms and conditions included in a City request for such offer.

“Bidder” means an entity or individual who submits a Bid, Proposal or Quote. See also “Respondent.”

##### **1.07.020.C**

“Certified Business” means an entity that has been certified as a Disadvantaged Business Enterprise (“DBE”), Small Business Enterprise (“SBE”), Minority Business Enterprise (“MBE”), Women Business Enterprise (“WBE”), or Minority and Women’s Business Enterprise (“MWBE”) by the Washington State Office of Minority and Women’s Business Enterprise and meets the criteria set forth in Section 1.07.050 (2) of this chapter and has been approved as meeting that criteria by the Community and Economic Development Department Program Manager.

“City” means all Departments, Divisions and agencies of the City of Tacoma.

“Contract” means any type of legally binding agreement regardless of form or title that governs the terms and conditions for procurement of Public Works and Improvements and/or Non-Public Works and Improvements Supplies and Services. Contracts include the terms and conditions found in Specifications, Bidder or Respondent Submittals, and purchase orders issued by the City. A “Contract” as used in this chapter shall include an agreement between the City and a non-profit entity to perform construction-related services for Public Works. A “Contract” does not include: (1) awards made by the City with federal/state grant or City general funds monies to a non-profit entity where the City offers assistance, guidance, or supervision on a project or program, and the recipient of the grant awards uses the grant moneys to provide services to the

community; (2) sales transactions where the City sells its personal or real property; (3) a loan transaction where the City is acting as a debtor or a creditor; (4) lease, franchise; (5) agreements to use City real property (such as Licenses, Permits and Easements) and, (6) banking and other financial or investment services.

“Contractor” means any Person that presents a Submittal to the City, enters into a Contract with the City, and/or performs all or any part of a Contract awarded by the City, for the provision of Public Works, or Non-Public Works and Improvements, Supplies or Services.

1.07.020.G

“Goals” means the annual level of participation by Certified Businesses in City Contracts as established in this chapter, the Program Regulations, or as necessary to comply with applicable federal and state nondiscrimination laws and regulations. Goals for individual Contracts may be adjusted as provided for in this chapter and shall not be construed as a minimum for any particular Contract or for any particular geographical area.

1.07.020.N

“Non-Public Works and Improvements” means all competitively solicited procurement of Supplies and/or Services by the City not solicited as Public Works.

1.07.020.P

“Person” means individuals, companies, corporations, partnerships, associations, cooperatives, any other legally recognized business entity, legal representative, trustee, or receivers.

“Program Manager” means the individual appointed, from time to time, by the City’s Community and Economic Development Director to administer the Program Regulations.

“Program Regulations” means the written regulations and procedures adopted pursuant to this chapter for procurement of Supplies, Services and Public Works.

“Proposal” means a written offer to furnish Supplies or Services in response to a Request for Proposals. This term may be further defined in the Purchasing Policy Manual and/or in competitive solicitations issued by the City.

“Public Works (or “Public Works and Improvements)” means all work, construction, alteration, repair, or improvement other than ordinary maintenance, executed at the cost of the City, or that is by law a lien or charge on any property therein. This term includes all Supplies, materials, tools, and equipment to be furnished in accordance with the Contract for such work, construction, alteration, repair, or improvement.

1.07.020.Q

“Quote” means a competitively solicited written offer to furnish Supplies or Services by a method of procurement that is less formalized than a Bid or a Proposal. This term may be further defined in the Purchasing Policy Manual.

1.07.020.R

“Respondent” means any entity or Person, other than a City employee, that provides a Submittal in response to a request for Bids, Request for Proposals, Request for Qualifications, request for quotes or other request for information, as such terms are defined in Section 1.06.251 TMC. This term includes any such entity or Person whether designated as a supplier, seller, vendor, proposer, Bidder, Contractor, consultant, merchant, or service provider that; (1) assumes a contractual responsibility to the City for provision of Supplies, Services, and/or Public Works; (2) is recognized by its industry as a provider of such Supplies, Services, and/or Public works; (3) has facilities similar to those commonly used by Persons engaged in the same or similar business; and/or (4) distributes, delivers, sells, or services a product or performs a Commercially Useful Function.

1.07.020.S

“Services” means non-Public Works and Improvements services and includes professional services, personal services, and purchased services, as such terms are defined in Section 1.06.251 TMC and/or the City’s Purchasing Policy Manual.

“Submittal” means Bids, Proposals, Quotes, qualifications or other information submitted in response to requests for Bids, Requests for Proposals, Requests for Qualifications, requests for Quotations, or other City requests for information, as such terms are defined in Section 1.06.251 TMC.

“Supplies” means materials, Supplies, and other products that are procured by the City through a competitive process for either Public Works procurement or Non-Public Works and Improvements procurement unless an approved waiver has been granted by the appropriate authority.

1.07.020.T

“Tacoma Public Utilities Service Area” means any ZIP code in which Tacoma Public Utilities maintains infrastructure or provides retail services.

**1.07.020.W**

“Waiver” means a discretionary decision by the City that the one or more requirements of this chapter will not be applied to a Contract or Contracts.

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28274 Ex. A; passed Dec. 16, 2014: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.030 Discrimination prohibited.**

A. No person that is engaged in the construction of public works for the City, engaged in the furnishing of laborers or craftspeople for public works of the City, or is engaged for compensation in the provision of non-public works and improvements supplies and/or services to the City, shall discriminate against any other person on the basis of race, religion, color, national origin or ancestry, sex, gender identity, sexual orientation, age, marital status, familial status, or the presence of any sensory, mental or physical disability in employment. Such discrimination includes the unfair treatment or denial of normal privileges to a person as manifested in employment upgrades, demotions, transfers, layoffs, termination, rates of pay, recruitment of employees, or advertisement for employment.

B. The violation of the terms of RCW 49.60 or Chapter 1.29 TMC by any person that is engaged in the construction of public works for the City, is engaged in the furnishing of laborers or craftspeople for public works of the City, or is engaged for compensation in the provision of non-public works and improvements supplies and/or services shall result in the rebuttable presumption that the terms of this chapter have also been violated. Such violation may result in termination of any City contract the violator may have with the City and/or the violator’s ineligibility for further City Contracts.

(Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.040 Program administration.**

A. The Community and Economic Development Director, or their designated Program Manager, shall be responsible for administering this chapter and obtaining compliance with respect to contracts entered into by the City and/or its contractors. It shall be the duty of the Director to pursue the objectives of this chapter by conference, conciliation, persuasion, investigation, or enforcement action, as may be necessary under the circumstances. The Director is authorized to implement an administrative and compliance program to meet these responsibilities and objectives.

B. The Director is hereby authorized to adopt and to amend administrative regulations known as the Program Regulations, to properly implement and administer the provisions of this chapter. The Program Regulations shall be in conformance with City of Tacoma policies and state and federal laws and be designed to encourage achievement of the Goals set forth herein.

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 28110 Ex. B; passed Dec. 4, 2012: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.050 Approval as a Certified Business.**

A. The Program Manager shall approve an entity as a Certified Business if all of the following criteria are satisfied:

1. The entity is certified as a DBE, SBE, MBE, WBE, or MWBE through the state of Washington’s Office of Minority & Women Business Enterprises; and
2. The entity can demonstrate that it also meets at least one of the following additional requirements:
  - a. The personal residence of the owner is located within the City of Tacoma or Tacoma Public Utilities Service Area, or
  - b. The entity’s business offices are located in any county of the Tacoma Public Utilities Service Area or any county adjacent to Pierce County, or
  - c. When the work is performed outside of Pierce County, the entity’s business offices may be located in an adjacent county in which the work is performed, or
  - d. Such additional information as the Program Manager or designee may require.
3. When another governmental entity has an equivalent business classification process, the City may enter into an interlocal cooperative agreement for mutual recognition of certifications.

B. Appeals.

The applicant may appeal any approval determination by the Program Manager under this chapter to the Director. The appeal must be made in writing and must set forth the specific reasons for the appeal. The Director shall make a decision on the appeal request within a reasonable time, which decision shall be final unless further appeal is made to the Hearing Examiner. In that event, the Hearing Examiner Rules of Procedure for Hearings, Chapter 1.23 TMC, shall be applicable to that appeal proceeding.

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28274 Ex. A; passed Dec. 16, 2014: Ord. 28147 Ex. A; passed May 7, 2013: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 28110 Ex. B; passed Dec. 4, 2012: Ord. 27867 Ex. A; passed Dec. 15, 2009)

#### **1.07.060 Program requirements.**

A. The program shall meet the following requirements:

1. Establishment of Annual Goals.

The Program Regulations adopted pursuant to this chapter shall state reasonably achievable cumulative annual goals for utilization of Certified Businesses in the provision of supplies, services, and public works procured by the City. Cumulative annual goals for the participation of Certified Businesses in City contracts shall be based on the number of qualified Certified Businesses operating within the Tacoma Public Utilities Service Area. The dollar value of all contracts awarded by the City to Certified Businesses in the procurement of supplies, services, and public works shall be counted toward the accomplishment of the applicable goal.

2. Application of Annual Goals to Contracts.

The Program Manager shall consult with City departments/divisions to establish department/division specific goals for competitively solicited contracts in accordance with this chapter and the Program Regulations.

B. Exceptions:

City departments/divisions or the Program Manager may request an exception to one or more of the requirements of this chapter as they apply to a particular Contract or Contracts. Exceptions may be granted in any one or more of the following circumstances:

1. Emergency:

The supplies, services and/or public works must be provided with such immediacy that neither the City nor the contractor can comply with the requirements herein. Such emergency will be deemed documented whenever a waiver of competitive solicitation for emergency situations is authorized under Tacoma Municipal Code Chapter 1.06.257 or as may be hereinafter amended.

2. Not Practicable:

The Contract involves special facilities or market conditions or specially tailored or performance criteria-based products, such that compliance with the requirements of this chapter would cause financial loss to the City or an interruption of vital services to the public. Such circumstances must be documented by the department/division awarding the Contract and approved by the senior financial manager or, for Contracts where the estimated cost is over \$500,000 (excluding sales tax), approved by the Board of Contracts and Awards ("C&A Board").

3. Sole source:

The supplies, services, and/or public works are available from only one feasible source, and subcontracting possibilities do not reasonably exist as documented by the department/division awarding the Contract and approved by the senior financial manager or, for Contracts where the estimated cost is over \$500,000 (excluding sales tax), approved by the C&A Board.

4. Government purchasing.

The Contract or Contracts are the result of a federal, state or inter-local government purchasing agreement and the use of such agreement in lieu of a bid solicitation conducted by the City is approved by the senior financial manager.

5. Lack of certified contractors:

An insufficient number of qualified contractors exist to create any utilization opportunities as documented by the Program Manager.

C. Waiver:

If, after receipt of Submittals but prior to Contract award, it is determined that due to unforeseen circumstances, waiver of goals is in the best interests of the City, the Director or Superintendent of the department/division awarding the Contract may

request in writing that the City Manager or designee, on behalf of General Government, or the Director of Utilities or designee, on behalf of the Department of Public Utilities, approve such waiver..

Waivers may be granted only after determination by the City Manager or Director of Utilities that compliance with the requirements of this chapter would impose unwarranted economic burden on, or risk to, the City of Tacoma as compared with the degree to which the purposes and policies of this chapter would be furthered by requiring compliance.

(Ord. 28766 Ex. A; passed Jun. 8, 2021; Ord. 28625 Ex. A; passed Nov. 5, 2019; Ord. 28141 Ex. A; passed Mar. 26, 2013; Ord. 27867 Ex. A; passed Dec. 15, 2009)

#### **1.07.070 Evaluation of submittals.**

A. All submittals for a supplies, services, or public works and improvements contracts shall be evaluated for attainment of the Certified Business requirements established for that contract in accordance with this chapter and the Program Regulations.

B. The determination of Certified Business usage and the calculation of Certified Business requirements per this section shall include the following considerations:

1. General.

The dollar value of the contract awarded by the City to a Certified Business in the procurement of supplies, services, or public works shall be counted toward achievement of the respective goal.

2. Supplies.

A public works and improvements contractor may receive credit toward attainment of the Certified Business requirement(s) for expenditures for supplies obtained from a Certified Business; provided such Certified Business assumes the actual and contractual responsibility for delivering the supplies with its resources. The contractor may also receive credit toward attainment of the Certified Business goal for the amount of the commission paid to a Certified Business resulting from a supplies contract with the City; provided the Certified Business performs a commercially useful function in the process.

3. Services and Public Works subcontracts.

Any bid by a Certified Business or a bidder that utilizes a Certified Business shall receive credit toward requirement attainment based on the percentage of Certified Business usage demonstrated in the bid. A contractor that utilizes a Certified Business as a subcontractor to provide services or public works shall receive a credit toward the contractor's attainment of the respective requirement based on the value of the subcontract with that firm.

4. Brokers, Fronts, or Similar Pass-Through Arrangements.

Certified Business acting as brokers, fronts, or similar pass-through arrangements (as such terms are defined in the Program Regulations) shall not count toward the requirement attainment unless the activity reflects normal industry practices and the broker performs a commercially useful function.

C. Evaluation of competitively solicited submittals for public works and improvements and for services when a requirement has been established for the contract to be awarded shall be as follows:

1. When contract award is based on price.

The lowest priced bid submitted by a responsive and responsible bidder will be reviewed to determine if it meets the requirement. Certified Businesses may self-count utilization on such bids if they will perform the work for the scope the requirement is based upon.

a. If the low bidder meets the requirements, the bid shall be presumed the lowest and best responsible bid for contract award.

b. Any bidder that does not meet the stated Certified Business requirements shall be considered a non-responsible bidder unless a waiver of one or more of the requirements of this chapter is granted, in the City's sole discretion, pursuant to the criteria and processes in Tacoma Municipal Code 1.07.060.C.

2. When contract award is based on qualifications or other performance criteria in addition to price, solicitations shall utilize a scoring system that promotes participation by certified contractors. The Program Regulations may establish further requirements and procedures for final selection and contract award, including:

a. Evaluation of solicitations for Architectural and Engineering (A&E) services;

b. Evaluation and selection of submittals in response to requests for proposals; and

c. Selection of contractors from pre-qualified roster(s).

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.080 Contract compliance.**

A. The contractor awarded a contract based on Certified Business participation shall, during the term of the contract, comply with the requirements established in said contract. To ensure compliance with this requirement following contract award, the following provisions apply:

1. Any substitutions for or failure to utilize Certified Business projected to be used must be approved in advance by the Program Manager. Substitution of one Certified Business with another shall be allowed where there has been a refusal to execute necessary agreements by the original Certified Business, a default on agreements previously made or other reasonable excuse; provided that the substitution does not increase the dollar amount of the bid.
2. Where it is shown that no other Certified Business is available as a substitute and that failure to secure participation by the Certified Business identified in the solicitation is not the fault of the respondent, substitution with a non-Certified Business shall be allowed; provided, that, the substitution does not increase the dollar amount of the bid.
3. If the Program Manager determines that the contractor has not reasonably and actively pursued the use of replacement Certified Business, such contractor shall be deemed to be in non-compliance.

**B. Record Keeping.**

All contracts shall require contractors to maintain relevant records and information necessary to document compliance with this chapter and the contractor's utilization of Certified Businesses, and shall include the right of the City to inspect such records.

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.090 Program monitoring.**

A. An Advisory Committee shall monitor compliance with all provisions of this chapter and the related Regulations. The Program Manager shall establish procedures to collect data and monitor the effect of the provisions of this chapter to assure, insofar as is practical, that the remedies set forth herein do not disproportionately favor one or more racial, gender, ethnic, or other protected groups, and that the remedies do not remain in effect beyond the point that they are required to eliminate the effects of under utilization in City contracting, unless such provisions are supported by a Disparity Study. The Program Manager shall have the authority to obtain from City departments/divisions, respondents, and contractors such relevant records, documents, and other information as is reasonably necessary to determine compliance.

B. The Program Manager shall submit an annual report to the Community and Economic Development Director, Director of Utilities, and the City Manager detailing performance of the program. The report shall document Certified Business utilization levels, waivers, proposed modifications to the program, and such other matters as may be specified in the Program Regulations.

(Ord. 28766 Ex. A; passed Jun. 8, 2021: Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 28110 Ex. B; passed Dec. 4, 2012: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.100 Enforcement.**

The Director, or designee, may investigate the employment practices of contractors to determine whether or not the requirements of this chapter have been violated. Such investigation shall be conducted in accordance with the procedures established in the Program Regulations.

(Ord. 28625 Ex. A; passed Nov. 5, 2019: Ord. 28141 Ex. A; passed Mar. 26, 2013: Ord. 28110 Ex. B; passed Dec. 4, 2012: Ord. 27867 Ex. A; passed Dec. 15, 2009)

**1.07.110 Remedies.**

A. Upon receipt of a determination of contractor violation by the Program Manager, the City Manager or Director of Utilities, as appropriate, may take the following actions, singly or together, as appropriate:

1. Forfeit the contractor's bid bond and/or performance bond;
2. Publish notice of the contractor's noncompliance;
3. Cancel, terminate, or suspend the contractor's contract, or portion thereof;



# CITY OF TACOMA

## INSURANCE REQUIREMENTS FOR CONTRACTS

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The Contractor (Contractor) shall maintain at least the minimum insurance set forth below. By requiring such minimum insurance, the City of Tacoma shall not be deemed or construed to have assessed the risk that may be applicable to Contractor under this Contract. Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

### 1. GENERAL REQUIREMENTS

The following General Requirements apply to Contractor and to Subcontractor(s) of every tier performing services and/or activities pursuant to the terms of this Contract. Contractor acknowledges and agrees to the following insurance requirements applicable to Contractor and Contractor's Subcontractor(s):

- 1.1. City of Tacoma reserves the right to approve or reject the insurance provided based upon the insurer, terms and coverage, the Certificate of Insurance, and/or endorsements.
- 1.2. Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by City of Tacoma.
- 1.3. Contractor shall keep this insurance in force during the entire term of the Contract and for Thirty (30) calendar days after completion of all work required by the Contract, unless otherwise provided herein.
- 1.4. Insurance policies required under this Contract that name "City of Tacoma" as Additional Insured shall:
  - 1.4.1. Be considered primary and non-contributory for all claims.
  - 1.4.2. Contain a "Separation of Insured provision and a "Waiver of Subrogation" clause in favor of City of Tacoma.
- 1.5. Section 1.4 above does not apply to contracts for purchasing supplies only.
- 1.6. Verification of coverage shall include:
  - 1.6.1. An ACORD certificate or equivalent.
  - 1.6.2. Copies of all endorsements naming the City of Tacoma as additional insured and showing the policy number.
  - 1.6.3. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.
- 1.7. Liability insurance policies, with the exception of Professional Liability and Workers' Compensation, shall name the City of Tacoma and its officers, elected officials, employees, agents, and authorized volunteers as additional insured.
  - 1.7.1. No specific person or department should be identified as the additional insured.
  - 1.7.2. All references on certificates of insurance and endorsements shall be listed as "City of Tacoma".
  - 1.7.3. The City of Tacoma shall be additional insured for both ongoing and completed operations using Insurance Services Office (ISO) form CG 20 10 04 13 and CG 20





# CITY OF TACOMA

## INSURANCE REQUIREMENTS FOR CONTRACTS

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37 04 13 or the equivalent for the full available limits of liability maintained by the Contractor irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract and irrespective of whether the Certificate of Insurance describes limits lower than those maintained by the Contractor.

- 1.8. Contractor shall provide a Certificate of Insurance for each policy of insurance meeting the requirements set forth herein when Contractor provides the signed Contract for the work to City of Tacoma. Contractor shall provide copies of any applicable Additional Insured, Waiver of Subrogation, and Primary and Non-contributory endorsements. Contract or Permit number and the City Department must be shown on the Certificate of Insurance.
- 1.9. Insurance limits shown below may be written with an excess policy that follows the form of an underlying primary liability policy or an excess policy providing the required limit.
- 1.10. Liability insurance policies shall be written on an "occurrence" form, except for Professional Liability/Errors and Omissions, Pollution Liability, and Cyber/Privacy and Security
- 1.11. If coverage is approved and purchased on a "Claims-Made" basis, Contractor warrants continuation of coverage, either through policy renewals or by the purchase of an extended reporting period endorsement as set forth below.
- 1.12. The insurance must be written by companies licensed or authorized in the State of Washington pursuant to RCW 48 with an (A-) VII or higher in the A.M. Best's Key Rating Guide [www.ambest.com](http://www.ambest.com).
- 1.13. Contractor shall provide City of Tacoma notice of any cancellation or non-renewal of this required insurance within Thirty (30) calendar days.
- 1.14. Contractor shall not allow any insurance to be cancelled or lapse during any term of this Contract, otherwise it shall constitute a material breach of the Contract, upon which City of Tacoma may, after giving Five (5) business day notice to Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith; with any sums so expended to be repaid to City of Tacoma by Contractor upon demand, or at the sole discretion of City of Tacoma, offset against funds due Contractor from City of Tacoma.
- 1.15. Contractor shall be responsible for the payment of all premiums, deductibles and self-insured retentions, and shall indemnify and hold the City of Tacoma harmless to the extent such a deductible or self-insured retained limit may apply to the City of Tacoma as an additional insured. Any deductible or self-insured retained limits in excess of Twenty Five Thousand Dollars (\$25,000) must be disclosed and approved by City of Tacoma Risk Manager and shown on the Certificate of Insurance.
- 1.16. City of Tacoma reserves the right to review insurance requirements during any term of the Contract and to require that Contractor make reasonable adjustments when the scope of services has changed.



# CITY OF TACOMA INSURANCE REQUIREMENTS FOR CONTRACTS

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- 1.17. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made by City of Tacoma to Contractor.
- 1.18. Insurance coverages specified in this Contract are not intended and will not be interpreted to limit the responsibility or liability of Contractor or Subcontractor(s).
- 1.19. Failure by City of Tacoma to identify a deficiency in the insurance documentation provided by Contractor or failure of City of Tacoma to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- 1.20. If Contractor is a State of Washington or local government and is self-insured for any of the above insurance requirements, a certification of self-insurance shall be attached hereto and be incorporated by reference and shall constitute compliance with this Section.

## **2. CONTRACTOR**

As used herein, "Contractor" shall be the Supplier(s) entering a Contract with City of Tacoma, whether designated as a Supplier, Contractor, Vendor, Proposer, Bidder, Respondent, Seller, Merchant, Service Provider, or otherwise.

## **3. SUBCONTRACTORS**

It is Contractor's responsibility to ensure that each subcontractor obtain and maintain adequate liability insurance coverage. Contractor shall provide evidence of such insurance upon City of Tacoma's request.

## **4. REQUIRED INSURANCE AND LIMITS**

The insurance policies shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve Contractor from liability in excess of such limits.

### **4.1 Commercial General Liability Insurance**

Contractor shall maintain Commercial General Liability Insurance policy with limits not less than One Million Dollars (\$1,000,000) each occurrence and Two Million Dollars (\$2,000,000) annual aggregate. The Commercial General Liability Insurance policy shall be written on an Insurance Services Office form CG 00 01 04 13 or its equivalent. Products and Completed Operations shall be maintained for a period of three years following Substantial Completion of the Work related to performing construction services.

This policy shall include product liability especially when a Contract solely is for purchasing supplies. The Commercial General Liability policy shall be endorsed to include:

- 4.1.1 A per project aggregate policy limit, using ISO form CG 25 03 05 09 or an equivalent endorsement.
- 4.1.2 Contractual Liability-Railroad using ISO form CG 24 17 10 01 or equivalent if Contractor is performing work within Fifty (50) feet of a City of Tacoma railroad right of way.

### **4.2 Commercial (Business) Automobile Liability Insurance**

Contractor shall maintain Commercial Automobile Liability policy with limits not less than One Million Dollars (\$1,000,000) each accident for bodily injury and property damage and bodily injury



# CITY OF TACOMA

## INSURANCE REQUIREMENTS FOR CONTRACTS

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and property damage coverage for owned (if any), non-owned, hired, or leased vehicles. Commercial Automobile Liability Insurance shall be written using ISO form CA 00 01 or equivalent. Contractor must also maintain an MCS 90 endorsement or equivalent and a CA 99 48 endorsement or equivalent if "Pollutants" are to be transported.

### 4.3 Workers' Compensation

4.3.1 Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington, as well as any other similar coverage required for this work by applicable federal laws of other states. The Contractor must comply with their domicile State Industrial Insurance laws if it is outside the State of Washington.

### 4.4 Employers' Liability Insurance

Contractor shall maintain Employers' Liability coverage with limits not less than One Million Dollars (\$1,000,000) each employee, One Million Dollars (\$1,000,000) each accident, and One Million Dollars (\$1,000,000) policy limit.

### 4.5 Installation Floater Insurance

Contractor shall maintain during the term of the Contract, at its own expense, Installation Floater Insurance covering Contractor's labor, materials, and equipment to be used for completion of the work performed under this Contract against all risks of direct physical loss, excluding earthquake and flood, for an amount equal to the full amount of the Contract improvements.

### 4.6 Builder's Risk Insurance

Contractor shall maintain during the term of the Contract and until final acceptance of the work by the City of Tacoma, a policy of Builder's Risk Insurance providing coverage for all-risk of physical injury to all structures to be constructed according to the Contract. City of Tacoma shall be included as a named insured (not named as additional insured) on the policy. Builder's Risk Insurance policy shall:

- 4.6.1 Have a deductible of no more than Five Thousand Dollars (\$5,000) for each occurrence, the payment of which will be the responsibility of Contractor. Any increased deductibles accepted by City of Tacoma will remain the responsibility of Contractor.
- 4.6.2 Be on an ISO Special Form Causes of Loss or equivalent and shall insure against the perils flood, earthquake, theft, vandalism, malicious mischief, and collapse.
- 4.6.3 Include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site.
- 4.6.4 Be written in the amount of the completed value of the structures, with no coinsurance provisions exposure on the part of Contractor or City of Tacoma.
- 4.6.5 Contain a Waiver of Subrogation provision whereby each insured waives their subrogation rights to the extent the loss is covered by this insurance.
- 4.6.6 Grant permission to occupy, allowing the building or structure to be partially occupied prior to completion, without detrimental effect to the coverage provided.
- 4.6.7 Include coverage for the testing and startup of the building's operating systems.
- 4.6.8 Include coverage for City of Tacoma's loss of use or business interruption arising out of a covered loss which delays completion.
- 4.6.9 Include resultant damage coverage for loss due to faulty workmanship and defective material.



# CITY OF TACOMA

## INSURANCE REQUIREMENTS FOR CONTRACTS

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Contractor and City of Tacoma waive all rights against each other, their respective subcontractors, agents, and representatives for damages caused by fire or other perils to the extent covered by Builder's Risk Insurance or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

### 4.7 Railroad Protective Liability Insurance

Contractor shall maintain Railroad Protective Liability coverage with limits of Two Million Dollars (\$2,000,000) per occurrence and Six Million Dollars (\$6,000,000) in the aggregate during the term of the Contract if Contractor's work will involve working on, above, under or being within Fifty (50) feet of City of Tacoma railroad right of ways.

The policy must be issued on a standard ISO form CG 00 35 (04-13), or equivalent, with City of Tacoma as a named insured (not named as an additional insured) and shall include the following:

4.7.1 Endorsed to include Limited Seepage and Pollution Endorsement

4.7.2 Endorsed to include Evacuation Expense Coverage Endorsement.

### 4.8 Other Insurance

Other insurance may be deemed appropriate to cover risks and exposures related to the scope of work or changes to the scope of work required by City of Tacoma. The costs of such necessary and appropriate Insurance coverage shall be borne by Contractor.

### 4.9 Other Conditions

Contractor will be responsible to comply with all specific insurance requirements associated with any highway or rail crossings, e.g., Washington State Department of Transportation (WSDOT), Burlington Northern Santa Fe Railway (BNSF), and Union Pacific Railroad (UPRR).

# **GENERAL PROVISIONS**

*(Revised December 15, 2020)*

## **SECTION I - BIDDING REQUIREMENTS**

SECTION I REQUIREMENTS ARE BINDING ON ALL RESPONDENTS.

### **1.01 USE AND COMPLETION OF CITY PROPOSAL SHEETS**

#### **A. Respondent's Proposal**

Each Respondent must bid exactly as specified on the Proposal sheets. All proposals must remain open for acceptance by the City for a period of at least 60 calendar days from the date of opening of the bids.

#### **B. Alterations of Proposals Not Allowed**

Proposals that are incomplete or conditioned in any way contain alternatives or items not called for in the General Provisions and Specifications, or not in conformity with law may be rejected as being nonresponsive. The City cannot legally accept any proposal containing a substantial deviation from these Specifications.

#### **C. Filling Out City Proposal Sheets**

All proposals must be completed using the proposal sheets and forms included with this specification, and the prices must be stated in figures either written in ink or typewritten. No proposal having erasures or interlineations will be accepted unless initialed by the Respondent in ink.

### **1.02 CLARIFICATION OF PROPOSAL FOR RESPONDENT**

If a prospective Respondent has any questions concerning any part of the Proposal, he/she may submit a written request for answer of his/her questions. Any interpretation of the Proposal will be made by an Addendum duly issued and mailed or delivered to each prospective Respondent. Such addendum must be acknowledged in the proposal. The City of Tacoma will not be responsible for any other explanation or interpretation of the bid documents.

### **1.03 RESPONDENT'S BOND OR CERTIFIED CHECK**

Each bid for construction must be accompanied either by a certified or cashier's check for 5 percent of the total amount bid, including tax, payable to the City Treasurer, or an approved bid bond, by a surety company authorized to do business in the State of Washington, for 5 percent of the total amount bid. The person legally authorized to sign the bid must sign all bid bonds. The approved bid bond form attached to these Specifications should be used: no substantial variations from the language thereof will be accepted.

If a bid bond is used, the 5 percent may be shown either in dollars and cents, or the bid bond may be filled in as follows, "5 percent of the total amount of the accompanying proposal."

The check of the successful Respondent will be returned after award of the Contract, acceptance of the Payment and Performance Bond and City's receipt of the signed Contract. The checks of all other Respondents will be returned immediately upon the award of the Contract. Bid bonds will not be returned.

### **1.04 DELIVERY OF PROPOSALS TO THE CITY'S PURCHASING OFFICE**

- A.** Proposal packages must be received by the City's Procurement and Payables Division in SAP Ariba (unless another form of delivery is stated), prior to the scheduled time and date stated in the Solicitation.
- B.** Supplier is solely responsible for timely delivery of its Submittal.
- C.** Submittals received after the time stated in the solicitation will not be accepted.
- D.** For purposes of determining whether a Submittal has been timely received in SAP Ariba, the City's Procurement and Payables Division will rely on the submittal clock in SAP Ariba.

## **1.05 LICENSES/PERMITS**

- A.** Suppliers, if applicable, must have a Washington state business license at the time of Submittal and throughout the term of the Contract. Failure to include a Washington state business license may be grounds for rejection of the Submittal or cancellation of contract award. Information regarding Washington state business licenses may be obtained at <http://bls.dor.wa.gov>.
- B.** Upon award, it is the responsibility of the Supplier to register with the City of Tacoma's Tax and License Division, 733 South Market Street, Room 21, Tacoma, WA 98402-3768, 253-591-5252, [https://www.cityoftacoma.org/government/city\\_departments/finance/tax\\_and\\_license/](https://www.cityoftacoma.org/government/city_departments/finance/tax_and_license/). Supplier shall obtain a business license as is required by Tacoma Municipal Code Subtitle 6C.20.
- C.** During the term of the Contract, Supplier, at its expense, shall obtain and keep in force any and all necessary licenses and permits.

## **1.06 CONTRACTOR'S STATE REGISTRATION NUMBER**

Contractors for construction or public works construction are required to be licensed by the state. If the provisions of Chapter 18.27 of the Revised Code of Washington apply to the Respondent, then the Respondent's Washington State Contractor's Registration No. must accompany the bid.

## **1.07 BID IS NONCOLLUSIVE**

The Respondent represents by the submission of the Proposal that the prices in this Bid are neither directly nor indirectly the result of any formal or informal agreement with another Respondent.

## **1.08 EVALUATION OF BID**

### **A. Price, Experience, Delivery Time and Responsibility**

In the evaluation of bids, the Respondent's experience, delivery time, quality of performance or product, conformance to the specifications and responsibility in performing other contracts (including satisfying all safety requirements) may be considered in addition to price. In addition, the bid evaluation factors set forth in City Code Section 1.06.262 may be considered by the City. Respondents who are inexperienced or who fail to properly perform other contracts may have their bids rejected for such cause.

### **B. Prequalified Electrical Contractor**

Certain types of electrical construction require special expertise, experience, and prequalification of the Contractor (or subcontractor) by the City. In such cases, the Respondent must be prequalified or the Respondent must subcontract with a City prequalified electrical contractor for the specialty work.

### **C. Insertions of Material Conflicting with Specifications**

Only material inserted by the Respondent to meet requirements of the Specifications will be considered. Any other material inserted by the Respondent will be disregarded as being nonresponsive and may be grounds for rejection of the Respondent's Proposal.

### **D. Correction of Ambiguities and Obvious Errors**

The City reserves the right to correct obvious errors in the Respondent's proposal. In this regard, if the unit price does not compute to the extended total price, the unit price shall govern.

## **1.09 WITHDRAWAL OF BID**

### **A. Prior to Bid Opening**

Any Respondent may withdraw his/her Proposal prior to the scheduled bid opening time by delivering a written notice to the City's Procurement and Payables Office. The notice may be submitted in person or by mail; however, it must be received by the City's Procurement and Payables Office prior to the time of bid opening.

### **B. After Bid Opening**

No Respondent will be permitted to withdraw his/her Proposal after the time of bid opening, as set forth in the Call for Bids, and before the actual award of the Contract, unless the award of Contract is delayed more than sixty (60) calendar days after the date set for bid opening. If a delay of more than 60 calendar days does occur, then the Respondent must submit written notice withdrawing his/her Proposal to the Purchasing Manager.

#### **1.10 OPENING OF BIDS**

At the time and place set for the opening of bids, all Proposals, unless previously withdrawn, will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Proposal.

#### **1.11 CITY COUNCIL/PUBLIC UTILITY BOARD FINAL DETERMINATION**

The City Council or Public Utility Board of the City of Tacoma shall be the final judge as to which is the lowest and best bid in the interest of the City of Tacoma. The City reserves the right to reject any and all bids, waive minor deviations or informalities, and if necessary, call for new bids.

#### **1.12 RESPONDENT'S REFUSAL TO ENTER INTO CONTRACT**

Any Respondent who refuses to enter into a Contract after it has been awarded to the Respondent will be in breach of the agreement to enter the Contract and the Respondent's certified or cashier's check or bid bond shall be forfeited.

#### **1.13 TAXES**

##### **A. Include In Proposal All Taxes**

Respondent shall include in his/her Proposal all applicable local, city, state, and federal taxes. It is the Respondent's obligation to state on his/her Proposal sheet the correct percentage and total applicable Washington State and local sales tax. The total cost to the City including all applicable taxes may be the basis for determining the low Respondent.

##### **B. Federal Excise Tax**

The City of Tacoma is exempt from federal excise tax. Where applicable, the City shall furnish a Federal Excise Tax Exemption certificate.

##### **C. City of Tacoma Business and Occupation Tax**

Sub-Title 6A of the City of Tacoma Municipal Code (TMC) provides that transactions with the City of Tacoma, may be subject to the City of Tacoma's Business and Occupation Tax. It is the responsibility of the Respondent awarded the Contract to register with the City of Tacoma's Department of Tax and License, 733 South Market Street, Room 21, Tacoma, WA 98402-3768, telephone 253-591-5252. The City's Business and Occupation Tax amount shall not be shown separately but shall be included in the unit and/or lump sum prices bid.

#### **1.14 FIRM PRICES/ESCALATION**

Except as specifically allowed by the Special Provisions, only firm prices will be accepted.

#### **1.15 AWARD**

##### **A. Construction and/or Labor Contracts**

Unless specifically noted in the Special Provisions or Proposal sheets, all construction and/or labor contracts will be awarded to only one Respondent.

##### **B. Supply/Equipment Contracts**

The City reserves the right to award an equipment or supply contract for any or all items to one or more Respondents as the interests of the City will be best satisfied.

#### **1.16 INCREASE OR DECREASE IN QUANTITIES**

The City of Tacoma reserves the right to increase or decrease the quantities of any items under this Contract and pay according to the unit prices quoted in the Proposal (with no adjustments for anticipated profit).

#### **1.17 EXTENSION OF CONTRACT**

Contracts resulting from this specification shall be subject to extension by mutual agreement per the same prices, terms and conditions.

## 1.18 PAYMENT TERMS

- A. Prices will be considered as net 30 calendar days if no cash discount is shown. Payment discount periods of twenty (20) calendar days or more if offered in the submittal, will be considered in determining the apparent lowest responsible submittal. Discounts will be analyzed in context of their overall cumulative effect. Invoices will not be processed for payment nor will the period of cash discount commence until receipt of a properly completed invoice and until all invoiced items are received and satisfactory performance of the Contractor has been attained. If an adjustment in payment is necessary due to damage or dispute, the cash discount period shall commence on the date final approval for payment is authorized.
- B. ePayable/Credit Card Acceptance. Submittals offering ePayable/Credit card acceptance may be compared against submittals offering a prompt payment discount to evaluate the overall cumulative effect of the discount against the advantage to the City of the ePayable/Credit card acceptance, and may be considered in determining the apparent lowest responsible submittal.

## 1.19 PAYMENT METHOD – EPAYABLES – CREDIT CARD ACCEPTANCE – EFT/ACH ACCEPTANCE

- A. Payment methods include:
- EPayables (Payment Plus). This is payment made via a virtual, single use VISA card number provided by the City's commercial card provider. Suppliers accepting this option will receive "due immediately" payment terms. Two options for acceptance are available to suppliers. Both are accompanied by an emailed advice containing complete payment details:
    - Straight-through processing (buyer initiated). Immediate, exact payments directly deposited to supplier accounts by the City's provider bank; the supplier does not need to know card account details.
    - Supplier retrieves card account through the secure, on-line portal provided via email notifications sent by the City's commercial card provider.
  - Credit card. Tacoma's VISA procurement card program is supported by standard bank credit suppliers and requires that merchants abide by the VISA merchant operating rules. It provides "due immediately" payment terms.
    - Suppliers must be PCI-DSS compliant (secure credit card data management) and federal FACTA (sensitive card data display) compliant.
    - Suppliers must be set up by their card processing equipment provider (merchant acquirer) as a minimum of a Level II merchant with the ability to pass along tax, shipping and merchant references information.
  - Electronic Funds Transfer (EFT) by Automated Clearing House (ACH). Standard terms are net 30 for this payment method.
  - Check or other cash equivalent. Standard terms are net 30 for this payment method.
- B. The City's preferred method of payment is by ePayables (Payment Plus) followed by credit card (aka procurement card). Suppliers may be required to have the capability of accepting the City's ePayables or credit card methods of payment. **The City of Tacoma will not accept price changes or pay additional fees when ePayables (Payment Plus) or credit card is used.**
- C. The City, in its sole discretion, will determine the method of payment for goods and/or services as part of the Contract.

## 1.20 COOPERATIVE PURCHASING

The Washington State Interlocal Cooperative Act RCW 39.34 provides that other governmental agencies may purchase goods and services on this solicitation or contract in accordance with the terms and prices indicated therein if all parties are agreeable.

## 1.21 PUBLIC DISCLOSURE: PROPRIETARY OR CONFIDENTIAL INFORMATION

- A. Respondent's Submittals, all documents and records comprising any Contract awarded to Respondent, and all other documents and records provided to the City by Respondent are deemed public records subject to disclosure under the Washington State Public Records Act, Chapter 42.56 RCW (Public Records Act). Thus, City may be required, upon request, to disclose the Contract and documents or records related to it unless an exemption under the Public Records Act or other laws applies. In the event CITY receives a request for such disclosure, determines in its legal judgment that no applicable exemption to disclosure applies; and Respondent has complied with the requirements to mark records considered confidential or proprietary



as such requirements are stated below, City agrees to provide Respondent 10 days written notice of impending release. Should legal action thereafter be initiated by Respondent to enjoin or otherwise prevent such release, all expense of any such litigation shall be borne by Respondent, including any damages, attorneys' fees or costs awarded by reason of having opposed disclosure. City shall not be liable for any release where notice was provided and Respondent took no action to oppose the release of information.

**B.** If Respondent provides City with records or information that Respondent considers confidential or proprietary, Respondent must mark all applicable pages or sections of said record(s) as "Confidential" or "Proprietary." Further, in the case of records or information submitted in response to a Request for Proposals, an index must be provided indicating the affected pages or sections and locations of all such material identified Confidential or Proprietary. Information not included in the required index will not be reviewed for confidentiality or as proprietary before release. If Supplier fails to so mark or index Submittals and related records, then the City, upon request, may release said record(s) without the need to satisfy the requirements of subsection A above; and Respondent expressly waives its right to allege any kind of civil action or claim against the City pertaining to the release of said record(s).

**1.22 Submission of materials in response to City's Solicitation shall constitute assent by Respondent to the foregoing procedure and Respondent shall have no claim against the City on account of actions taken pursuant to such procedure. FEDERAL AID PROJECTS**

The City of Tacoma in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, subtitle A, Office of the Secretary, part 21, nondiscrimination in federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR, part 26, will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.

## **SECTION II - CONTRACT REQUIREMENTS**

### **2.01 CONTRACTOR'S RESPONSIBILITY**

#### **A. Contract Documents**

The Respondent to whom the Contract is awarded, hereinafter called the Contractor, shall enter into a Contract with the City of Tacoma, , within 10 days after receipt from the City of Tacoma of a properly prepared Contract. In addition, the Contractor will do all things required to promptly perform this Contract pursuant to the terms of this Contract. Certain contracts for supplies, goods or equipment may use the City Purchase Order in place of a formal contract document.

#### **B. Surety Bonds**

Except as modified by the Special Provisions, the Respondent to whom the Contract is awarded shall provide a payment and performance bond, including power of attorney, for 100 percent of the amount of his/her bid (including sales taxes), to insure complete performance of the Contract including the guarantee. The bonds must be executed by a surety company licensed to do business in the State of Washington. For a supply-type contract, a cashier's check or cash may be substituted for the bonds; however, this cash or cashier's check must remain with the City through the guarantee period and any interest on said amount shall accrue to the City.

#### **C. Independent Contractor**

Contractor is an independent contractor; no personnel furnished by the Contractor shall be deemed under any circumstances to be the agent or servant of the City. Contractor shall be fully responsible for all acts or omissions of Subcontractors and its and their suppliers and of persons employed by them, and shall be specifically responsible for sufficient and competent supervision and inspection to assure compliance in every respect with the Contract. There shall be no contractual relationship between any Subcontractors or supplier and the City arising out of or by virtue of this agreement. No provision of the Contract is intended or is to be construed to be for the benefit of any third party.

## **2.02 CONFLICTS IN SPECIFICATIONS**

Anything mentioned in the Specifications and not shown on the Drawings and anything on the Drawings and not mentioned in the Specifications shall be of like effect and shall be understood to be shown and/or mentioned in both. In case of differences between Drawings and Specifications, the Specifications shall govern. In addition, in the event of any conflict between these General Provisions, the Special Provisions, the Technical Provisions and/or the Proposal pages, the following order of precedence shall control:

1. Proposal pages prevail if they conflict with the General, Special or Technical Provisions.
2. Special Provisions prevail if they conflict with the General Provisions and/or Technical Provisions.
3. Technical Provisions prevail if they are in conflict with the General Provisions.

In case of discrepancy of figures between Drawings, Specifications or both, the matter shall immediately be submitted to the Engineer for determination. Failure to submit the discrepancy issue to the Engineer shall result in the Contractor's actions being at his/her own risk and expense. The Engineer shall furnish from time to time such detailed drawings and other information as he/she may consider necessary.

## **2.03 INSPECTION**

### **A. Of the Work**

All materials furnished and work done shall be subject to inspection.

The Inspector administering the Contract shall at all times have access to the work wherever it is in progress or being performed, and the Contractor shall provide proper facilities for such access and inspection. Such inspection shall not relieve the Contractor of the responsibility of performing the work correctly, utilizing the best labor and materials in strict accordance with the Specifications of this Contract. All material or work approved and later found to be defective shall be replaced without cost to the City of Tacoma.

### **B. Inspector's Authority**

The inspector shall have power to reject materials or workmanship which do not fulfill the requirements of these Specifications, but in case of dispute the Contractor may appeal to the Director or Superintendent, whose decision shall be final. The word "Director" means the Director of the City of Tacoma General Government department that is administering the contract. The word "Superintendent" means the Superintendent of the City of Tacoma, Department of Public Utilities Division that is administering the contract.

The Contract shall be carried out under the general control of the representative of the particular City Department or Division administering the Contract, who may exercise such control over the conduct of the work as may be necessary, in his or her opinion, to safeguard the interest of the City of Tacoma. The Contractor shall comply with all orders and instructions given by the representative of the particular Department or Division administering the Contract in accordance with the terms of the Contract.

Provided, that for the purposes of construction contracts, such control shall only apply (a) to the extent necessary to ensure compliance with the provisions of this contract, and (b) to the extent necessary to fulfill any nondelegable duty of the City for the benefit of third parties not engaged in promoting the activity of this contract.

Nothing herein contained, however, shall be taken to relieve the Contractor of his/her obligations or responsibilities under the Contract.

## **2.04 FEDERAL, STATE AND MUNICIPAL REGULATIONS**

All federal, state, municipal and/or local regulations shall be satisfied in the performance of all portions of this Contract. The Contractor shall be solely responsible for all violations of the law from any cause in connection with work performed under this Contract.

## **2.05 INDEMNIFICATION**

### **A. Indemnification**

Contractor acknowledges that pursuant to the terms of this agreement, Contractor is solely and totally responsible for the safety of all persons and property in the performance of this Contract. To the greatest extent allowed by law, Contractor assumes the risk of all damages, loss, cost, penalties and expense and agrees to indemnify, defend and hold harmless the City of Tacoma, from and against any and all liability which may accrue to or be sustained by the City of Tacoma on account of any claim, suit or legal action made or brought against the City of Tacoma for the death of or injury to persons (including Contractor's or subcontractor's employees) or damage to property involving Contractor, or subcontractor(s) and their employees or agents, arising out of and in connection with or incident to the performance of the Contract including if the City is found to have a nondelegable duty to see that work is performed with requisite care, except for injuries or damages caused by the sole negligence of the City. In this regard, Contractor recognizes that Contractor is waiving immunity under industrial Insurance Law, Title 51 RCW. This indemnification extends to the officials, officers and employees of the City and also includes attorney's fees and the cost of establishing the right to indemnification hereunder in favor of the City of Tacoma. In addition, within the context of competitive bidding laws, it is agreed that this indemnification has been mutually negotiated. Provided however, this provision is intended to be applicable to the parties to this agreement and it shall not be interpreted to allow a Contractor's employee to have a claim or cause of action against Contractor.

### **B. Limitation of Liability for Primarily Supply-Type Contracts**

In all contracts where the total cost of the supply of materials and/or equipment constitute at least 70 percent of the total contract price (as determined by the City), the City agrees that it will not hold the contractor, supplier or manufacturer liable for consequential damages for that part of the contract related to the manufacture and/or design of the equipment, materials or supplies.

## **2.06 CONTRACTOR'S INSURANCE**

**A.** During the course and performance of a Contract, Contractor will provide proof and maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements as is applicable to the services, products, and deliverables provided under the Contract. The City of Tacoma Insurance Requirements document, if issued, is fully incorporated into the Contract by reference.

**B.** Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

## **2.07 ASSIGNMENT AND SUBLETTING OF CONTRACT**

### **C. Assignment**

The Contract shall not be assigned except with the consent of the Superintendent or his/her designee.

Requests for assignment of this contract must be in writing with the written consent of the surety, and the request must show the proposed person or organization to which the contract is assigned is capable, experienced and equipped to perform such work. The proposed substitute person or organization may be required to submit to the City information as to his/her experience, financial ability and give statements covering tools, equipment, organization, plans and methods to fulfill any portion of the Contract prior to approval of assignment.

### **D. Subletting**

The Contract shall not be sublet except with the written consent of the Superintendent or his/her designee. In the event that a prequalified electrical contractor is necessary to perform certain portions of the work, such work may be subcontracted with a City prequalified electrical contractor for the type of work involved.

Requests for subletting of this Contract must be in writing with the written consent of the Surety, and the request must show the proposed person or organization to which the Contract is sublet is capable, experienced and equipped to perform such work. The proposed substitute person or organization may be required to submit to the City information as to his experience, financial ability and give statements covering tools, equipment, organization, plans and methods to fulfill any portion of the Contract prior to approval of subletting.

The written consent approving the subletting of the Contract shall not be construed to relieve the Contractor of his/her responsibility for the fulfillment of the Contract. The Subcontractor shall be considered to be the agent of the Contractor and the Contractor agrees to be responsible for all the materials, work and indebtedness incurred by the agent.

A subcontractor shall not sublet any portion of a subcontract for work with the City without the written consent of the City.

## **2.08 DELAY**

### **E. Extension of Time**

With the written approval of the Superintendent or his/her designee, the Contractor may be granted additional time for completion of the work required under this Contract, if, in the Superintendent's opinion the additional time requested arises from unavoidable delay.

### **F. Unavoidable Delay**

Unavoidable delays in the prosecution of the work shall include only delays from causes beyond the control of the Contractor and which he/she could not have avoided by the exercise of due care, prudence, foresight and diligence. Delay caused by persons other than the Contractor, Subcontractors or their employees will be considered unavoidable delays insofar as they necessarily interfere with the Contractor's completion of the work, and such delays are not part of this Contract.

Unavoidable delay will not include delays caused by weather conditions, surveys, measurements, inspections and submitting plans to the Engineer of the particular Division involved in administering this Contract.

## **2.09 GUARANTEE**

### **A. Guarantee for Construction, Labor or Services Contract**

Neither the final certificate of payment or any provision in the Contract Documents, nor partial or entire occupancy of the premises by the City, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The City will give notice of observed defects with reasonable promptness.

If it has been discovered, before payment is required under the terms of the Contract, that there is a failure to comply with any of the terms and provisions of this Contract, the City has the right and may withhold payment.

In case of a failure of any part of the work, materials, labor and equipment furnished by the Contractor or to fully meet all of the requirements of the Contract, the Contractor shall make such changes as may be necessary to fully meet all of the specifications and requirements of this Contract. Such changes shall be made at the Contractor's sole cost and expense without delay and with the least practicable inconvenience to the City of Tacoma. Rejected material and equipment shall be removed from the City's property by and at the expense of the Contractor.

### **B. Guarantee for Supply Contracts**

Unless a longer period is specified, the supplier and/or manufacturer of the supplies, materials and/or equipment furnished pursuant to this Contract agrees to correct any defect or failure of the supplies, materials and/or equipment which occurs within one year from the date of: (1) test energization if electrical or mechanical equipment; (2) commencement of use if supplies or materials, provided, however, said guarantee period shall not extend beyond eighteen months after date of receipt by the City. All of the costs (including shipping, dismantling and reinstallation) of repairs and/or corrections of defective or failed equipment, supplies and/or material is the responsibility of the supplier and/or manufacturer.

When the supplier is not the manufacturer of the item of equipment, supplier agrees to be responsible for this guarantee and supplier is not relieved by a manufacturer's guarantee.

### **C. Guarantee Period Extension**

The Contract guarantee period shall be suspended from the time a significant defect is first documented by the City until the work or equipment is repaired or replaced by Contractor and accepted by the City. In addition, in the event less than ninety (90) days remain on the guarantee period (after recalculating), the guarantee period shall be extended to allow for at least ninety (90) days from the date the work or equipment is repaired or replaced and accepted by the City.

#### **2.10 DEDUCTIONS FOR UNCORRECTED WORK**

If the City of Tacoma deems it expedient to correct work not done in accordance with the terms of this Contract, an equitable deduction from the Contract price shall be made.

#### **2.11 CITY OF TACOMA'S RIGHT TO TERMINATE CONTRACT**

##### **A. Termination for Convenience**

1. Supplies. The City may terminate a Contract for supplies at any time upon prior written notice to Contractor. Upon the effective date of termination specified in such notice, and payment by the City, all conforming supplies, materials, or equipment previously furnished hereunder shall become its property.
2. Services. The City may terminate a Contract for services at any time, with or without cause, by giving 10-business day's written notice to Supplier. In the event of termination, all finished and unfinished work prepared by Supplier pursuant to the Contract shall be provided to the City. In the event City terminates the Contract due to the City's own reasons and without cause due to Supplier's actions or omissions, the City shall pay Supplier the amount due for actual work and services necessarily performed under the Contract up to the effective date of termination, not to exceed the total compensation set forth in the Contract.

##### **B. Termination for Cause**

1. The City may terminate a Contract for either services or supplies in the event of any material breach of any of the terms and conditions of the Contract if the Contractor's breach continues in effect after written notice of breach and 30 days to cure such breach and fails to cure such breach
2. Bankruptcy. If the Contractor should be adjudged as bankrupt, or makes a general assignment for the benefit of creditors, or a receiver should be appointed on account of his/her insolvency, or if he/she or any of his/her subcontractors should violate any of the provisions of the Contract, or if the work is not being properly and diligently performed, the City of Tacoma may serve written notice upon the Contractor and Surety, executing the Payment and Performance Bond, of its intention to terminate the Contract; such notice will contain the reasons for termination of the Contract, and unless within 10 days after the serving of such notice, such violation shall cease and an arrangement satisfactory to the City of Tacoma for correction thereof shall be made, the Contract shall, upon the expiration of said 10 days, cease and terminate and all rights of the Contractor hereunder shall be forfeited. In the event the Contract is terminated for cause, Contractor shall not be entitled to any lost profits resulting therefrom.
3. Notice. In the event of any such termination for cause, the City of Tacoma shall immediately send (by regular mail or other method) written notice thereof to the Surety and the Contractor. Upon such termination the Surety shall have the right to take over and perform the Contract, provided however, the Surety must provide written notice to the City of its intent to complete the work within 15 calendar days of its receipt of the original written notice (from the City) of the intent to terminate. Upon termination and if the Surety does not perform the work, the City of Tacoma may take over the work and prosecute the same to completion by any method it may deem advisable, for the account of and at the expense of the Contractor, and the Contractor and the Surety shall be liable to the City of Tacoma for all cost occasioned to the City of Tacoma thereby. The City of Tacoma may without liability for doing so, take possession of and utilize in completing the work, such materials, equipment, plant and other property belonging to the Contractor as may be on the site of the work and necessary therefore.

## 2.12 LIENS

In the event that there are any liens on file against the City of Tacoma, the City of Tacoma shall be entitled to withhold final or progress payments to the extent deemed necessary by the City of Tacoma to properly protect the outstanding lien claimants until proper releases have been filed with the City Clerk.

## 2.13 LEGAL DISPUTES

### A. General

Washington law shall govern the interpretation of the Contract. The state or federal courts located in Pierce County Washington shall be the sole venue of any mediation, arbitration, or litigation arising out of the Contract.

Respondents providing submittals from outside the legal jurisdiction of the United States of America will be subject to Tacoma's City Attorney's Office (CAO) opinion as to the viability of possible litigation pursuant to a contract resulting from this Specification. If it is the opinion of the CAO that any possible litigation would be beyond reasonable cost and/or enforcement, the submittal may be excluded from evaluation.

### B. Attorney Fees

For contracts up to \$250,000, which become the subject of litigation or arbitration, the substantially prevailing party may be entitled to reasonable attorney fees, as provided in RCW 39.04.240. Provided, however, the attorney fee hourly rate for the City of Tacoma's assistant city attorneys is agreed to be \$150 per hour or the same as the hourly rate for Contractor's legal counsel, whichever is greater.

## 2.14 DELIVERY

Prices must be quoted F.O.B. destination, freight prepaid and allowed with risk of loss during transit remaining with Contractor/Supplier (unless otherwise stated in these Specifications) to the designated address set forth in these Specifications.

Deliveries shall be between 9:00 a.m. and 3:30 p.m.; Monday through Friday only (except legal holidays of the City of Tacoma).

Legal holidays of the City of Tacoma are:

New Year's Day	January 1
Martin Luther King's Birthday	3rd Monday in January
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	1st Monday in September
Veteran's Day	November 11
Thanksgiving Day	4th Thursday of November
Day after Thanksgiving	4th Friday of November
Christmas Day	December 25

When any of these holidays occur on Saturday or Sunday, the preceding Friday or the following Monday, respectively, is a legal holiday for the City of Tacoma.

## 2.15 PACKING SLIPS AND INVOICES

**A.** Packing slips and shipping notices shall be sent to the specific City Division or Department receiving the item(s) at the address stated in City's Solicitation or as otherwise stated in the Contract and include complete description of items, contents of items if crated or cased, quantity, shipping point, carrier, bill of lading number and City of Tacoma purchase order.

**B.** Each invoice shall show City of Tacoma purchase order number, release number if applicable, quantity, unit of measure, item description, unit price and extended price for each line if applicable, services and deliverables provided if applicable. Line totals shall be summed to give a grand total to which sales tax shall be added, if applicable.

1. For transactions conducted in SAP Ariba, invoices shall be submitted through Ariba.
2. For invoices paid by ACH or by check, unless stated otherwise, invoices shall be electronically submitted by email with corresponding PO number listed in the subject line to [accountspayable@cityoftacoma.org](mailto:accountspayable@cityoftacoma.org).

3. For invoices paid by credit card, invoices shall also display the last name of the cardholder and last four digits (only) of the card number (e.g., Jones/6311). Unless stated otherwise, invoices shall be electronically submitted by email with corresponding PO number listed in the subject line to (do not combine different POs into one invoice or charge) to [pcardadmin@cityoftacoma.org](mailto:pcardadmin@cityoftacoma.org).

## **2.16 APPROVED EQUALS**

**A.** Unless an item is indicated as "No substitute", special brands, when named, are intended to describe the standard of quality, performance or use desired. Equal items will be considered by the City, provided that the respondent specifies the brand and model, and provides all descriptive literature, independent test results, product samples, local servicing and parts availability to enable the City to evaluate the proposed "equal".

**B.** The decision of the City as to what items are equal shall be final and conclusive. If the City elects to purchase a brand represented by the respondent to be an "equal", the City's acceptance of the item is conditioned on the City's inspection and testing after receipt. If, in the sole judgment of the City, the item is determined not to be an equal, the item shall be returned at the respondent's expense.

**C.** When a brand name or level of quality is not stated by the respondent, it is understood the offer is exactly as specified. If more than one brand name is specified, respondents must clearly indicate the brand and model/part number being bid.

## **2.17 ENTIRE AGREEMENTS**

This written contract represents the entire Agreement between the parties and supersedes any prior oral statements, discussions or understandings between the parties.

## **2.18 CODE OF ETHICS**

The City's Code of Ethics, Chapter 1.46, Tacoma Municipal Code, provides ethical standards for City personnel and prohibits certain unethical conduct by others including respondents and contractors. Violation of the City's Code of Ethics will be grounds for termination of this contract.

## **2.19 FEDERAL FINANCIAL ASSISTANCE**

If federal funds, including FEMA financial assistance to the City of Tacoma, will be used to fund, pay or reimburse all or a portion of the Contract, Contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives and the following clauses will be incorporated into the Contract:

**A. EQUAL EMPLOYMENT OPPORTUNITY** During the performance of this Contract, Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

1. Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other

employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
6. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

## **B. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (B)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (B)(1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.



3. Withholding for unpaid wages and liquidated damages. The City shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (B)(2) of this section.
4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (B)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (B)(1) through (4) of this section.

**C. CLEAN AIR ACT**

1. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
2. Contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**D. FEDERAL WATER POLLUTION CONTROL ACT**

1. Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. Contractor agrees to report each violation to the City, understands, and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**E. DEBARMENT AND SUSPENSION**

1. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
2. Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
3. This certification is a material representation of fact relied upon by the City. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to (insert name of recipient/subrecipient/applicant), the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
4. Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

**F. BYRD ANTI-LOBBYING AMENDMENT**

1. Contractors who apply or bid for an award of \$100,000 or more shall file the required certification with City. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the City.
2. If applicable, Contractor must sign and submit to the City the following certification:

**APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING**

**Certification for Contracts, Grants, Loans, and Cooperative Agreements**

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap.38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

## **G. PROCUREMENT OF RECOVERED MATERIALS**

1. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
  - a. Competitively within a timeframe providing for compliance with the contract performance schedule;
  - b. Meeting contract performance requirements; or
  - c. At a reasonable price.
2. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
3. Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

[Section III is for contracts that involve construction and/or labor, and are not applicable to contracts solely for material/supply purchases.]

## **GENERAL PROVISIONS**

### **SECTION III - CONSTRUCTION AND/OR LABOR CONTRACTS**

SECTION III REQUIREMENTS APPLY ONLY TO CONSTRUCTION AND/OR LABOR CONTRACTS AND ARE IN ADDITION TO APPLICABLE REQUIREMENTS CONTAINED IN SECTION II CONTRACT REQUIREMENTS.

#### **3.01 RESPONDENT'S DUTY TO EXAMINE**

The Respondent agrees to be responsible for examining the site(s) and to have compared them with the Specifications and Contract Drawings, and to be satisfied as to the facilities and difficulties attending the execution of the proposed Contract (such as uncertainty of weather, floods, nature and condition of materials to be handled and all other conditions, obstacles and contingencies) before the delivery of his/her Proposal. No allowance will be subsequently made by the City on behalf of the Respondent by reason of any error or neglect on Respondent's part, for such uncertainties as aforesaid.

#### **3.02 PERMITS**

Except when modified by the Special Provisions, the Contractor shall procure and pay for all permits and licenses necessary for the completion of this Contract including those permits required by the City of Tacoma. The City will obtain county or state road crossing permits if required. In the event a necessary permit is not obtained, the Contractor will not be permitted to work on items subject to said permit and any delays caused thereby will not be subject to extra compensation or extensions.

#### **3.03 NOTIFICATION OF OTHER GOVERNMENTAL AGENCIES AND UTILITIES WHEN UNDERGROUND WORK IS INVOLVED**

The Contractor shall notify all other affected governmental agencies and utilities whenever underground work is done under the terms of this Contract. The Contractor is required to obtain permission of the appropriate public and private utilities and governmental agencies before performing underground work pursuant to the terms of this Contract. The Contractor is required to call "one call" at 1-800-424-5555 for all work involving excavation or digging more than 12 inches beneath ground or road surface.

The City may have indicated on the plans and specifications the existence of certain underground facilities that are known to the City department responsible for this Contract. It is the Contractor's responsibility to fully comply with the Underground Utility Locate Law, Chapter 19.122 RCW. If the site conditions are "changed or differing" as defined by RCW 19.122.040(l), the Contractor may pursue the party responsible for not properly marking or identifying the underground facility. The Contractor agrees not to file any claim or legal action against the City (department responsible for this Contract) for said "changed or differing" conditions unless said City department is solely responsible for the delay or damages that the Contractor may have incurred.

### **3.04 TRENCH EXCAVATION BID ITEM**

In the event that "trench excavation" in excess of four feet requires a safety system pursuant to Washington State law and safety shoring, sloping, sheeting, or bracing is used, a separate bid item should be set forth in the Proposal for this work. If a separate bid item is not set forth in the Proposal pages, said installed safety system shall be paid at \$3.00 per lineal foot of trench, which unit price includes both sides of the trench.

### **3.05 SAFETY**

#### **A. General**

The Contractor shall, at all times, exercise adequate precautions for the safety of all persons, including its employees and the employees of a Subcontractor, in the performance of this Contract and shall comply with all applicable provisions of federal, state, county and municipal safety laws and regulations. It is the Contractor's responsibility to furnish safety equipment or to contractually require Subcontractors to furnish adequate safety equipment relevant to their responsibilities.

The Contractor shall obtain the necessary line clearance from the inspector before performing any work in, above, below or across energized Light Division circuits.

The Inspector and/or Engineer may advise the Contractor and the Safety Officer of any safety violations. It is the Contractor's responsibility to make the necessary corrections. Failure to correct safety violations is a breach of this Contract and, as such, shall be grounds for an order from the Safety Officer, Inspector or Engineer to cease further work and remove from the job site until the condition is corrected. Time and wages lost due to such safety shutdowns shall not relieve the Contractor of any provisions of Section 3.14 of this Specification and shall be at the sole cost of the Contractor. The purpose of this authority to stop work is to enforce the contract and not to assume control except to the extent necessary to ensure compliance with the provisions of this contract.

Any of the above actions by employees of the City of Tacoma shall in no way relieve the Contractor of his/her responsibility to provide for the safety of all persons, including his/her employees.

#### **B. Work Hazard Analysis Report**

The Contractor will be required to complete a work hazard analysis report. This report shall outline how the Contractor proposes to satisfy all safety laws and regulations involved in performing the work. This report shall be completed and submitted to the City Safety Officer before the pre-construction conference. A copy of the report shall be maintained at the work site (accessible to the supervisor).

### **3.06 PROTECTION OF WORKERS AND PROPERTY**

The Contractor shall erect and maintain good and sufficient guards, barricades and signals at all unsafe places at or near the work and shall, in all cases, maintain safe passageways at all road crossings, and crosswalks, and shall do all other things necessary to prevent accident or loss of any kind.

The Contractor shall protect from damage all utilities, improvements, and all other property that is likely to become displaced or damaged by the execution of the work under this Contract.

The Contractor is responsible for all roads and property damaged by his/her operations as shall be determined by the Engineer administering this Contract. The Contractor shall be responsible for repairing all damage to roads caused by his/her operations to the satisfaction of the particular governmental body having jurisdiction over the road.

### **3.07 CONTRACTOR - SUPERVISION AND CHARACTER OF EMPLOYEES**

#### **A. Superintendent to Supervise Contractor's Employees**

The Contractor shall keep on his/her work, during its progress, a competent superintendent and any necessary assistants, all of whom must be satisfactory to the City of Tacoma. The Contractor's superintendent shall not be changed except with the consent of the City of Tacoma, unless the Contractor's superintendent proves to be unsatisfactory to the Contractor and ceases to be in his/her employ. The Contractor's superintendent shall represent the Contractor in his/her absence and all directions given to him/her shall be binding as if given to the Contractor directly. The Contractor shall give efficient supervision to the work, using his/her best skill and attention.

## **B. Character of Contractor's Employees**

The Contractor shall employ only competent, skillful, faithful and orderly persons to do the work, and whenever the Engineer administering the Contract shall notify the Contractor in writing that any person on the work is, in his or her opinion, incompetent, unfaithful, disorderly or otherwise unsatisfactory, the Contractor shall forthwith discharge such persons from the work and shall not again employ him or her on this Contract.

### **3.08 CONTRACTOR'S COMPLIANCE WITH THE LAW**

#### **A. Hours of Labor**

The Contractor and Subcontractors shall be bound by the provisions of RCW Chapter 49.28 (as amended) relating to hours of labor. Except as set forth in the Special Provisions, eight (8) hours in any calendar day shall constitute a day's work on a job performed under this Contract.

In the event that the work is not performed in accordance with this provision and in accordance with the laws of the State of Washington, then this Contract may be terminated by the City of Tacoma for the reason that the same is not performed in accordance with the public policy of the State of Washington as defined in said statutes.

#### **B. Prevailing Wages**

If federal, state, local, or any applicable law requires Supplier to pay prevailing wages in connection with a Contract, and Supplier is so notified by the City, then Supplier shall pay applicable prevailing wages.

If applicable, a Schedule of Prevailing Wage Rates and/or the current prevailing wage determination made by the Secretary of Labor for the locality or localities where the Contract will be performed is attached and made of part of the Contract by this reference. If prevailing wages do apply to the Contract, Supplier and its subcontractors shall:

1. Be bound by and perform all transactions regarding the Contract relating to prevailing wages and the usual fringe benefits in compliance with the provisions of Chapter 39.12 RCW, as amended, the Washington State Prevailing Wage Act and/or the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable, including the federal requirement to pay wages not less than once a week,
2. Ensure that no worker, laborer or mechanic employed in the performance of any part of the Contract shall be paid less than the prevailing rate of wage specified on that Schedule and/or specified in a wage determination made by the Secretary of Labor (unless specifically preempted by federal law, the higher of the Washington state prevailing wage or federal Davis-Bacon rate of wage must be paid)and Additionally, in compliance with applicable federal law, contractors are required to pay wages not less than once a week.
3. Immediately upon award of the Contract, contact the Department of Labor and Industries, Prevailing Wages section, Olympia, Washington and/or the federal Department of Labor, to obtain full information, forms and procedures relating to these matters. Per such procedures, a Statement of Intent to Pay Prevailing Wages and/or other or additional documentation required by applicable federal law, must be submitted by Contractor and its subcontractors to the City, in the manner requested by the City, prior to any payment by the City hereunder, and an Affidavit of Wages Paid and/or other or additional documentation required by federal law must be received or verified by the City prior to final Contract payment. In the event any dispute arises as to what are the prevailing rates of wages for work of a similar nature and such dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the Director of the State of Washington, Department of Labor and industries whose decision shall be final, conclusive and binding on all parties involved in the dispute.

### **3.09 COPELAND ANTI-KICKBACK ACT**

For contracts subject to Davis Bacon Act the following clauses will be incorporated into the Contract:

**A. Contractor.** The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

**B. Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

**C. Breach.** A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

### **3.10 CHANGES**

#### **A. In Plans or Quantities**

The City of Tacoma, without invalidating this Contract, or any part of this Contract, may order extra work or make reasonable changes by altering, adding to or deducting from the materials, work and labor and the Contract sum will be adjusted accordingly. All such work and labor shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change. When work or bid items are deducted, reduced or eliminated, it is agreed that no payment will be made to Contractor for anticipated profit.

#### **B. Extra Work**

Any claim or order for extra materials, work and labor made necessary by alterations or additions to the plans or by other reasons for which no price is provided in this Contract, shall not be valid unless the Contractor and Engineer administering the Contract have agreed upon a price prior to commencing extra work, and the agreement has been signed by the Contractor and approved by the Superintendent or his/her designee, and approved by the payment and performance bond surety.

#### **C. Extra Work - No Agreed Price**

If it is impracticable to fix an increase in price definitely in advance, the order may fix a maximum price which shall not under any circumstances, be exceeded, and subject to such limitation, such alteration, modification, or extra shall be paid for at the actual necessary cost as determined by the City of Tacoma, which cost (including an allowance for profit) shall be determined as the sum of the following items (1) to (7) inclusive:

- (1) Labor, computed at regular wage scale, including premium on compensation insurance and charge for social security taxes, and other taxes, pertaining to labor; no charge for premium pay shall be allowed unless authorized by the Engineer administering the Contract;
- (2) The proportionate cost of premiums on comprehensive general liability and other insurance applicable to the extra work involved and required under this Contract;
- (3) Material, including sales taxes pertaining to materials;
- (4) Plant and equipment rental, to be agreed upon in writing before the work is begun; no charge for the cost of repairs to plant or equipment will be allowed;
- (5) Superintendence, general expense and profit computed at 20 percent of the total of paragraphs (1) to (4) inclusive;
- (6) The proportionate cost of premiums on bonds required by this Contract, computed by 1 1/2 percent of the total of paragraphs (1) to (5) inclusive.
- (7) The City of Tacoma reserves the right to furnish such materials as it may deem expedient, and no allowance will be made for profit thereon.

Whenever any extra work is in progress, for which the definite price has not been agreed on in advance, the Contractor shall each day, report to the Engineer the amount and cost of the labor and material used, and any other expense incurred in such extra work on the preceding day, and no claim for compensation for such extra work will be allowed unless such report shall have been made.

The above-described methods of determining the payment for work and materials shall not apply to the performance of any work or the furnishing of any material, which, in the judgment of the Engineer administering the Contract, may properly be classified under items for which prices are established in the Contract.

#### **D. Claims for Extra Work**

If the Contractor claims that any instructions by drawings or otherwise, involve extra cost under this Contract, he/she shall give the City of Tacoma written notice thereof within 30 days after receipt of such instruction, and in any event before proceeding to execute the work, except in an emergency endangering life or property, and the procedures governing the same shall be as provided for immediately above in this paragraph. The method in these paragraphs is the only method available to the Contractor for payment of claims for extra work performed under the terms of this Contract.

### **3.11 CLEANING UP**

The Contractor shall at all times, at his/her own expense, keep the premises free from accumulation of waste materials or debris caused by any workers or the work, at the completion of the work the Contractor shall remove all his waste materials from and about the site and all his/her equipment, sanitary facilities and surplus materials. In the case of dispute, the City of Tacoma may remove the debris and charge the cost to the Contractor as the City of Tacoma shall determine to be just. All material that is deposited or placed elsewhere than in places designated or approved by the Engineer administering the Contract will not be paid for and the Contractor may be required to remove such material and deposit or place it where directed.

### **3.12 PROGRESS PAYMENT**

Progress payments will be made up to the amount of ninety-five percent (95%) of the actual work completed as shall be determined by the Engineer administering the Contract.

The Contractor may request that an escrow account be established as permitted by law, in which event the Contractor will earn interest on the retained funds.

When the time for construction, services and/or installation will exceed thirty (30) days, the Contractor may request, by invoice, to be paid a progress payment based on percentage of work completed. The Engineer will review and approve the progress payment request on a monthly basis.

### **3.13 FINAL PAYMENT**

The final payment of five percent (5%) of the Contract price shall be approved on final acceptance of the work under this Contract by the Superintendent or his/her designee. In addition, before final payment is made, the Contractor shall be required to:

- A. Provide a certificate from the Washington State Department of Revenue that all taxes due from the Contractor have been paid or are collectible in accordance with the provisions of Chapter 60.28 and Title 82 of the Revised Code of Washington;
- B. Provide the General Release to the City of Tacoma on the form set forth in these Contract documents;
- C. Provide a release of any outstanding liens that have been otherwise filed against any monies held or retained by the City of Tacoma;
- D. File with the City Director of Finance, and with the Director of the Washington State Department of Labor and Industries, on the state form to be provided, an affidavit of wages paid;
- E. File with the City Director of Finance, on the state form to be provided, a statement from the State of Washington, Department of Labor and Industries, certifying that the prevailing wage requirements have been satisfied.
- F. File with the City Director of Finance, on the state form to be provided, a statement of release from the Public Works Contracts Division of the State of Washington, Department of Labor and Industries, verifying that all industrial insurance and medical aid premiums have been paid.

If there is a fee assessed to the City for any certificate, release or other form required by law, the contractor agrees that the fee amount may be passed on to the Contractor and deducted from the monies paid to the Contractor.

### **3.14 FAILURE TO COMPLETE THE WORK ON TIME**

Should the completion of the work required under the Contract be delayed beyond the expiration of the period herein set for the completion of said work, or such extension of said period as may be allowed by reason of unavoidable delays, there shall be deducted from the total Contract price of work, for each calendar day by which such completion shall be delayed beyond said period of such extension thereof the sum of \$300 or a sum of money as set forth hereinafter in these Specifications, as the amount of such deduction per calendar day.

Said sum shall be considered not as a penalty, but as liquidated damages, which the City will suffer by reason of the failure of the Contractor to perform and complete the work within the period, herein fixed or such extensions of said period as may be allowed by reason of unavoidable delays.

Any money due or to become due the Contractor may be retained by the City to cover said liquidated damages, and should such money not be sufficient to cover such damages, the City shall have the right to recover the balance from the Contractor or his/her Sureties.

The filing of any bid for the work herein contemplated shall constitute acknowledgment by the Respondent that he/she understands, agrees and has ascertained that the City will actually suffer damages to the amount hereinabove fixed for each and every calendar day during which the completion of the work herein required shall be delayed beyond the expiration of the period herein fixed for such completion or such extension of said period as may be allowed by reason of unavoidable delays.

### **3.15 CITY RESERVES RIGHT TO USE FACILITIES PRIOR TO ACCEPTANCE**

The City of Tacoma hereby reserves the right to use the facilities herein contracted prior to final acceptance under this Contract. The use of said facilities, as mentioned herein, shall not be construed as a waiver or relinquishment of any rights that the City of Tacoma has under this Contract.

### **3.16 LIST OF SUBCONTRACTORS**

Bid proposals for construction, alteration or repair of any building or other public works that may exceed \$1,000,000 including tax shall satisfy the following requirement: Respondent shall submit as part of the bid, the names of the subcontractors, with whom the respondent, if awarded the contract, will subcontract performance of the work of heating, ventilation and air conditioning, plumbing as described in chapter 18.106 RCW, and electrical as described in chapter 19.28 RCW, or to name itself for the work. The respondent shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the respondent must indicate which subcontractor will be used for which alternate. Failure to comply with this provision or the naming of two or more subcontractors to perform the same work shall require the City (pursuant to state law RCW 39.30.060) to determine that respondent's bid is nonresponsive; therefore, the bid will be rejected.



## PREVAILING WAGE RATES

This project requires prevailing wages under [39.12 RCW](#). Any worker, laborer, or mechanic employed in the performance of any part of the work shall be paid not less than the applicable prevailing rate of wage.

The project site is located in Pierce County.

The effective date for prevailing wages on this project will be the **submittal deadline** with these exceptions:

- a. If the project is not awarded within six months of the submittal deadline, the award date is the effective date.
- b. If the project is not awarded pursuant to a competitive solicitation, the date the contract is executed is the effective date.
- c. Janitorial contracts follow WAC 296-127-023.

Except for janitorial contracts, these rates shall apply for the duration of the contract unless otherwise noted in the solicitation.

Look up prevailing rates of pay, benefits, and overtime codes from this link:

<https://secure.lni.wa.gov/wagelookup/>

## REQUIRED FILINGS

The contractor and all subcontractors covered under [39.12 RCW](#) shall submit to the Department of Labor and Industries (L&I) for work provided under this contract:

1. A Statement of Intent to Pay Prevailing Wages must be filed with and approved by L&I upon award of contract.
2. An Affidavit of Wages Paid must be filed with and approved by L&I upon job completion.

Payments cannot be released by the City until verification of these filings are received by the engineer. Additional information regarding these filings can be obtained by calling the Department of Labor & Industries, Prevailing Wage at 360-902-5335, <https://www.lni.wa.gov/> or by visiting their MY L&I account.

## Sustainability Worksheet

The City has an interest in sustainable operations with minimal adverse impact on the environment. The City seeks to do business with vendors that value community and environmental stewardship that help us meet our sustainable purchasing goals.

1. Have you incorporated sustainability into your everyday business practices? Y/N Please describe

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2. Have you taken measures to minimize impacts to the environment in the delivery of proposed goods and/or services? Y/N Please describe.

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3. Please describe the estimated percentage of material to be recycled or reused under this project \_\_\_\_%.

# **Tacoma Rail Radio Monopole Foundation and Installation**

## **SPECIFICATION NO. PG21-0533N**

These Special and Technical Specifications have been prepared under the direction of a licensed Professional Engineer, registered in the State of Washington

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## DIVISION 1 - SPECIAL PROVISIONS

### SECTION 01010 - SUMMARY OF WORK

#### 1.1 PROJECT DESCRIPTION

This project includes the construction of one (1) reinforced concrete drilled pier foundation, installation of one (1) 139-foot, 18-sided monopole with attachments and grounding ring at the Tacoma Rail Office in the Port of Tacoma, Washington.

The contractor shall supply all materials required to complete the work required by this contract in excess of those materials to be supplied by Tacoma Power as listed in Section 01040 – Project Coordination.

In all cases, the City's contract is with one (1) general contractor and it is the general contractor's responsibility to ensure all work required to provide a complete and operational facility is included in their bid. When possible, the City has attempted to reference work which should be coordinated with various trades, but it is the contractor's responsibility to coordinate and schedule the work of all subcontractors, trades, and suppliers to assure the proper and timely prosecution and completion of all items of work.

#### 1.2 PROJECT LOCATION

This project is located at the Tacoma Rail Office, 2601 State Route 509, N Frontage Rd, Tacoma, WA 98421. The project is located in Pierce County, Washington.

#### 1.3 SITE SHOWING

The bidder will be responsible for examining the site(s) and to have compared the sites with the specifications and contract drawings contained in this specification, and be satisfied as to the facilities and difficulties attending the execution of the proposed contract (such as uncertainty of weather, floods, nature and condition of materials to be handled and all other conditions, special work conditions including work schedules, obstacles and contingencies) before the delivery of their proposal.

No allowance will be subsequently made by the City on behalf of the bidder by reason of any error or neglect on the bidder's part, for such uncertainties as aforesaid.

A site showing will be conducted on **Tuesday, August 24, 2021 at 10:00 a.m.**, immediately following the pre-bid meeting. Due to the nature of this project, the bidder is responsible for examining the site prior to placing a bid. **Only one (1) site showing will be conducted. It is the bidder's responsibility to assure that they attend the site showing as scheduled.** If the contractor cannot make the listed showing, they may be able to coordinate a visit to the site on their own. Failure to examine the site may be grounds to reject the bid. Tacoma Power shall make no adjustment to the price or provide any compensation to the contractor for impacts relating to the contractor's failure to consider the potential impacts of not only the site conditions observed, but changes in the observed conditions that could have been foreseen by the contractor.

By entering into the contract, the bidder represents that they have inspected in detail the project site and has become familiar with all the physical and local conditions affecting the project and/or the project site. Any information provided by the City to the contractor, relating to existing conditions on, under, or to the project and/or site including, but not limited to information pertaining to hazardous material abatement and other conditions affecting the project site, represents only the opinion of the City as to the location, character, or quantity of such conditions and is provided only for the convenience of the contractor. The contractor shall draw their own conclusions from such information and make such tests, review and analyses as the contractor deems necessary to understand such conditions and to prepare their proposal.

The City assumes no responsibility whatsoever with respect to the sufficiency or accuracy of such information and there is no guarantee, either expressed or implied, that the conditions indicated or otherwise found by the contractor as a result of any examination or exploration are representative of those existing throughout the work and/or project site.

The contractor shall carefully study and compare the contract documents with each other and shall at once report to the City errors, inconsistencies or omissions discovered. If the contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the contract documents without such notice to the City, the contractor shall assume the risk and responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction.

The contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the contractor with the contract documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the City at once.

#### **1.4 COMMENCEMENT, PROSECUTION AND COMPLETION**

The contractor will be required to complete the contract documents and to provide surety and payment bonds within ten (10) calendar days after the award of the contract. The contractor shall begin the work to be performed in the contract within ten (10) calendar days after the date of notification to commence work. Notification to commence work may either be by letter or, if no letter is issued, by agreement at the preconstruction conference (or if no letter is issued, by the date the contract is executed by the City).

The contractor shall be required to complete all work within **thirty (30) calendar days** after the date of notification to commence work. If the contractor fails to complete all work within **thirty (30) calendar days**, the City will assess liquidated damages in accordance with Section 3.14 of the General Provisions.

The contractor shall begin purchasing material required for all work to be performed in the contract within five (5) calendar days after the date of notification to commence work. All materials necessary to complete the job shall be staged and inspected by the engineer before any work including demolition will be started.

#### **1.5 SPECIFICATION FORMAT**

This specification is written and formatted for use with Public Works specifications and is numbered to be consistent with other specifications, including Construction Specifications Institute (CSI) format, as modified by the City. It is not intended to indicate what work is to be accomplished by various subcontractors on the project. In all cases, the City's contract is with one (1) general contractor and it is the general contractor's responsibility to insure all work required to provide a complete and operational facility is included in their bid.



When possible, the City has tried to reference work which should be included with various trades, but it is the contractor's responsibility to ensure all work is properly coordinated. The numbering system in the Special Provisions Section reflects standard provisions written by the City and assigned constant numbers. Thus, gaps will appear when specific sections are not used.

## **1.6 CONTRACT WORK TIMES**

Contract work times shall be Monday through Friday, 7:00\_a.m. to 5:00 p.m., excluding holidays, described in Section 2.13 of the General Provisions or as otherwise approved by the City.

If the contractor elects to work on a Saturday, Sunday, holiday or longer than the designated contract work times, such work shall be considered overtime work. On all such overtime work, a City engineer or their inspector must be present. The contractor shall reimburse the City for the full amount of the costs for City employees who must work any such overtime hours. It shall be the engineer's decision as to when an inspector is required. For the purpose of estimation of reimbursement of City employee's overtime, the bidder shall budget \$50.00 per hour.

However, if the City orders work to be performed on overtime, all City employees' overtime costs will be at no expense to the contractor. The City will not require reimbursement for overtime hours worked by the City for inspection as detailed in the General Provisions if the conditions of this paragraph are met to the satisfaction of the engineer.

It is possible that other contractors or the City will be working in the project area during the time of construction. It shall be the responsibility of this contractor to coordinate its work with all other agencies and/or contractors within the project area.

## **1.7 QUALIFICATION OF CONTRACTORS**

### **A. QUALIFIED CONTRACTORS**

Only contractors with management, employees, and staff experienced in the type of work required by this specification, and with a record of successful completion of projects of similar scope, complexity, and overall cost will be considered. The bidder must complete the Contractor's Record of Prior Contracts form attached to this specification at the time of submitting their bid. The City will be the sole judge of the bidder's ability to meet the requirements of this paragraph. Bidders past work will be judged in complexity of job, time of completion, organization, and other factors that may indicate the abilities of the contractor.

Submit to the engineer within ten (10) calendar days following execution of the contract documents, a list of all subcontractors, including each subcontractor's address, telephone number, and contact person to be used on this project.

After completion of the project, an evaluation prepared on the form titled "Generation Contractor Performance Review" which is attached will be completed for the general and all subcontractors on this project. This form will be used to determine the adequacy of the work performed on this project including supervisor, quality of work, and adequate manpower and equipment, and the ability for the general or subcontractor to perform work for Tacoma Power in the future.

Any exception taken by any contractor to the comments on the form should be directed to the engineer within thirty (30) days of receipt. Failure to adequately respond to a poor evaluation within this time frame will be cause for rejection of future bids. The completed evaluation form will be shared with the contractor and subcontractors, but will be kept confidential by the City.

## B. QUALIFIED SUPERINTENDENT

The contractor shall employ a competent superintendent as referenced in Section 01040 – Project Coordination, Paragraph 1.14 – Superintendent.

### **1.8 SPECIFICATIONS AND DRAWINGS**

The following drawings, attached to these specifications (Appendix B), are made a part of the contract:

#### Drawings for Construction

<u>Drawing No.</u>	<u>Title</u>
RP 64	Tacoma Rail – Radio Monopole Site Plan
492110-P2RevG	Tacoma Public Utilities 138.0' Pole

### **1.9 EVALUATION OF BIDS**

The award of this contract will not be based on cost alone as other factors and features are equally important. The contract will be awarded to the lowest responsive and responsible bidder complying with the specifications; provided such bid is reasonable and it is in the best interests of the City to accept.

The City, however, reserves the right to reject any and all bids and to waive any informalities in bids received. The City reserves the right to let the contract to the lowest responsive and responsible bidder whose bid will be most advantageous to the City, price and any other factors considered.

All other elements or factors, whether or not specifically provided for in this contract, which would affect the final cost to and the benefits to be derived by the City will be considered in determining the award of the contract. In addition, the bid evaluation factors set forth in City Code Section 1.06.262 may be considered by the City. The conclusive award decision will be based on the best interests of the City. The engineer's decision as to which contractor best meets the City's need will be final.

In addition to General Provisions Section 1.08, the following factors may be used in bid evaluation:

- A. Experience and success of both company and superintendent completing at least three (3) projects of similar scope, complexity and overall cost.
- B. Past record with the City (including satisfying safety requirements).
- C. Bidder's responsibility based on, but not limited to:
  - 1. Ability, capacity, organization, technical qualifications and skill to perform the contract or produce the services required.
  - 2. Contractor's construction record including references, judgment, stability, adequacy of equipment proposed to be furnished.
  - 3. Whether the contract can be performed within the time specified.
  - 4. Quality of performance of previous contracts or services

## 1.10 LOCAL EMPLOYMENT AND APPRENTICESHIP TRAINING PROGRAM (LEAP)

Participation in LEAP is not required for this project. However, contractors are encouraged to volunteer in the LEAP Program. Following are the LEAP Program goals:

LEAP is a City of Tacoma economic development program adopted to provide employment opportunities for City of Tacoma residents on qualifying City funded projects. It requires the prime contractor or service provider performing a qualifying public works project or service contract to ensure that 15-percent of the total labor hours worked on the project are performed by apprentices approved by the Washington State Apprenticeship Council (SAC) and/or residents of Tacoma. Compliance may be met through any combination of utilizing residents of Tacoma or SAC apprentices on the project. Residents entering apprenticeships or other related training programs may be screened to work on City public works projects or service contracts.

Contractors/vendors may obtain further information by contacting the City's LEAP Contract and Program Auditor at 253-591-5826 or e-mail [leap@cityoftacoma.org](mailto:leap@cityoftacoma.org). The LEAP coordinator can assist contractors in the recruitment of qualified employees from the Private Industry Council and other pre-employment and training organizations available in the area. The LEAP Office is located in the Tacoma Municipal Building, 747 Market Street, Room 900, Tacoma, Washington 98402.

## 1.11 PREVAILING WAGES

In addition to the requirements of Section 3.09(B) of the General Provisions, the contractor shall be required to post on the job site a copy of the intent form to pay prevailing wages.

As identified in the General Provisions, the contractor shall comply with the law regarding prevailing wages. These rules apply to any contractor who does business with the City, including owner/operators.

A Statement of Intent to Pay Prevailing Wages **MUST** be filed with the Washington Department of Labor & Industries upon award of contract. An Affidavit of Wages Paid **MUST** be filed with the Washington Department of Labor & Industries upon job completion.

Payments cannot be released by the City until certification of these filings are received by the engineer. Additional information regarding these submittals can be obtained by calling the Department of Labor & Industries, Prevailing Wage at 360-902-5335, or by visiting their web site at:

<http://www.lni.wa.gov/tradeslicensing/prevailingwage/default.asp>

## 1.12 PERFORMANCE (SURETY), PAYMENT AND RETAINAGE BONDS

### A. PERFORMANCE (SURETY) AND PAYMENT BONDS

The Contractor shall provide both a Surety and Payment Bond for 100-percent of the total contract award within ten (10) calendar days after award of the contract in accordance with the General Provisions. These bonds shall be required for each contract awarded under this specification.

### B. RETAINAGE BOND

A 5-percent retainage bond may be provided in lieu of the City withholding five-percent retainage. If a retainage bond is not obtained, the City will withhold 5-percent retainage until the end of the contract. If a retainage bond is provided, the City form must be used.

Contractor shall provide notice of intent to provide retainage bond ten (10) days prior to first invoice. The City may elect to allow submission of retainage bond after the first payment at its discretion.

<b>END OF SECTION</b>
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## SECTION 01025 - MEASUREMENT AND PAYMENT

### 1.1 ADMINISTRATION

A one-time payment will be made for work that is required to be done in thirty (30) calendar days or less. A one-time payment will be made when the project is accepted as 100-percent complete except as provided for in Section – Surety Bond/Retainage. No partial payment will be made for materials or a portion of the work completed.

#### A. AUTHORITY

The City inspector or engineer in coordination with the contractor shall make all measurements and determine all quantities and amounts of work done for progress payments under the contract.

Modify Section 2.14 of the General Provisions as follows.

Invoices shall be mailed to the attention of:

Tacoma Power/Generation  
Business Systems  
3628 South 35th Street  
Tacoma, Washington 98409

**NOTE:** All questions regarding contract status or payments should be directed to the project engineer.

#### B. UNIT QUANTITIES SPECIFIED

Quantities indicated in the proposal are for bidding and contract purposes only. Quantities and measurements supplied or placed in the work and verified by the engineer and contractor determine payment.

Adjustments to contract prices due to changes in quantity shall be in accordance with the latest edition of the Standard Specifications, unless otherwise modified by this specification.

The City reserves the right to delete any bid item from the contract by notifying the contractor in writing of its intent. In the event of deleted work, the contractor's sole compensation shall be the money due the contractor for materials that had been purchased and obtained by the contractor prior to the deletion of the work.

#### C. CONTRACT PRICE

The lump sum and unit bid prices shall be full and complete compensation for the contract work stated, together with all appurtenances incidental thereto, including materials, equipment, tools, labor, and all the costs to the contractor for completing the contract in accordance with the plans, specifications, and instructions of the engineer.

All work not specifically described or mentioned in these specifications, but are required to be constructed to achieve complete and operable systems, structures or amenities shall be considered incidental items of work, not separately compensable, and its price included in items of work specified in the specifications.

#### D. NON-PAYMENT FOR REJECTED OR SURPLUS PRODUCTS

Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable
2. Products determined as unacceptable before or after placement
3. Products not completely unloaded from the transporting vehicle

4. Products placed beyond the lines and levels of the required work
5. Products remaining on hand after completion of the work
6. Loading, hauling and disposing of rejected products

#### E. WORK INCIDENTAL TO BID ITEMS

Work incidental to the bid items are described within each applicable proposal item listed in paragraph 1.2 – Proposal Items.

### **1.2 PROPOSAL ITEMS**

#### **1. MOBILIZATION/DEMOBILIZATION, PER LUMP SUM**

---

##### A. MEASUREMENT

Mobilization/Demobilization shall be measured per the lump sum (LS), not to exceed 20-percent of the base bid price.

##### B. PAYMENT

The lump sum (LS) contract price for Mobilization/Demobilization shall be full compensation for all labor, equipment, and materials to mobilize to the job site, preparation of work areas, demobilization, including clean up and site restoration. Phases of this job may require multiple mobilizations/demobilizations by some trades/subcontractors for grading, compaction, and other related site work. Mobilization/demobilization will only be paid once regardless of the number of mobilizations.

#### **2. REINFORCED CONCRETE DRILLED PIER**

---

##### A. MEASUREMENT

Reinforced Concrete Drilled Pier shall be measured per the lump sum (LS) for all labor, equipment, and materials required to construct one (1) reinforced concrete shaft foundation in accordance with the attached plans and specifications and as listed in the proposal.

Contractor shall take care not to damage existing structures and all underground utilities. If damaged, the contractor will be responsible for all repair costs as well as any liquidated damage associated with said damage including but not limited to costs associated with loss of revenue.

Cost for drilling, excavation, soil removal, shoring and slurry (if necessary), forming, reinforced steel, legal removal of excavated spoils, and coordination with project engineer for work under this contract to be performed on the Tacoma Rail property shall be considered incidental to this bid item.

##### B. PAYMENT

The lump sum (LS) price for Reinforced Concrete Drilled Pier shall be full compensation for all costs associated with this bid item.

#### **3. MONOPOLE INSTALLATION**

---

##### A. MEASUREMENT

Monopole Installation shall be measured per the lump sum (LS) for all labor, equipment and materials required to construct a 139-foot monopole and attachments in accordance with the attached plans and specifications.

Contractor shall take care not to damage existing structures. If damaged, the contractor will be responsible for all repair costs as well as any liquidated damage associated with said damage including but not limited to costs associated with loss of revenue.

## B. PAYMENT

The lump sum (LS) price for the Monopole Installation shall be full compensation for all costs associated with this bid item.

## **4. GROUNDING INSTALLATION**

---

### A. MEASUREMENT

Grounding Installation shall be measured per the lump sum (LS) for all labor, equipment and materials required to install the tower ground system in accordance with the specifications and Motorola R56 standards.

### B. PAYMENT

The contract price per lump sum (LS) for Grounding Installation shall be full compensation for all costs associated with this bid item.

## **5. FORCE ACCOUNT, PER LUMP SUM**

---

### A. MEASUREMENT

Measurement will be made for Force Account in accordance with Section 1-09.6 of the latest edition of the Standard Specifications for Road, Bridge and Municipal Construction of the Washington State Department of Transportation as modified by Force Account Work in the Special Provisions or on negotiated lump sum or unit price change orders added to the contract.

### B. PAYMENT

Payment shall be made for change order items added to the contract which shall be treated as a deduct to the force account remaining available.

"Force Account," as listed in the proposal

## **1.3 FORCE ACCOUNT WORK**

This section supersedes Section 3.10, Paragraph C of the General Provisions.

In certain circumstances, the contractor may be required to perform additional work. Where the work to be performed is determined to be extra and not attributed to the contractor's negligence, carelessness, or failure to install permanent controls, it shall be paid in accordance with the unit contract price or by force account.

Such additional work not covered by contract items will be paid for on a force account basis in accordance with Section 1-09.6 of the Standard Specifications or as a negotiated change order with lump sum or unit price items. For the purpose of providing a common proposal for all bidders and for that purpose only, the City has estimated the potential cost of force account work, and has entered the amount in the bid proposal to become a part of the total bid by the contractor. However, there is no guarantee that there will be any force account work.

## **1.4 NON-PAYMENT FOR REJECTED OR SURPLUS PRODUCTS OR WORK**

Payment will not be made for work rejected by the City. Products or work not meeting contract requirements shall be replaced by the contractor at no expense to the City, regardless of the impact to work, schedule or cost.

<b>END OF SECTION</b>
-----------------------



## SECTION 01040 - PROJECT COORDINATION

### 1.1 PROJECT ENGINEER/LEAD

The project engineer/lead shall be herein referenced as engineer in these specifications.

Construction management for this project with whom the contractor shall coordinate all their activities will be Mr. Kevin Smith at 253-355-6762 once the notice to commence work is issued. Any changes to these specifications or plans shall be approved by this engineer prior to commencing any work.

Bidder inquiries, regarding technical specifications, may be directed to Kevin Smith at 253-355-6762. For general purchasing provisions, contact Dawn DeJarlais, Purchasing, via email, at [ddejarlais@cityoftacoma.org](mailto:ddejarlais@cityoftacoma.org).

### 1.2 MEETINGS

#### A. PRE-BID MEETING

All bidders are invited to attend a pre-bid meeting on Tuesday, August 24, 2021, at 10:00 a.m. at the project site, 2601 State Route 509, N Frontage Rd, Tacoma, WA 98421. Email [ddejarlais@cityoftacoma.org](mailto:ddejarlais@cityoftacoma.org) to confirm attendance.

#### B. PRE-CONSTRUCTION MEETING

Following award of the contract, the engineer will notify the selected bidder of the time and date of the pre-construction meeting to be held at the project location or the Third Floor Engineering Conference Room, Tacoma Public Utilities Administration Building, 3628 South 35th Street, Tacoma, Washington.

Minutes of the pre-construction meeting will be sent to the contractor and all meeting attendees. Recipients of the pre-construction meeting minutes will be required to direct any comments or changes to these minutes to the engineer within seven (7) days from the date of receipt. If no changes or comments are received within the seven (7) days, the meeting minutes will be kept by the engineer and become part of the project file.

#### C. SITE MEETINGS

The engineer will schedule weekly meetings at the project site on an as-needed basis. Attendance is required of the contractor, site superintendent and major subcontractors at all such meetings. The engineer will notify the contractor of all required site meetings during the pre-construction meeting. Agenda will follow the same format as the pre-construction conference for applicable items.

Minutes of the weekly site meeting will be sent to the contractor and all meeting attendees. Recipients of the pre-construction meeting minutes will be required to direct any comments or changes to these minutes to the engineer within seven (7) days from the date of receipt. If no changes or comments are received within the seven (7) days, the meeting minutes will be kept by the engineer and become part of the project file.

### 1.3 PERMITS

The City has made application to the applicable authorities for the following permits:

#### A. City of Tacoma – Commercial Alteration

The contractor shall apply for, obtain and pay for all other required permits as set forth in Section 3.02 of the General Provisions.



## **1.4 FIELD ENGINEERING**

### **A. SURVEY REFERENCE POINTS**

The contractor shall protect survey control points prior to starting site work and preserve permanent reference points during construction.

Promptly report to the engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

Survey control damaged by the contractor shall be replaced by City forces and paid for by the contractor.

### **B. ESTABLISHED BY ENGINEER**

The engineer shall establish the lines and grades for location of the work items listed in the proposal, together with a suitable number of benchmarks adjacent to the work. Contractor's work shall conform to the horizontal and vertical controls unless deviations are obtained from the engineer.

The contractor shall keep the engineer informed in advance of the times they intend to do work, in order that lines and grades may be furnished. All requests for the survey crew to be at the job site shall require at least four (4) days advance notice to the engineer.

The engineer may adjust or relocate any portion of the project to meet site requirements or to improve the project without additional compensation to the contractor, provided such adjustments do not represent appreciable costs for additional labor and materials as determined by the engineer.

### **C. TO BE ESTABLISHED AND MAINTAINED BY CONTRACTOR**

After lines and grades for any part of the work have been given by the engineer, the contractor shall be held responsible for the proper execution of the work to such lines and grades, and all bench marks, reference points and stakes given shall be carefully preserved by the contractor until authorized by the engineer to remove them. The contractor shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points and stakes.

The contractor shall be financially responsible for additional stakeout performed by the engineer as required to replace survey reference points destroyed during construction.

The engineer reserves the right to check all work, have free access to all work, and shall have the full cooperation of the contractor in so doing.

## **1.5 COORDINATION WITH OTHERS**

### **A. OPERATION OF EXISTING FACILITIES**

The facilities or portions of facilities within the project limits must be kept in continuous operation throughout the construction period. No interruption will be permitted which adversely affects the degree of service provided. Provided permission is obtained by the City in advance, portions of the existing facilities may be taken out of service for short periods.

It is possible that other contractors or the City will be working in the project area during the time of construction. It shall be the responsibility of this contractor to coordinate its work with all other agencies and/or contractors within the project area.

All construction activities shall be coordinated daily with the engineer or their designated representative. Changes to the schedule that will impact on dates shown as milestones on the schedule shall be coordinated with the engineer on a daily basis.

The contractor shall become familiar with the ongoing operations and include all coordination required as part of the bid. The contractor shall follow all requirements of the City and do all coordination as part of the required work.

#### **B. SCHEDULE AND COORDINATION OF WORK**

The contractor shall coordinate scheduling, submittals, and all work specified herein to assure efficient and orderly sequence of the installation of interdependent construction elements with provisions for accommodating items installed later.

### **1.6 DIVISION OF WORK**

#### **A. MATERIAL FURNISHED AND INSTALLED BY CONTRACTOR**

The contractor shall furnish and pay for all necessary materials (except City-furnished) and shall provide all labor, tools, equipment and superintendent, and perform all work incidental to the completion of the project as contemplated by this contract in accordance with the plans, specifications, and instructions of the engineer.

Each subcontractor shall furnish and install all materials and equipment unless otherwise specified.

#### **B. CITY-FURNISHED MATERIAL INSTALLED BY CONTRACTOR**

All material received by the contractor shall become their responsibility and the contractor shall be liable for any materials lost or damaged after receipt.

The City will provide:

1. Anchor Bolts for Tower
2. 138-foot, 18-sided Monopole per plans
3. Eight (8) Pivot Arm Mounts for Antennas
4. One (1) Security Camera Pipe Mount
5. Climbing Pegs and Tuf-Tug Climb System
6. Adjustable Lightning Rod

It shall be the responsibility of the contractor to provide 48 hour notice prior to obtaining anchor bolts which will be delivered to the site. The project engineer will coordinate the delivery of the tower and provide the date to the contractor during the pre-construction meeting. All materials received by the contractor shall become their responsibility and they shall be liable for any material lost or damaged after receipt.

### **1.7 LIMITATION OF CONTRACTOR'S WORK AREA/OR CONTRACTOR'S USE OF PREMISES**

#### **A. BARRIERS**

Clearly mark work area to divide from area in City use.

#### **B. CITY OCCUPANCY**

The project and/or its surrounding area will be occupied/used by the City of on-going daily operations. The City will designate areas to be kept clear during all phases of construction during the pre-bid meeting.

#### **C. WORK BY OTHERS AND WORK BY CITY**

At the time of construction of the Tacoma Rail Monopole project, other contractors may be on site performing other construction projects. The contractor shall coordinate all activities with the City during the construction period.

## D. CONTRACTOR'S USE OF PREMISES

All requests for use of areas not designated for use by the contractor shall be made in writing to the engineer for approval at least four (4) days in advance of the need. The engineer shall approve those areas for use prior to use by the contractor.

All staging and work areas shall be submitted with bids for approval by the engineer.

### 1.8 HAZARDOUS MATERIALS

The City has tested areas of work to be disturbed during construction. The contractor is required to follow all local, state, and federal laws pertaining to the disturbance, removal, handling, storing, transporting, and disposal of all materials deemed hazardous by law.

All work shall be performed by workers certified by Washington State Department of Labor and Industries as having successfully completed a state approved training course. All work shall be in accordance with EPA Title 40 CFR.

See additional requirements in Specification Section 02102 – Waste Management.

### 1.9 CONTRACT CHANGES

The City has developed four (4) forms to facilitate and track communications with the contractor. These are the **Request for Information (RFI)**, **Engineering Change Directive (ECD)**, **Proposal Request (PR)**, and **Change Order Proposal (COP)**. These forms are included at the end of the Special Provisions.

The **Request for Information (RFI)** shall be used by the contractor whenever written direction on conflicts in plans, insufficient or unconstructable detail is shown, or any other issue which should be documented arises. The City may also use the form to inquire on contractor's methods, schedule or other issues not warranting more formal letter correspondence. The contractor shall maintain the numbering system and, as such, any issued by the City will be unnumbered until delivered to the contractor.

The **Engineering Change Directive (ECD)** shall be used by the City to transmit new or revised drawings, issue additions or modifications to the contract or furnish any other direction which should be documented. Directives are effective immediately. Should the contractor believe that such Directive should result in either a change in cost or time for the project, they shall notify the engineer prior to commencing such work and, if possible, submit a **Change Order Proposal** prior to the start of such work, but in no case, more than seven (7) days from receipt of said Directive.

In the event the City does not receive a **Change Order Proposal** from the contractor within seven (7) calendar days of the contractor's receipt of a Directive from the City, the contractor shall have no claim for extra cost or time or impacts attributable to the work required by the Directive. (Directives are numbered by the City.) Once the City and the contractor have established a price for the changes required by the Directive or any other request by the City for a change in the work, and a **Change Order Proposal** issues reflecting the agreed upon price, it is agreed and understood that the price reflected by the **Change Order Proposal** shall include all direct costs, indirect costs, and the contractor's estimate of impacts to its work, including but not limited to delay impacts, and shall represent a full and final settlement of all issues pertaining to the work required by the Directive, and work performed by the contractor up to the date of the **Change Order Proposal**.

The **Proposal Request (PR)** shall be used by the City to request pricing on a possible change in plans or additional work. The PR may also be used to request credits for deletion or changes in scope of work. The contractor shall respond to such requests with a **Change Order Proposal** within seven (7) days from receipt of said Request unless more time has been agreed to. Requests are numbered by the City.

The **Change Order Proposal (COP)** shall be used by the contractor to respond to City issued Proposal Requests, Engineering Change Directives or when the contractor believes that changed conditions or omitted, but necessary, work items exist. The COP may be used for requested changes in cost or time of the contract. COPs shall be numbered by the contractor, and, in the case of revision or resubmission of the same basic COP, the number shall be hyphenated with the letter "B", "C", etc.

## 1.10 DIFFERING SITE CONDITION

Differing site conditions shall be administered in accordance with Sections 1.04.5, 1.04.7, and 1.09.11 of the Standard Specifications except as stipulated in these Special and General Provisions. Contractor shall have no claim for additional costs or work, if it fails to submit a written RFI to the City immediately upon encountering any differing site condition, conflicts in the plans, specifications, or constructability issues.

The contractor shall promptly, and before conditions are disturbed, notify the engineer or their field representative of problems with subsurface conditions at the site, problems or conflicts in the plans or specifications or problems on constructability. A written **Request for Information (RFI)** shall be submitted by the contractor when such problems and direction are required.

The engineer shall promptly investigate the conditions, and if agreed upon with the contractor, adjustment shall be made on the appropriate details in writing to facilitate construction. The response may be on the **RFI** or may necessitate an **Engineering Change Directive (ECD)** or **Proposal Request (PR)**. No claim by the contractor under this differing site condition shall be allowed except as agreed upon in writing with the engineer.

Whenever possible, should the City desire extra work to be performed a **Proposal Request (PR)** shall be sent to the contractor.

Whenever possible, the contractor shall submit in advance and in writing, a **Change Order Proposal (COP)** for changes in the scope of work and/or contract amount. This proposal shall be either accepted or rejected in writing by the project engineer prior to work commencing. When no agreement can be reached, the City may order extra work on force account.

When time is short, the contractor shall notify the City extra work is required or the City shall notify the contractor that extra work is needed and at a minimum, the engineer shall issue a handwritten **Engineering Change Directive**. In such cases, said handwritten **Directive** will not be considered as agreement that such work is extra. Within seven (7) days, the contractor shall submit a written **Change Order Proposal** for changes in the scope of work and/or contract amount.

## 1.11 CONSTRUCTION PROGRESS SCHEDULES

### A. FORMAT

The contractor shall prepare schedules as a horizontal bar chart with separate bar for each major portion of work or operation, identifying the first work day of each week and include holidays and times when facility will not be available to contractor for City installed work.

### B. CONTENT

This schedule shall be activity-oriented showing as nearly as can be determined the starting and completion dates of each event. The schedule shall show the materials delivery, structure erection, and installation. It will include the start and completion of each area of work.

Show complete sequence of construction, by activity, with dates for beginning and completion of each element of construction.

Identify each task by the appropriate proposal bid item number and subcontractor responsible.

#### C. SEQUENCE SCHEDULING

It shall be the contractor's responsibility to properly phase in all work specified herein including all work done by subcontractors.

#### D. SUBMITTALS

The contractor shall submit initial schedules at the preconstruction meeting or at a minimum of within five (5) working days after the contract award. After review, if changes are required by the engineer, resubmit required revised data within five (5) working days.

The contractor shall use the attached Submittal Transmittal form (electronic version is available from the engineer) for all submittals.

Within ten (10) days of the date of the contract, the contractor and the engineer will reach an agreement on any and all adjustments and all modifications to the submitted schedule which are warranted. The schedule, thus modified, will become part of the contract.

The failure of the contractor to submit a schedule(s), or the inability of the contractor and the City to reach an agreement as to modifications to a schedule, shall not excuse the contractor's obligation to perform the work required by the specifications in the number of days required by the specification.

### **1.12 PROTECTION OF EXISTING UTILITIES AND IMPROVEMENTS**

In addition to Section 3.03 "Notification of Other Governmental Agencies and Utilities When Underground Work is Involved" and Section 3.07 "Protection of Workers and Property" of the General Provisions:

The contractor shall protect from damage the utilities and all other existing improvements not provided for in the proposal or special provisions. The cost of labor, equipment and materials required to protect or replace said items shall be incorporated into the bid for this project.

The City has attempted to locate and show on the contract drawings the locations of the existing underground utilities which may conflict with portions of this work, but cannot guarantee the accuracy or the completeness of the data shown.

### **1.13 CITY OCCUPANCY**

The City reserves the right to use or to occupy any substantially completed part of the project, and to use equipment installed under the contract prior to the date of final acceptance. Such use of occupancy shall not constitute acceptance of the work, or any part thereof.

### **1.14 SUPERINTENDENT**

The contractor shall employ a competent superintendent (foreman) who shall be present at the project site at all times during the entire progress of the work, except those times when the contractor is demobilized. The superintendent shall be on site even when only a subcontractor is working, unless otherwise approved by the engineer. The foreman shall be satisfactory to the contractor, and shall have full authority to act on their behalf.

It will be the foreman's responsibility to have a set of plans and specifications on the project site during the progress of the work. The foreman shall mark or record on the plans all changes made during construction. Such redline "AS-BUILT" plans shall be available to the engineer at all times and shall be delivered to the engineer upon completion of the work.

The superintendent initially assigned to the project by the general contractor shall remain superintendent for the duration of the contract. If the superintendent is replaced, all work shall stop until an additional preconstruction meeting with the City is held. This work stoppage will be at the contractor's expense. The completion date shall remain unchanged, regardless of any work stoppage.

## **1.15 CLEAN UP**

In addition to Section 3.11 - Cleaning Up of the General Provisions

### A. DAILY

The contractor and the City inspector will walk the site daily and as required to determine the clean up and restoration required.

All areas shall be left safe, clean and free of debris.

Surplus excavation, conduit material, tools, temporary structures, dirt and rubbish shall be removed and disposed of by the contractor, and the construction site shall be left clean to the satisfaction of the engineer.

Clean up is considered incidental to the project and no payment will be allowed.

Collect waste daily and when containers are full, legally dispose of waste off site.

Clean-up of any area impacted by the construction shall be done weekly or as directed/instructed by the engineer.

<b>END OF SECTION</b>
-----------------------



## CHANGE ORDER PROPOSAL (COP)

(This form shall be used by the contractor to respond to City issued Proposal Requests, Engineering Change Directives or when the contractor believes that changed conditions or omitted, but necessary, work items exist. The COP may be used for requested changes in cost or time of the contract.)

COP No.:

(Contractor Assigns)

REF. Doc.:

(Initiating a RFI, ECD or PR)

Date: \_\_\_\_\_

Project Title: \_\_\_\_\_

Specification No.: \_\_\_\_\_ Contract No.: \_\_\_\_\_

### Contractor:

### Owner:

Tacoma Power/Generation  
3628 South 35<sup>th</sup> Street  
Tacoma, WA 98409

Title: \_\_\_\_\_

☐ Architectural ☐ Civil ☐ Structural ☐ Mechanical ☐ Electrical ☐ Other

### Scope of Change:

Initiated By: \_\_\_\_\_ Representing: \_\_\_\_\_  
(Name) (Company)

Cost/Credit: \_\_\_\_\_ Time Extension Request: \_\_\_\_\_

Attachment Type: \_\_\_\_\_  
(Supporting Documentation)

*This change order proposal shall include ALL labor, material, equipment, subcontractor costs, mark-ups including overhead, profit, any other direct and/or indirect costs, and any requests for additional time associated with the change in the scope of work.*

### City's Response:

Action: ☐ Approved ☐ Unapproved ☐ Revise and Resubmit (Select only one)

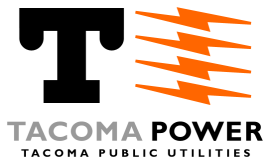
*Prior to any extra work the contractor shall submit a written **Change Order Proposal (COP)**. See Section 01040, Contract Changes, of the specification for this Contract.*

Response By: \_\_\_\_\_ Attachment Type: \_\_\_\_\_  
(Name) (Supporting Documentation)

Representing: \_\_\_\_\_ Response Date: \_\_\_\_\_  
(Company) (Date)

Cc:





## ENGINEERING CHANGE DIRECTIVE (ECD)

(This form shall be used by the City to transmit new or revised drawings, issue additions or modifications to the contract or furnish any other direction which should be documented.)

ECD No.:  (City Assigns)

Date: \_\_\_\_\_

Project Title: \_\_\_\_\_

Specification No.: \_\_\_\_\_ Contract No.: \_\_\_\_\_

**Contractor:**

**Owner:**

Tacoma Power/Generation  
3628 South 35<sup>th</sup> Street  
Tacoma, WA 98409

Title: \_\_\_\_\_

☐ Architectural   ☐ Civil   ☐ Structural   ☐ Mechanical   ☐ Electrical   ☐ Other

**You are hereby directed to make the following modification(s) in the Scope of Work in this Contract:**

*This document becomes effective upon receipt by the Contractor, with signature of an approved City representative. The Contractor shall then commence with modifications(s) listed above.*

Attachment Type: \_\_\_\_\_  
(Supporting Documentation)

Initiated By: \_\_\_\_\_  
(Name)

Representing: \_\_\_\_\_  
(Company)

**Contractor's Response:**

This ECD:   ☐ Will Not   ☐ May   ☐ Will   (select one box only) result in a claim by the Contractor.

*Prior to any extra work the contractor shall submit a written **Change Order Proposal** (COP). See Section 01040, Contract Changes, of the specification for this Contract.*

Attachment Type: \_\_\_\_\_  
(Supporting Documentation)

Response By: \_\_\_\_\_  
(Name)

Response Date: \_\_\_\_\_  
(Date)

Representing: \_\_\_\_\_  
(Company)

Cc:





## REQUEST FOR INFORMATION (RFI)

(This form shall be used by the contractor whenever written direction on conflicts in plans, insufficient or unconstructable detail is shown, or any other issue which should be documented arises; or by the City when additional clarification is required.)

RFI No.:  (Contractor Assigns)

Date: \_\_\_\_\_

Project Title: \_\_\_\_\_

Specification No.: \_\_\_\_\_ Contract No.: \_\_\_\_\_

**Contractor:**

**Owner:**

Tacoma Power/Generation  
3628 South 35<sup>th</sup> Street  
Tacoma, WA 98409

Subject: \_\_\_\_\_

☐ Architectural ☐ Civil ☐ Structural ☐ Mechanical ☐ Electrical ☐ Other

**Requested Information:**

Attachment Type: \_\_\_\_\_ Initiated By: \_\_\_\_\_  
(Supporting Documentation) (Name)

Response Required: \_\_\_\_\_ Representing: \_\_\_\_\_  
(Date) (Company)

**Response:**

Attachment Type: \_\_\_\_\_ Response By: \_\_\_\_\_  
(Supporting Documentation) (Name)

Representing: \_\_\_\_\_  
(Company)

Prior to any extra work the contractor shall submit a written **Change Order Proposal (COP)**. See Section 01040, Contract Changes, of the specification for this Contract.

Response Date: \_\_\_\_\_  
(Date)

**City Approval:**

The owner (Tacoma Power) reviewed the foregoing request and finds the response to be in order.

Project Engineer: \_\_\_\_\_ Response Date: \_\_\_\_\_  
(Name) (Date)

Cc:



## PROPOSAL REQUEST (PR)

(This form shall be used by the City to request pricing on a possible change in plans or additional work. The PR may also be used to request credits for deletion or changes in scope of work.)

PR No.:

(City Assigns)

Date: \_\_\_\_\_

Project Title: \_\_\_\_\_

Specification No.: \_\_\_\_\_ Contract No.: \_\_\_\_\_

**Contractor:**

**Owner:**

Tacoma Power/Generation  
3628 South 35<sup>th</sup> Street  
Tacoma, WA 98409

Subject: \_\_\_\_\_

☐ Architectural   ☐ Civil   ☐ Structural   ☐ Mechanical   ☐ Electrical   ☐ Other

**Scope of Request:**

Attachment Type: \_\_\_\_\_

(Supporting Documentation)

***This is not a change order or a notice to proceed with the described work. Prior to any extra work the contractor shall submit a written **Change Order Proposal** (COP). See Section 01040, Contract Changes, of the specification for this Contract.***

Initiated By: \_\_\_\_\_

(Name)

Representing: \_\_\_\_\_

(Company)

Cc:

# CONTRACTOR SUBMITTAL TRANSMITTAL

Submittal No.:

(Contractor Assigns)

Date: \_\_\_\_\_

Project Title: \_\_\_\_\_

Specification No.: \_\_\_\_\_ Contract No.: \_\_\_\_\_

**Contractor:**

**Owner:**

Tacoma Power/Generation  
3628 South 35<sup>th</sup> Street  
Tacoma, WA 98409

**Subject:** \_\_\_\_\_

☐ Architectural ☐ Civil ☐ Structural ☐ Mechanical ☐ Electrical ☐ Other

**Sending the Following Item(s):**

☐ Submittals ☐ Product/Data ☐ Samples ☐ Plans ☐ Shop Drawings ☐ Copies  
☐ Specifications ☐ Contract ☐ Other: \_\_\_\_\_

Copies	Section	Description of Product/Data	Manufacturer

**Transmitted as:**

☐ For Approval ☐ For Your Use ☐ Per Your Request ☐ For Review and Comment  
☐ Other: \_\_\_\_\_

**Remarks:**

**For Use by Architect/Engineer:**

☐ No Exception Taken ☐ Make Corrections Noted ☐ Revise and Resubmit ☐ Rejected (See Response)

*Corrections or comments made on the shop drawings during this review do not relieve Contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other contractors and agencies performing his work in a safe and satisfactory manner.*

Response Date: \_\_\_\_\_ Response By: \_\_\_\_\_  
(Date) (Name)

## **SECTION 01300 - SUBMITTALS AND SHOP DRAWINGS**

### **1.1 SUBMITTALS REQUIRED/REQUESTED WITH BID**

In addition to the items listed in the Bidders Checklist, the bidders **shall** submit with their bid package the following information. This information may be used for evaluation purposes.

1. Experience and success of both company and superintendent completing at least three (3) projects of similar scope, complexity, and overall cost. A detailed list of comparable projects with current list of contacts shall be submitted with the bids.

### **1.2 DOCUMENTS REQUIRED AT PRECONSTRUCTION CONFERENCE**

- A. Work Hazard Analysis Report as required in Paragraph 3.06(B) of the General Provisions.
- B. Construction Schedule as required in Section 01040 – Project Coordination.
- C. List of Subcontractors, including each subcontractor's address, telephone number, and contact person to be used on this project.
- D. Name of Job Superintendent.
- E. List of Number and Names of Workers, Equipment List, and Working Site Layout or Requirements.
- F. List of Products.

### **1.3 SUBMITTALS AND SHOP DRAWINGS DURING CONSTRUCTION**

Submittals and shop drawings submitted to the City as specified herein are intended to show compliance with the contract documents. Signatures, corrections or comments made on submittals do not relieve the contractor from compliance with requirements of the drawings and specifications. Neither does acceptance or approval of submittals by signature add to or delete from any contract requirements resulting from these specifications regardless of the wording of the submittals. Submittals will not be reviewed or approved when the term "By Others" is used. Submittals are reviewed or approved for general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating their work with that of other contractors and agencies, and performing their work in a safe and satisfactory manner. Piece-mealing of submittals will not be accepted.

#### **A. PRODUCT DATA**

1. Submittal Procedures: Submit for engineer review in accordance with submittal procedures specified in this section. After review, distribute to subcontractors and other applicable entities. Maintain one (1) copy for project record documents to be delivered to engineer at project completion.
2. Identification: Mark each copy to identify specific products, models, options, tolerances, dimensions, and other pertinent data.
3. Manufacturer's Standard Data: Modify drawings and diagrams to delete inapplicable information. Supplement to provide pertinent information unique to project.

**END OF SECTION**

## SECTION 01400 - QUALITY CONTROL

### 1.1 REFERENCE STANDARDS

Reference to standards, specifications, manuals or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest Standard Specification manual, code, or laws or regulations in effect at the time of opening of bids (or on the effective date of the agreement if there were no bids), except as may be otherwise specifically stated. However, no provision of any referenced standard, specification, manual, or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of City, contractor, or engineer, or employees from those set forth in the contract documents.

Any part of the work not specifically covered by these specifications shall be performed in accordance with the applicable section of the latest Edition of the "Standard Specifications for Road, Bridge and Municipal Construction" as prepared by the Washington State Department of Transportation and the Washington State Department of Public Works Association (APWA) as amended by the latest APWA Amendment No. 1 and the latest City of Tacoma Amendment No. 1.

These specifications will herein be referred to as the Standard Specifications.

### 1.2 INSPECTION, TESTING AND CERTIFICATION

#### A. INSPECTION

Construction inspection and testing for the City will be performed by a representative as the City may designate, or as the construction situation may dictate. The City inspector will be responsible for insuring that the contractor is complying with the contract plans and specifications.

1. The City will prepare a construction inspection checklist to be presented to the contractor at the preconstruction meeting. The checklist will include all inspections typically required by local, city and county officials as well as other items as deemed important by the engineer.
2. The contractor shall be required to contact the City 24 hours in advance of all of the construction activities listed on the checklist, have the indicated activity inspected, and the City's inspector initial that the work was performed in accordance with the appropriate technical provision.
3. Pre-final Inspection: Contractor shall notify the engineer in writing when all work or portions of work are complete and ready for inspection. The engineer will make a "punchlist" and forward the results of same to the contractor who shall promptly correct any deficiencies noted.
4. Final Inspection: Contractor shall notify the engineer in writing when all punchlist deficiencies have been completed. The engineer will promptly set a time for final inspection at which time the engineer and contractor shall jointly inspect the work. The contractor will promptly correct any further deficiencies noted.

#### B. LABORATORY SERVICES

Testing for quality control certification or special inspections as required by the permitting authority will be conducted by Tacoma Power and/or an independent laboratory which will be furnished and paid for by the City. Subsequent sampling and testing of rejected material shall be paid for by the contractor.

Failure of the material to achieve the specified density or standards will be just cause for rejecting any portion of, and/or all of the material represented by the test. All costs associated with replacement materials or any delays caused by such failure shall be borne by the contractor.

It shall be the contractor's responsibility to prepare test specimens as required for special inspection as required by the permitting authority or the engineer and the cost shall be incidental to the contract.

#### C. PERMIT INSPECTIONS

The contractor shall comply with the requirements of all permits. It shall be the contractor's responsibility to contact the permitting authority and schedule all required inspections. The contractor shall notify the Tacoma power inspector of all scheduled inspections.

<b>END OF SECTION</b>
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## **SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

### **1.1 UTILITIES**

#### A. ELECTRIC SERVICE

Power will not be provided for this project.

#### B. TELEPHONE SERVICE

The City will not provide telephone service for the contractor. Mobile telephone service is available at the site.

#### C. WATER

The City will not provide water to the contractor for this project.

#### D. SANITARY FACILITIES

The contractor can use the rest rooms available in the locker room of the project office or sani-cans in the parking lot near the work site. Coordinate use of these rest rooms with the project manager to ensure they are kept clean. Should the contractor fail to maintain the rest rooms, the contractor will be required to furnish sani-cans at their own expense.

### **1.2 JOB SHACK**

#### A. JOB SHACK

The contractor shall supply a job shack where construction plans shall be kept. The shack shall be large enough to keep "**AS-BUILT**" plans and provide access to City inspectors and engineers as required.

The contractor shall keep on the job site a full size copy of the drawings and specifications, and shall at all times give the engineer access thereto.

#### B. STORAGE AREA

An area is available for material storage. This area is available for inspection prior to submittal of bids. This material storage area will be required to be used for storage of all construction material with lead time requirements that is required to be on hand at start of construction. Any modification of the storage area for the convenience of the contractor shall be at the contractor's expense and shall be approved by the engineer. Contractor may use an alternate area for storage of lead time material providing it is at the contractor's expense and available to the engineer for inspection to verify availability.

### **1.3 ROADWAY AND TRAFFIC CONTROL**

#### A. TRAFFIC COORDINATION

All traffic controls on this project shall adhere to the latest edition of the "Manual on Uniform Traffic Control Devices." Adequate access shall be provided for local and emergency vehicular traffic through the project area at all times.

#### B. TRAFFIC SIGNS AND SIGNALS

The contractor shall be responsible for all temporary signing or barricades placed at the job site to control traffic and protect the public from construction areas.

The supply, placement, and maintenance of all traffic controls shall be the responsibility of the contractor and shall be in accordance with the "Manual on Uniform Traffic Control Devices."

## **1.4 SECURITY AND ACCESS**

### **A. SECURITY PROGRAM**

Contractor shall comply with Tacoma Rail's security policies and procedures and take adequate precaution to protect Tacoma Rail's property and employees.

### **B. ENTRY CONTROL**

1. Procedures for the entry and exit of contractor's personnel and materials shall be determined at the preconstruction meeting.
2. Contractor shall maintain a current list of contractor and subcontractor personnel available for on-site inspection.

### **C. RESTRICTIONS AND OPERATIONAL CONTROL**

1. Access for Materials: Every effort shall be made to deliver materials to the construction area during the hours of 7:00 a.m. to 5:00 p.m.
2. Contractor Operations: Access shall be restricted to the immediate work area and access route identified to be used during construction. Contractor shall confine personnel to the immediate work vicinity while on site.
3. Emergency Site Access during Construction: Fire lanes must remain open during construction.

## **1.5 SAFETY**

In addition to Paragraph 3.06 "Safety" of the General Provisions, the contractor shall:

### **A. WORK HAZARD ANALYSIS**

The contractor and their subcontractors shall thoroughly review the scope of work of the proposed project. The contractor will be responsible to indicate a work hazard analysis on the form of "Contractor's Work Hazard Analysis Report" attached with the proposal; i.e., any known or potential safety issues or phases of construction that may require specific safety procedures as identified by WISHA or OSHA regulations, and/or prudent construction practices; i.e., shoring, fall protection, scaffolding, hazardous materials, asbestos removal, etc.

This report shall be completed and submitted to the engineer before the preconstruction conference. A copy of this report will be forwarded to the City Safety Officer for review. A copy of this report shall be maintained at the work site (accessible to the supervisor).

The City will review the submitted report and may require the contractor to clarify their safety procedures submitted or detail their procedures for ensuring safe working conditions for other working conditions not listed in the original submitted report; and/or explain how the procedures meet current safety regulations. In no case, may the contractor commence work until the Job Hazard Analysis Report has been reviewed and approved by the engineer.



## **B. WORKING CLEARANCES**

The City will instruct all workers, who may be present for the duration of the contract, as to the safety requirements of working in a railyard. Anyone working on the site shall be required to take a training class through [contractororientation.com](http://contractororientation.com). After the class, all personnel will be required to sign a form stating that they understand the requirements of working in a railyard. No workers, other than those who attended the safety class, will be allowed to work on the site. Should the contractor fail to meet any of the criteria discussed in the safety meeting, the City reserves the right to have an inspector present to ensure compliance or terminate the contract. The cost for all inspection required, due to failure to meet safety standards, shall be deducted from the contract amount.

## **C. WORK REQUIRING AN OUTAGE ON RAIL LINES**

The successful bidder shall maintain and enforce safety rules and regulations that are applicable to this type of work. If the nature of work demands a planned outage of rail lines, the contractor shall work with the Engineer and Tacoma Rail to define the outage. Planned outages and working clearances will be obtained and held by the City construction and maintenance inspector.

The contractor's request for a planned outage shall be submitted to the City construction and maintenance inspector or engineer ten (10) days prior to scheduling any work.

## **1.6 PROTECTION OF ADJACENT AREAS DURING CONSTRUCTION**

The contractor shall take any measures, including but not limited to the ones listed below, to protect adjacent areas from the affects of construction.

Installing temporary walls or barriers to completely divide or separate the work area from ongoing Tacoma Rail operations may be necessary. Visqueen or plastic shall be a minimum of 8 mil thick and shall form a continuous barrier sufficient to stop all construction dust and residue.

Other work and barrier requirements as directed by the engineer to provide separation between the contractor's work area and ongoing Tacoma Rail operations may be required.

Daily, morning (pre-shift) and afternoon (end of shift) job briefings with Tacoma Rail Mechanical staff will be required throughout the duration of the project.

## **1.7 DUST CONTROL**

The contractor shall take reasonable measures to prevent unnecessary dust while drilling. Earth surfaces subject to dusting shall be kept moist with water or by application of a chemical dust suppressant. Dusty materials in piles or in transit shall be covered when practicable to prevent blowing.

## **1.8 TEMPORARY DRAINAGE PROVISIONS**

Contractor shall provide for the drainage of storm water and such water as may be applied or discharged on the site in performance of the work. Drainage facilities shall be adequate to prevent damage to the work, the site, and adjacent property.

## **1.9 POLLUTION CONTROL**

Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris, or other substances will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

The contractor shall maintain oil absorption pads on the actual job site whenever any equipment is present to immediately catch and contain any oil and/or fuel leaks.

Nothing in this specification or contract shall be deemed to warrant to the contractor the quality, quantity or usefulness of the property designated for demolition, not designated as salvage, or designated to become the property of the contractor.

Contractor shall abide by requirements set in the Stormwater Pollution Prevention Plan (SWPPP) for the Tacoma Rail Facility attached in Appendix D.

<b>END OF SECTION</b>
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## SECTION 01600 - MATERIAL AND EQUIPMENT

### 1.1 QUALITY OF WORKMANSHIP AND MATERIAL

#### A. WORKMANSHIP

The contractor shall employ only competent, skillful, and **orderly** persons to do the work. If, in the engineer's opinion, a person is incompetent, **disorderly** or otherwise unsatisfactory, the engineer shall notify the contractor, in writing, of same. The contractor shall immediately discharge such personnel from the work and shall not again employ those person(s) on said contract again. Work shall conform to the highest industry standards.

See General Provisions, Paragraph 3.08 - Contractor - Supervision and Character of Employees for additional requirements.

#### B. MATERIALS

Materials shall be delivered to the project site in the manufacturer's original containers, bundles or packages unopened with the seals unbroken and the labels intact. Each type of material shall be of the same make and quality throughout. Manufactured articles, materials and equipment shall be installed in accordance with each manufacturer's written directions, unless otherwise specified.

All materials and equipment to be provided under this contract shall conform to the latest edition of the applicable codes, but in no case shall be contrary to the laws of the State of Washington and/or Federal Government.

The equipment supplied shall meet appropriate ANSI, OSHA, WISHA, and all Federal, state, and local standards for the type of equipment provided for its intended use.

Deliver, store and handle products according to manufacturer's written instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces.
2. Deliver with labels and written instructions for handling, storing, protecting, and installing.
3. Inspect products at time of delivery for compliance with the contract documents and to ensure items are undamaged and properly protected.
4. Store heavy items in a manner that will not endanger supporting construction.
5. Store products subject to damage on platforms or pallets, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation.

### 1.2 NONSALVAGEABLE MATERIAL

#### A. PROPERTY OF CONTRACTOR

Demolition, not indicated for salvage, becomes property of contractor. Removed from site at contractor's expense to a legal waste site obtained by the contractor

Materials deemed to be non-salvageable by the engineer's representative shall be disposed by the contractor to a legal dump site obtained by him. All costs to dispose of non-salvageable materials shall be the contractor's responsibility.

**END OF SECTION**

## **SECTION 01700 - CONTRACT CLOSEOUT**

### **1.1 DOCUMENTS REQUIRED UPON COMPLETION OF WORK**

#### **A. CLOSE OUT PROCEDURES**

The contractor shall notify the engineer in writing when identified tasks are complete and ready for inspection. The engineer will make the inspection, forward the results of same to the contractor, who shall promptly correct any deficiencies noted.

The contractor shall notify the engineer in writing when all punchlist deficiencies have been completed. The engineer will promptly set a time for final inspection, at which time the engineer and the contractor shall jointly inspect the work. The contractor will promptly correct any deficiencies noted.

It is possible that other contractors or Rail employees will be working in the project area during the time of construction. It shall be the responsibility of this contractor to coordinate their work with all other agencies and/or contractors within the project area.

#### **B. FINAL DOCUMENTATION**

Upon completion of the work and before final payment is made, the contractor shall deliver to the engineer, in addition to such other items specified in these specifications, the following documents:

1. Drill Logs

Contractor shall submit a drill log for the hole drilled. Drill log shall document field conditions encountered. Log shall be clear, easily read, and neatly organized.

2. Final Clean Up

- a. Leave the entire site perfectly clean and ready to use.
- b. Removal of all temporary facilities and contractor equipment.
- c. Clean the site. Sweep paved areas and walkways. Remove stains, spills, and foreign deposits. Rake grounds to a smooth, even textured surface.

All surfaces disturbed shall be restored to a condition equal to that before the work began.

Surplus material, tools, temporary structures, dirt and rubbish shall be removed and disposed of by the contractor, and the project area shall be left clean to the satisfaction of the engineer.

Clean up is considered incidental to the project and no measurement and payment will be allowed.

Obtain final inspections from authorities having jurisdiction.

**END OF SECTION**

## **DIVISION 2 – SITE CONSTRUCTION**

### **SECTION 02101 – SOILS AND STORMWATER MANAGEMENT**

#### **PART 1 GENERAL**

##### **1.1 SECTION INCLUDES**

The activities in this section shall include all work that will require handling, storage, sampling, disturbance, removal, transportation, waste designation, and/or disposal of soils.

- A. This section is to establish minimum practices to be used for the excavation, management, and disposal of soils that may be encountered, and/or generated by the contractor.
  - 1. All soils that designate as non-hazardous solid waste and that are generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-350.
  - 2. All soils that designate as a hazardous material and/or waste, and are generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-303.
- B. The contractor shall assume the following:
  - 1. Areas of excavation within the project area may contain contaminants. As such soils may require additional sampling and analysis by the contractor for determination of proper handling and disposal requirements as prescribed in paragraph B.2.
  - 2. All areas where soils will be removed, must be evaluated for potential contaminants of concern prior to beginning excavation. Soil evaluation will be consistent with the guidance and requirements identified by the Tacoma-Pierce County Health Department (TPCHD) Waste Disposal Authorization (WDA) Required Analysis/Analysis Conducted (RA/AC) standards (<https://www.tpchd.org/home/showpublisheddocument/946/637436342126170000>).
  - 3. The cost of removal, handling, storage, sampling, analysis, transportation, and disposal of contaminated soils and/or hazardous wastes as part of the execution of this contract shall be incidental to the specific proposal item.

##### **1.2 MANAGEMENT AND ANALYSIS OF WASTES**

###### **A. SOILS**

- 1. The contractor shall be responsible for the testing all soils that will be removed from the site following excavation activities to ensure appropriate handling, transportation, and disposal. Any deviation to this approach must be described in detail within the Contractor prepared "Soils Management Plan". If an alternative soil handling method is proposed the City of Tacoma Project Manager and TPCHD must review and approve the plan prior to any soil work starting.
  - a. Two samples of drill spoils from the excavation area were previously collected on February 26, 2020. The laboratory analytical report for these soil samples has been included in this bid spec, see Appendix E.

2. Soils must be sampled in accordance with the TPCHD WDA RA/AC standards (<https://www.tpchd.org/home/showpublisheddocument/946/637436342126170000>).
3. All samples must be transported to a Washington State Department of Ecology accredited laboratory for analysis via EPA Method SW846 - 6010B. Supplemental sampling and analysis may be required if the contractor has reason to suspect that additional contamination may be present. Refer to the aforementioned TPCHD WDA RA/AC standards for parameters and required analytical methods.
4. Unless determined otherwise through laboratory sampling results, all soils must be managed as a hazardous waste and handled in accordance with the standards in WAC 173-303.
5. If determined to be non-hazardous, soils may be managed in accordance with the standards in WAC 173-350.
6. Permits, profiles or WDAs are the responsibility of the contractor and must be secured for any soils that are removed from the site and transported for disposal.
7. The contractor shall report all hazardous and non-hazardous waste determinations and proposed soil disposal locations with the engineer prior to any soil transportation and/or disposal efforts are performed.

### **1.3 CODES, LAWS AND REGULATIONS**

The following laws, codes, and regulations shall be followed for the removal of soils, hazardous materials, and stormwater management:

- A. Washington State Department of Labor and Industries Chapters 296-155 WAC, 296-24 WAC, 296-62 WAC
- B. Washington State Department of Ecology Chapters 173-303 WAC, 173-304 WAC, 173-350 WAC
- C. Code of Federal Regulations Chapters 29 and 40.
- D. City of Tacoma Stormwater Management Manual

## **PART 2 EXECUTION**

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### **2.1 GENERAL**

#### **A. SOILS**

1. The contractor shall develop a Soil Management Plan for each work area where soils will be excavated, managed, and/or disturbed.
  - a. The Soil Management Plan shall include an assessment of all potential contaminant sources (present and historical) and address all aspects of the environment local to the job site.
  - b. Based upon the potential contaminant sources, the contractor shall submit a Sampling and Analysis Plan (SAP) identifying sampling locations and proposed laboratory analyses to the engineer prior to commencement of work.

- b. All samples must but be transported to a Washington State Department of Ecology accredited laboratory for analysis via EPA Method SW846 - 6010B. Supplemental sampling and analysis may be required if the contractor has reason to suspect that additional contamination may be present. Refer to the aforementioned TPCHD WDA RA/AC standards for parameters and required analytical methods.
- c. The contractor shall utilize all data generated via the SAP to characterize any soils that may be reused or transported from the site for disposal. All proposed waste characterizations will be submitted to the engineer prior to any waste transportation and/or disposal efforts are performed
- d. The contractor shall be responsible for the application and management of all necessary waste management, transportation, and disposal permits.
- e. The contractor shall be responsible for all logistics and coordination with disposal vendors, transportation providers, and disposal locations.
- f. Upon completion of work, including demobilization, the contractor shall prepare a Post-Soil Management Plan, which provides a summary of the actions performed, and identifies any issues encountered. The Post-Soil Management Plan shall be submitted to the engineer upon completion of operations.
- g. The City will not make final payment for work until the engineer has received and reviewed the Post-Soil Management Plan.

#### B. STORMWATER

- 1. The Contractor shall be responsible for meeting all appropriate City of Tacoma stormwater permit and Stormwater Management Manual requirements both during construction and for post-construction stormwater mitigation.

<b>END OF SECTION</b>
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## **SECTION 02102 – WASTE MANAGEMENT**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

The activities in this section shall include all work that will require handling, storage, sampling, disturbance, removal, transportation, designation, and/or disposal of hazardous materials and hazardous wastes which may include; soil and hazardous substances.

- A. This section is to establish minimum practices to be used for the generation (including soil excavation), handling, storage, and disposal of potentially hazardous materials that may be encountered, and/or generated by the contractor.
  - 1. All non-hazardous solid wastes generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-350.
  - 2. All hazardous materials and wastes generated, stored, handled, transported, and disposed of shall be managed in accordance with the standards in WAC 173-303.
- B. The contractor shall assume the following:
  - 1. Additional sampling and analysis of materials and/or waste by the contractor may be necessary for the determination of proper handling and disposal requirements in accordance with the standards in WAC 173-303.
  - 2. The cost of removal, handling, storage, sampling, analysis, transportation, and disposal of contaminated and/or hazardous materials and hazardous wastes as part of the execution of this contract shall be incidental to the specific proposal item.

#### **1.2 MANAGEMENT AND ANALYSIS OF WASTES**

##### **B. HAZARDOUS MATERIALS/WASTES**

- 1. The contractor shall be responsible for appropriately handling, transporting and disposing of all hazardous wastes generated and/or encountered under this contract.
- 2. The contractor shall be responsible for the sampling and analysis of all waste materials (waste streams) generated.
- 3. Hazardous wastes must be sampled, analyzed, and profiled in accordance with Washington Department of Ecology waste designation requirements as codified in WAC 173-303.
- 4. Testing shall be performed by a Washington State Department of Ecology accredited laboratory using EPA approved Methodologies for all testing required for waste determination.
- 5. The contractor shall report all proposed waste characterizations with the engineer prior to any waste transportation and/or disposal efforts are performed. The contractor may deviate from this approach only after providing a written work plan describing in detail the evaluation process and methods, If an alternative is proposed the City of Tacoma Project Engineer must review and approve the plan prior to any work starting.



6. The contractor shall report all proposed hazardous waste disposal locations with the engineer prior to any waste transportation and/or disposal efforts are performed. The contractor may deviate from this approach only after providing a written work plan describing in detail the handling, storage, and disposal location(s) and process(es) that will be used. If an alternative handling, storage, or disposal method is proposed, the City of Tacoma Project Engineer must review and approve the plan prior to any work starting.
7. Testing and waste characterizations may not be required if the waste materials are managed under a Department of Ecology approved recycling exemption (e.g. recycling of scrap steel without removal of coating, recycling of used concrete).

### **1.3 CODES, LAWS AND REGULATIONS**

The following laws, codes, and regulations shall be followed for the removal of soils, hazardous materials, and stormwater management:

- A. Washington State Department of Labor and Industries Chapters 296-155 WAC, 296-24 WAC, 296-62 WAC
- B. Washington State Department of Ecology Chapters 173-303 WAC, 173-304 WAC, 173-350 WAC
- C. Code of Federal Regulations Chapters 29 and 40.

## **PART 2 EXECUTION**

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### **A. HAZARDOUS MATERIALS/WASTES**

1. The contractor shall perform a baseline study for each work area where hazardous materials will be disturbed.
  - a. The contractor shall include all aspects of the environment local to the job site.
  - b. The contractor shall submit a plan showing test locations and results to the engineer prior to commencement of work involving the disturbance of hazardous materials at the job site.
  - c. Upon completion of work, including demobilization, the contractor shall perform a post-baseline study and shall submit the study to the engineer.
  - d. The City will not make final payment for work until the engineer has received and reviewed the post-baseline study.
2. All hazardous waste removal work shall be performed by workers that have completed all required training activities and are knowledgeable in the removal of hazardous waste materials.
3. The contractor shall follow all requirements of the above codes and regulations to protect all people who may enter the work area during hazardous waste removal.
4. All requirements of the county health department(s) shall be followed at all times.
5. The contractor shall furnish and require use of respiratory equipment and special protective clothing for all employees exposed to airborne contaminants or other hazardous materials.

6. The contractor shall be responsible for the removal, encapsulation and disposal of all hazardous waste materials disturbed, managed, and/or generated under this contract.
7. If applicable and/or requested by the engineer, the contractor shall include a copy of their lead/asbestos abatement program, management policies and procedures in the Contractor's Work Hazard Analysis Report. The Report shall be submitted to the City for the preconstruction conference in accordance with Section 01500 – Construction Facilities and Temporary Controls.

<b>END OF SECTION</b>
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## **SECTION 02999 – GEOTECHNICAL REPORT**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

The Tacoma Rail Monopole Memo (see Appendix A) is provided to the contractor for informational purposes. The design team has prepared documents based on the findings of the Geotechnical Engineer bound herein.

Contractor shall proceed with construction based on information shown in the drawings and specifications. In the event that the contractor discovers conflicts between the design and the recommendations contained within the report that could have negative consequences, he shall immediately notify the engineer of the conflict so that a review and determination can be made by the design team.

**END OF SECTION**

## **DIVISION 3 – CONCRETE**

### **SECTION 03000 – CAST IN PLACE CONCRETE**

#### **PART 1 GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Formwork
- B. Reinforcing
- C. Placing
- D. Finishing
- E. Curing

All materials and workmanship shall be in accordance with ACI 301, ACI 304, ACI 318, and ASTM C94.

##### **1.2 CONTRACTOR SUBMITTALS**

- A. Submittals shall be submitted as required in Section 01300 – Submittals and Shop Drawings.

##### B. CERTIFIED DELIVERY TICKETS

1. Where ready-mix concrete is used, the contractor shall provide certified weigh master delivery tickets at the time of delivery of each load of concrete.
2. Each certificate shall show the public weight master's signature and the total quantities, by weight of cement, sand, each class of aggregate, admixtures, and the amounts of water in the aggregate and added at the batching plant as well as the amount of water allowed to be added at the site for the specific design mix.
3. Each certificate shall, in addition, state the mix number, total yield in cubic yards, and the time of day, to the nearest minute, corresponding to when the batch was dispatched, when it left the plant, when it arrived at the job, the time that unloading began, and the time that unloading was finished.

##### C. CONCRETE MIX DESIGN

The contractor shall submit each concrete design mix to the engineer five (5) days prior to placing firm order.

##### D. REINFORCEMENT SHOP DRAWINGS

The contractor shall submit reinforcement shop drawings to the engineer five (5) days prior to placing firm order.

#### **PART 2 PRODUCTS**

##### **2.1 FORM MATERIALS**

Materials for concrete formwork shall be suitable to achieve the finish requirements for formed surfaces specified and meet ACI 347, "Recommended Practice for Concrete Formwork".

Form coating, sealers and release agents shall not bond with, stain, nor adversely affect concrete surfaces, and shall not impair subsequent treatments (painting, etc.) of concrete surfaces.

Do not use formwork for any above grade exposed concrete that will not perform as well as new formwork. Do not patch formwork or used rust-stained for-facing material.

## **2.2 REINFORCEMENT**

Bar reinforcement shall conform to ASTM A615 Grade 60 for deformed steel reinforcement.

Metal accessories including spacers, ties and other devices necessary for proper placement, spacing, supporting and fastening reinforcement in place shall conform to the Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice.

## **2.3 CONCRETE MATERIALS**

Concrete for the drilled shafts shall have a 28-day compressive strength of 4,000 pounds per square inch.

Material and installation shall be in accordance with the Standard Specifications, ACI 301, ACI 304, ACI 318, and ASTM C94.

Portland Cement shall meet the requirements of ASTM C150, Type I or Type III, gray cement.

# **PART 3 EXECUTION**

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## **3.1 FORMWORK**

### A. ERECT FORMS

All forms shall be set true to the lines designated, and the interior shape and dimension shall be such that the finished concrete shall coincide exactly as shown on the plans.

Provide bracing to ensure stability of form work. Shore or strengthen form work subject to over stressing by construction loads.

Forms shall be constructed to permit proper cleaning, and removal of chips, sawdust, and extraneous matter.

In no case shall any concrete be placed in any form until the form has been checked by the engineer.

Standing water will not be permitted in the forms during the placing of concrete.

All forms are to be removed. Built-in items shall be placed exactly where shown. Form design is the responsibility of the contractor. Coat all forms with approved form release compound for type of forms used.

Remove all dirt, dust, oil, release agents, stains, and other foreign matter forms from concrete floors prior to final finish.

All exposed corners shall have a 3/4-inch chamfer.

### B. APPLICATION - FORM RELEASE AGENT

Forms shall be oiled with a non-staining, colorless, mineral form oil acceptable to the engineer. The oil shall not impair natural bonding or color characteristics of any coatings intended for use on concrete.

The oil shall be applied several days before the concrete is placed and shall be in such quantity that it will be fully absorbed by the wood and will not discolor the surface of the concrete.

Apply form release agent on form work in accordance with manufacturer's recommendations and prior to placement of reinforcing steel, anchoring devices, and embedded items.

Section 03000

Specification No. PG21-0533N

### C. FORM REMOVAL

In general, forms shall not be removed until ample time has elapsed after placement of the concrete to permit the development of the proper set. This period shall not be less than two (2) days unless otherwise directed by the engineer.

In removing forms, care shall be taken to avoid damaging of concrete surfaces. Methods of removal tending to produce shocks or jars or fractures of concrete will not be permitted.

Forms shall be completely removed unless in the discretion of the engineer the ground conditions or other considerations at a particular structure warrant leaving them in place.

In any case, removal of forms may not be done without the approval of the engineer, and the contractor shall arrange his stripping operations so that concrete surfaces will be exposed for inspection and any repairing of defects which may be necessary while the excavations are free from water and before the concrete surfaces become covered with soil.

### **3.2 REINFORCEMENT PLACEMENT**

Reinforcement steel shall be accurately positioned as shown, and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections.

Tie wires shall be bent away from the forms in order to provide the specified concrete coverage.

Bars additional to those shown which may be found necessary or desirable by the contractor for the purpose of securing reinforcement in position shall be provided by the contractor at its own expense.

Unless otherwise specified, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.

Rebar cage shall be grounded to the ground ring per the grounding section of the specification.

### **3.3 CONCRETE PLACEMENT**

Notify field engineer at least 24 hours before an intended pour in accordance with construction schedule.

Earth surfaces shall be thoroughly wetted by sprinkling, prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

Steel reinforcement and concrete should be placed immediately upon completion of pier excavation. Contractor should not allow a cold joint to form in the pier. Portion above grade should be formed. Temporary casing may be required to prevent caving prior to concrete placement.

No concrete shall be placed until all formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the engineer at least four (4) hours before placement of concrete. All surfaces of forms and embedded items that have become encrusted with dried grout from concrete previously placed shall be cleaned of all such grout before the surrounding or adjacent concrete is placed.

All reinforcement, anchor bolts, spacers, and similar items shall be set and rigidly secured where shown or by shop drawings and shall be acceptable to the engineer before any concrete is placed. Accuracy of placement is the responsibility of the contractor.

Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete.

Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 304 and the requirements of this section.

Concrete which upon or before placing is found not to conform to the requirements specified herein shall be rejected and immediately removed from the work. Concrete which is not placed in accordance with these specifications, or which is of inferior quality, shall be removed and replaced by and at the expense of the contractor.

Concrete shall not be dropped through reinforcement steel or into any deep form, whether reinforcement is present or not, causing separation of the coarse aggregate from the mortar on account of repeatedly hitting rods or the sides of the form as it falls, or shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4-feet below the ends of ducts, chutes, or buggies without the engineer's approval.

All ends of chutes, hopper gates, and all other points of concrete discharge throughout the contractor's conveying, hoisting and placing system shall be so designed and arranged that concrete passing from them will not fall separated into whatever receptacle immediately receives it.

The temperature of concrete when it is being placed shall be not more than 90°F nor less than 40°F in moderate weather, and not less than 50°F in weather during which the mean daily temperature drops below 40°F.

Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the specified minimum temperature.

If concrete is placed when the weather is such that the temperature of the concrete would exceed 90°F, the contractor shall employ effective means, such as pre-cooling of aggregates and mixing water using ice or placing at night, as necessary to maintain the temperature of the concrete, as it is placed, below 90°F. The contractor shall be entitled to no additional compensation on account of the foregoing requirements.

Earth foundations shall be free from frost or ice when concrete is placed upon or against them. Fly ash concrete shall not be placed when the air temperature falls below 50°F.

As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all edges, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement.

Vibrators shall be high-speed power vibrators (8000 to 10,000 rpm) of an immersion type in sufficient number and with (at least one) standby units as required. Concrete shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified.

Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the results herein specified within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

### **3.4 CURING AND PROTECTION**

Keep exterior surfaces of new concrete continually wet with fog spray equipment for six (6) hours then cover with two (2) layers of wet burlap or other City approved equal during the entire curing period. Allow no shrinkage cracking to occur.

The contractor shall protect all concrete against injury until final acceptance by the City. Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The contractor shall provide such protection while the concrete is still plastic and whenever such precipitation is imminent or occurring. Immediately following the first frost in the fall, the contractor shall be prepared to protect all concrete against freezing. After the first frost, and until the mean daily temperature in the vicinity of the work site falls below 40°F for more than one (1) day, the concrete shall be maintained at a temperature not lower than 50°F for at least 72 hours after it is placed.

As soon as forms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until after inspection by the engineer. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall have them repaired as specified herein. Concrete containing extensive voids, holes, honeycombing, or similar depression defects, shall be completely removed and replaced. All repairs and replacements herein specified shall be promptly executed by the contractor at their own expense.

The contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance by the City. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface.

Any concrete found to be damaged, or which may have been originally defective, or which becomes defective at any time prior to the final acceptance of the completed work, or which departs from the established line or grade or which for any other reason does not conform to the requirements of the contract documents shall be satisfactorily repaired or removed and replaced with acceptable concrete at the contractor's expense.

### **3.5 FINISHES**

Horizontal surfaces of concrete drilled shafts with ponding water will not be accepted by the City.

All concrete shall be free of burrs and ties during curing.

Drilled shaft horizontal surfaces shall have a light broom finish.

<b>END OF SECTION</b>
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# **SECTION 03900 – REINFORCED CONCRETE DRILLED PIER (SHAFT) FOUNDATIONS**

## **PART 1 GENERAL**

### **1.1 SECTION INCLUDES**

This section includes the requirements to construct the reinforced concrete drilled pier (shaft) foundations as shown on the plans in Appendix B and indicated herein.

### **1.2 REFERENCES**

- A. The “State Specification” referred to in this Section shall mean the latest edition of the Standard Specification for Road, Bridge, and Municipal Construction published by the Washington State Department of Transportation (WSDOT) and the American Public Works Association (APWA).
- B. ADSC Standards and Specifications for the Foundation Drilling Industry (incorporating ACI 336.1).
- C. “Drilled Shaft Inspector’s Manual” as prepared by ADSC: The International Association of Foundation Drilling and DFI (Deep Foundations Institute).

### **1.3 GEOTECHNICAL DATA**

Geotechnical data used for the design of foundations for this project was obtained from a Geotechnical Memo attached in Appendix A.

Tacoma Power does not represent that the report shows completely all the existing subsurface conditions and does not guarantee any interpretation of the report or the correctness of any formation included in the Contract Documents relative to subsurface conditions.

### **1.4 CONTRACTOR SUBMITTALS**

- A. Submit in accordance with Section 01300 – Submittals and Shop Drawings

#### **B. CONSTRUCTION EXPERIENCE**

The contractor shall submit drilled shaft construction experience references (in accordance with Subsection 3.2A) to the engineer ten (10) days prior to construction.

#### **C. DRILLED SHAFT INSTALLATION PLAN**

The contractor shall submit a shaft installation plan (in accordance with Subsection 3.2B) to the engineer ten (10) days prior to construction.

#### **D. REINFORCEMENT SHOP DRAWINGS**

The contractor shall submit reinforcement shop drawings to the engineer five (5) days prior to placing firm order.

#### **E. CONCRETE MIX DESIGN**

The contractor shall submit a concrete mix design to the engineer five (5) days prior to placing firm order.

#### **F. OTHER MATERIALS**

The contractor shall submit product information (in accordance with Subsection 3.2B) for all other materials (i.e.: casing, slurry, etc.), if applicable, five (5) days prior to placing firm order.

## **PART 2 PRODUCTS**

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### **2.1 CASING**

- A. Tacoma Power does not guarantee the subsurface conditions. Therefore, conditions may require the use of a casing to facilitate construction. IF REQUIRED, all labor, materials, and equipment required to furnish and install the casing will be considered incidental to the Drilled Shaft bid item.
- B. All permanent casing shall be of steel base metal conforming to ASTM A36. All permanent casing shall be of ample strength to resist damage and deformation from transportation and handling, installation stresses, and all pressures and forces acting on the casing.
- C. All temporary casing shall be a smooth wall structure of steel base metal, except where corrugated metal pipe is shown in the Plans as an acceptable alternative material.
  - 1. All temporary casing shall be of ample strength to resist damage and deformation from transportation and handling, installation and extraction stresses, and all pressures and forces acting on the casing.
  - 2. The casing shall be capable of being removed without deforming and causing damage to the completed shaft, and without disturbing the surrounding soil.
- D. The casing shall be watertight and clean prior to placement in the excavation.
  - 1. The outside diameter of the casing shall not be less than the specified diameter of the shaft.

### **2.2 REINFORCING STEEL AND ANCHOR BOLTS**

- A. Reinforcing Steel shall conform to Section 03000 – Cast-In-Place Concrete.
- B. Anchor bolts shall be provided by Tacoma Power.
  - 1. Place, support, and secure anchor bolts and other embedded items against displacement prior to placing concrete.
  - 2. Set and maintain anchor bolts vertically at the required projection above the top of the concrete and in their correct orientation.
  - 3. Anchor bolts are furnished in a pre-assembled Cage with top and bottom templates.
  - 4. Contractor is responsible for proper orientation.
  - 5. Anchor bolts are furnished with three (3) heavy hex nuts per bolt.
  - 6. At the time of placing concrete, anchor bolts shall be free of loose rust, scale, oil, grease, mud, dirt, or other coating which will destroy or reduce the concrete bond.
  - 7. Protect threads from damage and concrete splatter.
  - 8. Rebar cages will be married/wiretied to the Valmont anchorage cage prior to start of drilled shaft construction, as necessary, for combined placement of Valmont and rebar anchorages, into the drilled shaft excavation.

### **2.3 CENTERING DEVICES**

Centering devices shall be plastic spacer wheels attached to the horizontal reinforcing and sized to fit the reinforcing and as necessary to maintain proper clearance between the cage and excavation sidewall.

### **2.4 GROUNDING**

The Contractor shall provide materials and install grounding to reinforcement and anchor

bolts.

## 2.5 CONCRETE

- A. Concrete shall conform to Section 03000 – Cast-In-Place Concrete.

## 2.6 SLURRY

- A. Tacoma Power does not guarantee the subsurface conditions. Therefore, conditions may require the use of slurry to facilitate construction. IF REQUIRED, all labor, materials, and equipment required to furnish and install the slurry shall be considered incidental to the Drilled Shaft bid item.
- B. Mineral slurry shall conform to the following requirements:

<u>Property</u>	<u>Test</u>	<u>Requirement</u>
Density (pcf)	Mud Weight (Density) API 13B- 1, Section 1	63 to 75
Viscosity (seconds/quart)	Marsh Funnel and Cup API 13b-1, Section 2.2	26 to 50
PH	Glass Electrode, pH Meter, or pH paper	8 TO 11
Sand Content (percent)	Sand API 13B-1, Section 5	Max 4.0 - prior to final cleaning Max 4.0 - immediately prior to placing concrete

1. Use of mineral slurry in salt water installations will not be allowed.  
Slurry temperature shall be at least 40F when tested.
- C. Synthetic slurries shall be used in conformance with the manufacturer's recommendations.

1. The following synthetic slurries are on the Qualified Products List:

<u>Product</u>	<u>Manufacturer</u>
ShorePac Viscous Soil Stability Polymer	CETCO Cartersville, GA
SlurryPro CDP	KB International, LLC Chattanooga, TN
Big-foot Polymer Slurry	Matrix Construction Products Naperville, IL

2. Other synthetic slurry products may be approved for use provided the product meets the acceptance criteria established by WSDOT, including status as an approved synthetic slurry (with load tested additives) with the California Department of Transportation (Caltrans).
3. The sand content of synthetic slurry prior to final cleaning and immediately prior to placing concrete shall be less than 1.0 percent, in accordance with API 13B-1, Section 5.
- C. Water with or without site soils may be used as slurry when casing is used for the entire length of the drilled hole.
1. Use of water slurry without full length casing may only be used with the approval of the Engineer. Water slurry shall conform to the following requirements:

<u>Property</u>	<u>Test</u>	<u>Requirement</u>
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Density (pcf)	Mud Weight (Density) API 13B-1, Section 1	65 Max
Sand Content (percent)	Sand API 13B-1, Section 5	1.0 Max

## **PART 3 EXECUTION**

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### **3.1 QUALITY ASSURANCE**

#### A. TOLERANCES

1. Shafts shall be constructed so that the center at the top of the shaft is within 6 inches horizontally and within 2 inches vertically of the design location.
  - a. Shafts shall be within 1.5 percent of plumb.
  - b. During drilling or excavation of the shaft, the contractor shall make frequent checks on the plumbness, alignment, and dimensions of the shaft.
  - c. Any deviation exceeding the allowable tolerances shall be corrected with a procedure approved by the Engineer.
2. Shaft steel reinforcing bar placement tolerances shall conform to Section 6- 02.3(24)C of the State Specifications.
3. Anchor Bolt Tolerances
  - a. Center of anchor bolt cluster from center of shaft: 1 inch.
  - b. Anchor bolt axis: 1% of bolt length from vertical.
  - c. Orientation of anchor bolt circle: 1/2 degree.
  - d. Anchor bolt projection: 1/2-inch.

#### B. SHAFT PRECONSTRUCTION CONFERENCE

1. A shaft preconstruction conference shall be held at least five (5) working days prior to the contractor beginning any shaft construction work at the site to discuss construction procedures, personnel, and equipment to be used, and other elements of the approved shaft installation plan and construction experience as specified in subsection 3.2A and 3.2B.
2. If synthetic slurry is used to construct the shafts, the frequency of scheduled site visits to the project site by the synthetic slurry manufacturer's representative will be discussed.
3. The list of materials specified will also be discussed.
4. Those attending shall include:
  - a. Contractor's personnel in charge of excavating the shaft, placing the casing and slurry as applicable, placing the steel reinforcing bars, and placing the concrete.
  - b. If synthetic slurry is used to construct the shafts, the slurry manufacturer's representative and a contractor's employee trained in the use of the synthetic slurry, as identified to the Engineer in accordance with subsection 3.02.C, shall also attend.
  - c. The Project Manager, Tacoma Power, and key inspection personnel.

## 3.2 SUBMITTALS

### A. CONSTRUCTION EXPERIENCE

1. Prior to the start of drilled shaft construction, the contractor shall submit a project reference list to the Engineer for approval verifying the successful completion by the contractor of at least three separate foundation projects with drilled shafts of diameters, depths, and ground conditions equal to or larger than the one shown in the plans.
  - a. A brief description of each project and the owner's contact person's name and current phone number shall be included for each project listed.
2. Prior to the start of drilled shaft construction, the contractor shall submit one copy of a list identifying the on-site supervisors, and drill rig operators assigned to the project to the Engineer for approval.
  - a. The list shall contain a detailed summary of each individual's experience in shaft excavation operations, and placement of assembled steel reinforcing bar cages and concrete in shafts.
3. Work shall not be started on any drilled shaft until the contractor's qualifications and field personnel are approved by the Engineer.
  - a. The Engineer may suspend the drilled shaft construction if the contractor substitutes unqualified personnel.
  - b. The contractor shall be fully liable for the additional costs resulting from the suspension of work and no adjustments in contract time resulting from the suspension of work will be allowed.

### B. SHAFT INSTALLATION PLAN

The contractor shall submit one (1) copy of a shaft installation narrative for approval by the Engineer. In preparing the narrative, the contractor shall reference the available subsurface information. This narrative shall provide at least the following information:

- A. An overall construction operation sequence and the sequence of drilled shaft construction.
- B. List, description and capacities of proposed equipment, including but not limited to cranes, drills, auger, bailing buckets, final cleaning equipment and drilling unit.
  1. The narrative shall describe why the equipment was selected, and describe equipment suitability to the anticipated site and subsurface conditions.
  2. The narrative shall include a project history of the drilling equipment demonstrating the successful use of the equipment on shafts of equal or greater size in similar soil/rock conditions.
- C. Details of shaft excavation methods, including proposed drilling methods, methods for cleanout of the shafts and a disposal plan for excavated material and drilling slurry (if applicable).
  1. This shall include a review of method suitability to the anticipated site and subsurface conditions.
- D. Details of the method(s) to be used to ensure shaft stability (i.e., prevention of caving, bottom heave, etc. using temporary casing, slurry, or other means) during excavation (including pauses and stoppages during excavation) and concrete placement.
  1. This shall include a review of method suitability to the anticipated site and subsurface conditions.

2. If casings are proposed or required, casing dimensions and detailed procedures for permanent casing installation, temporary casing installation and removal, and methods of advancing temporary and permanent casing with the excavation in accordance with subsection 3.3B, shall be provided.
- E. Detailed procedures for mixing, using, maintaining, and disposing of the slurry shall be provided.
  1. A detailed mix design (including all additives and their specific purpose in the slurry mix), and a discussion of its suitability to the anticipated subsurface conditions, shall also be provided for the proposed slurry.
- F. The submittal shall include a detailed plan for quality control of the selected slurry, including tests to be performed, test methods to be used, and minimum and/or maximum property requirements which must be met to ensure that the slurry functions as intended, considering the anticipated subsurface conditions and shaft construction methods, in accordance with the slurry manufacturer's recommendations and this Specification.
  1. As a minimum, the slurry quality control plan shall include testing for density, viscosity, PH, and sand content.
- G. The method used to fill or eliminate all voids below the top of shaft between the plan shaft diameter and excavated shaft diameter, or between the shaft casing and surrounding soil, if permanent casing is specified.
- H. Reinforcing steel shop drawings, details of reinforcement placement, including bracing, centering, and lifting methods, and the method to assure the reinforcing cage position is maintained during construction, including rock backfill below the bottom of shaft elevation.
- I. Details of concrete placement, including proposed operational procedures for pumping methods, and a sample uniform yield form to be used by the contractor for plotting the volume of concrete placed versus the depth of shaft for all shaft concrete placement (except concrete placement in the dry).
- J. The method to be used to form an emergency horizontal construction joint during concrete placement.
- K. Description of the material used to temporarily backfill a shaft excavation during a stoppage of the excavation operation, as well as the method used to place and remove the material.
- L. When shafts are constructed in water, the submittal shall include seal thickness calculations, seal placement procedure, and descriptions of provisions for casing shoring dewatering and flooding.
- M. Verification of line clearances, where required, with equipment intended to be used for construction.
- N. Existing utility protection procedures.

#### C. SLURRY TECHNICAL ASSISTANCE

1. If slurry other than water slurry is used to construct the shafts, the contractor shall provide or arrange for technical assistance in the use of the slurry as specified in subsection 3.4.A.1.
2. The contractor shall submit one (1) copy of the following to the Engineer:
  - a. The name and current phone number of the slurry manufacturer's technical representative assigned to the Project.

- b. The name(s) of the contractor's personnel assigned to the project and trained by the slurry manufacturer in the proper use of the slurry.
- c. The submittal shall include a signed training certification letter from the slurry manufacturer for each trained contractor's employee listed, including the date of the training.

### **3.3 SHAFT EXCAVATION**

- A. Shafts shall be excavated to the required depth as shown in the Plans or as directed by the Engineer.
  - 1. Once the excavation operation has been started, the excavation shall be conducted in a continuous operation until the excavation of the shaft is completed, except for pauses and stops as noted, using approved equipment capable of excavating through the type of material expected.
  - 2. Pauses during this excavation operation, except for casing splicing and removal of obstructions, are not allowed.
  - 3. The contractor shall provide temporary casing at the site in sufficient quantities to meet the needs of the anticipated construction method.
- B. Pauses, defined as momentary interruptions of the excavation operation, will be allowed only for casing splicing and removal of obstructions.
  - 1. Shaft excavation operation interruptions not conforming to this definition shall be considered stops.
- C. If the shaft excavation is not complete at the end of the shift or series of continuous shifts, the shaft excavation operation may be stopped, provided the following conditions are met.
  - 1. The contractor shall, before the end of the work day, either install casing in the hole to the depth of the excavation and either the Plan diameter of the shaft or the actual excavated diameter of the hole, whichever is greater, or backfill the hole with material approved by the Engineer in accordance with subsection 3.2.K.
  - 2. The contractor shall backfill the hole to the ground surface, if the excavation is not cased, or to a minimum of five feet above the bottom of casing, if the excavation is cased.
  - 3. Backfilling of shafts with casing fully seated into rock, as determined by the Engineer, will not be required. If slurry is present in the shaft excavation, the contractor shall conform to the requirements of subsection 3.4.B regarding the maintenance of the minimum level of drilling slurry throughout the stoppage of the shaft excavation operation, and shall recondition the slurry to the required slurry properties in accordance with subsection 2.6 prior to recommencing shaft excavation operations.
- D. If casings are required and installed using vibratory means, minimum three days shall be allowed for pore water pressure to dissipate before excavating the soils inside the casing.
- E. Casing will not be allowed to be removed by vibratory means.
  - 1. Casing shall be either left in place (permanent casing) or removed by rotating, oscillating, jacking, or pulling out.
- F. Vibratory means are not allowed to remove casing within a distance of 30 feet from the bottom of the shaft.
- G. The contractor may use temporary telescoping casing for the shafts, subject to the following conditions:



1. The minimum diameter of the shaft shall be as shown in the Plans.
2. The temporary telescoping casing shall conform to subsections 2.1.
3. Maximum of two (2) telescoping casing diameter changes will be allowed.
4. The maximum diameter change at each casing diameter transition shall be 12-inches.
- H. The contractor shall conduct casing installation and removal operations and shaft excavation operations such that the adjacent soil outside the casing and shaft excavation for the full height of the shaft is not disturbed.
  1. Disturbed soil is defined as soil whose geotechnical properties have been changed from those of the original in-situ soil, and whose altered condition adversely affects the structural integrity of the shaft foundation.
  - I. Shaft excavations shall not be left open overnight unless cased full depth.
    1. An open shaft excavation is defined as a shaft excavation that has not been filled with concrete, or temporarily backfilled with a material approved by the Engineer in accordance with subsection 3.2.K.
  - J. The contractor shall use appropriate means such as a cleanout bucket or air lift to clean the bottom of the excavation of all shafts.
    1. No more than 2 inches of loose or disturbed material shall be present at the bottom of the shaft just prior to placing concrete.
  - K. The excavated shaft shall be inspected and approved by the Engineer prior to proceeding with construction.
    1. The bottom of the excavated shaft shall be sounded with an airlift pipe, a tape with a heavy weight attached to the end of the tape, or other means acceptable to the Engineer to determine that the shaft bottom meets the requirements in the Contract.
  - L. When obstructions are encountered, the contractor shall notify the Engineer promptly.
    1. An obstruction is defined as a specific object (including, but not limited to, boulders, logs, and manmade objects) encountered during the shaft excavation operation which prevents or hinders the advance of the shaft excavation.
    2. The method of dealing with such obstructions, and the continuation of excavation shall be as proposed by the contractor and approved by the Engineer.
  - M. When permanent casing is used, excavation shall conform to the specified outside diameter of the shaft.
    1. After the casing has been filled with concrete, all void space occurring between the casing and shaft excavation shall be filled with a material which approximates the geotechnical properties of the in-situ soils, in accordance with the shaft installation plan specified in subsection 3.2.B as approved by the Engineer.
  - N. If the contractor elects to use slurry, it shall be used, in accordance with subsection 3.4, to maintain a stable excavation during excavation and concrete placement operations once water begins to enter the shaft excavation and remain present.

### **3.4 SLURRY INSTALLATION REQUIREMENTS**

#### **A. SLURRY TECHNICAL ASSISTANCE**

1. If slurry other than water slurry is used, the manufacturer's representative shall:
  - a. Provide technical assistance for the use of the slurry.
  - b. Shall be at the site prior to introduction of the slurry into a drilled hole, and



- c. Shall remain at the site during the construction and completion of a minimum of one (1) shaft to adjust the slurry mix to the specific site conditions.
2. After the manufacturer's representative is no longer present at the site, the contractor's employee trained in the use of the slurry, as identified to the Engineer in accordance with subsection 3.2.C, shall be present at the site throughout the remainder of shaft slurry operations for this project to perform the duties specified in items 1a through 1c above.

#### B. MINIMUM LEVEL OF SLURRY IN THE EXCAVATION

1. When slurry is used to maintain a stable excavation, the slurry level in the excavation shall be maintained above the groundwater level the greater of the following dimensions, except as otherwise noted in subsection 3.4.B.2.b:
  - a. Not less than five feet for mineral slurries.
  - b. Not less than ten feet for water slurries.
  - c. Not less than ten feet for synthetic slurries, except when a lesser dimension is specifically recommended by the slurry manufacturer for the site conditions and construction method, and is supported by slurry material property, mix, and maintenance requirements submitted as part of item 5 of the shaft installation plan in accordance with subsection 3.2.B.
  - d. One (1) shaft diameter.
  - e. Dimension as required to provide and maintain a stable hole.
2. The contractor shall provide casing, or other means, as necessary to meet these requirements.
  - a. The slurry level shall be maintained above all unstable zones a sufficient distance to prevent bottom heave, caving or sloughing of those zones.
  - b. Throughout all stops in shaft excavation operations, as specified in subsection 3.3.A, the contractor shall monitor and maintain the slurry level in the excavation the greater of the following elevations:
    - 1) No lower than the water level elevation outside the shaft.
    - 2) Elevation as required to provide and maintain a stable hole.

#### C. SLURRY SAMPLING AND TESTING

1. Mineral slurry and synthetic slurry shall be mixed and thoroughly hydrated in slurry tanks, ponds, or storage areas.
  - a. The contractor shall draw sample sets from the slurry storage facility and test the samples for conformance with the appropriate specified material properties before beginning slurry placement in the drilled hole.
  - b. Mineral slurry shall conform to the material specifications in subsection 2.6.A. Synthetic slurry shall conform to the quality control plan included in the shaft installation plan in accordance with subsection 3.2.B and as approved by the Engineer.
  - c. A sample set shall be composed of samples taken at mid-height and within two feet of the bottom of the storage area.
2. The contractor shall sample and test all slurry in the presence of the Engineer, unless otherwise directed.
  - a. The date, time, names of the persons sampling and testing the slurry, and the

results of the tests shall be recorded.

- b. A copy of the recorded slurry test results shall be submitted to the Engineer at the completion of each shaft, and during construction of each shaft when requested by the Engineer.
- 3. Sample sets of all slurry, composed of samples taken at mid-height and within two feet of the bottom of the shaft, shall be taken and tested during drilling as necessary to verify the control of the properties of the slurry.
  - a. As a minimum, sample sets of synthetic slurry shall be taken and tested at least once every four hours after beginning its use during each shift.
  - b. Sample sets of all slurry shall be taken and tested at least once every two hours if the slurry is not recirculated in the drilled hole or if the previous sample set did not have consistent specified properties.
  - c. All slurry shall be recirculated, or agitated with the drilling equipment, when tests show that the sample sets do not have consistent specified properties.
- 4. Sample sets of all slurry, as specified, shall be taken and tested prior to final cleaning of the bottom of the hole and again just prior to placing concrete.
  - a. Cleaning of the bottom of the hole and placement of the concrete shall not start until tests show that the samples taken at mid-height and within two feet of the bottom of the hole have consistent specified properties.
- D. The contractor shall clean, recirculate, de-sand, or replace the slurry to maintain the required slurry properties.
- E. The contractor shall demonstrate to the satisfaction of the Engineer that stable conditions are being maintained.
  - 1. If the Engineer determines that stable conditions are not being maintained, the contractor shall immediately take action to stabilize the shaft.
  - 2. The contractor shall submit a revised shaft installation plan which addresses the problem and prevents future instability.
  - 3. The contractor shall not continue with shaft construction until the damage which has already occurred is repaired in accordance with the specifications, and until receiving the Engineer's approval of the revised shaft installation plan.
- F. When mineral slurry, conforming to subsection 2.6, is used to stabilize the unfilled portion of the shaft, the contractor shall remove the excess slurry buildup inside of the shaft diameter prior to continuing with concrete placement.
  - 1. The contractor shall use the same methods of shaft excavation and the same diameter of drill tools to remove the excess slurry buildup as was used to excavate the shaft to its current depth.

### **3.5 ASSEMBLY AND PLACEMENT OF REINFORCING STEEL**

- A. The reinforcing cage shall be rigidly braced to retain its configuration during handling and construction. Individual or loose bars will not be permitted.
  - 1. The contractor shall show bracing and any extra reinforcing steel required for fabrication of the cage on the shop drawings.
- B. The reinforcement shall be carefully positioned and securely fastened to provide the minimum clearances listed below, and to ensure that no displacement of the reinforcing steel bars occurs during placement of the concrete.

1. The steel reinforcing bars shall be securely held in position throughout the concrete placement operation.
  2. The contractor shall submit details of the proposed reinforcing cage spacers along with the shop drawings.
  3. The reinforcing steel spacers at each longitudinal space plane shall be placed at least at the quarter points around the circumference of the steel reinforcing bar cage, and at a maximum longitudinal spacing of either 2.5 times the shaft diameter or 20'- 0", whichever is less.
- C. Place bars as shown in the contract plans.
- D. For shafts with temporary casing within 15 feet of the bottom of shaft elevation as specified in the Plans, the contractor may place quarry spalls or other rock backfill approved by the Engineer into the shaft below the specified bottom of shaft elevation as a means to support the steel reinforcing bar cage, provided that the materials and means to accomplish this have been addressed by the shaft installation plan as approved by the Engineer, as specified in subsection 3.2.B.
- E. Shaft excavation shall not be started until the contractor has received approval from the Engineer for the reinforcing steel spacers required when the casing is to be pulled during concrete placement.

### **3.6 PLACING CONCRETE**

- A. Concrete placement shall commence immediately after completion of excavation by the contractor and inspection by the Engineer.
1. Immediately prior to commencing concrete placement, the shaft excavation and the properties of the slurry (if used) shall conform to subsections 3.3 and 3.4, respectively.
  2. Concrete placement shall continue in one operation to the top of the shaft, or as shown in the Plans.
  3. The contractor shall place concrete between the upper construction joint of the shaft and the top of the shaft in the dry.
- B. When placing concrete in the dry, only the top five feet of concrete shall be vibrated. If a temporary casing is used it shall be removed before vibration.
1. This requirement may be waived if a temporary casing is used and removed with a vibratory hammer during the concrete placement operation.
  2. Vibration of the top five feet of concrete does not affect the maximum slump allowed for the concrete class specified.
- C. If water is not present, the concrete shall be deposited through the center of the reinforcement cage by a method which prevents segregation of aggregates and splashing of concrete on the reinforcement cage.
1. The concrete shall be placed such that the freefall is vertical down the center of the shaft without hitting the sides, the steel reinforcing bars, or the steel reinforcing bar cage bracing.
- D. When placing concrete underwater, the contractor shall use a concrete pump, with a watertight tube having a minimum diameter of 4 inches.
1. The discharge end of the tube on the concrete pump shall include a device to seal out water while the tube is first filled with concrete.

- E. Throughout the underwater concrete placement operation, the discharge end of the tube shall remain submerged in the concrete at least 5 feet and the tube shall always contain enough concrete to prevent water from entering.
  - 1. The concrete placement shall be continuous until the work is completed, resulting in a seamless, uniform shaft.
  - 2. If the concrete placement operation is interrupted, the Engineer may require the contractor to prove by core drilling or other tests that the shaft contains no voids or horizontal joints.
    - a. If testing reveals voids or joints, the contractor shall repair them or replace the shaft at no expense to the Contracting Agency.
    - b. It shall be the contractor's responsibility for coring costs and calculation of time extension.
- F. Before placing any fresh concrete against concrete deposited in water or slurry, the contractor shall remove all scum, laitance, loose gravel and sediment on the upper surface of the concrete deposited in water or slurry and chip off any high spots on the upper surface of the existing concrete that would prevent the steel reinforcing bar cage from being placed in the position required by the Plans.
- G. Vibration causing operations (traffic, equipment, etc) in the vicinity of a drilled shaft excavation (within four shaft diameters or 30 feet of the centerline of the concreted shaft, whichever is greater), with freshly placed concrete and curing concrete shall be restricted, during the time period between six hours after beginning concrete placement operations and eight days after completing concrete placement operations, except after satisfying the following condition:
  - 1. The compressive strength of the concrete in the concreted shaft shall have reached 3,000 psi.
- H. Except for shafts where the shaft concrete is placed in dry soil conditions, the contractor shall complete a uniform yield form, consistent with the sample form submitted to the Engineer as part of the shaft installation plan as specified in subsection 3.2, for each shaft and shall submit the completed form to the Engineer within 24 hours of completing the concrete placement in the shaft.

### **3.8 CASING REMOVAL**

- A. As the temporary casing is withdrawn, a minimum 5-foot head of concrete shall be maintained to balance the foundation material and water pressure at the bottom of the casing.
- B. Tops of permanent casings for the shafts shall be removed to finished ground line, unless directed otherwise by the Engineer.
  - 1. The contractor shall completely remove all temporary casings.

### **3.9 DISPOSAL OF WASTE WATER, SLURRY, AND EXCAVATED MATERIAL**

Waste water, slurry mixture, and the excavated material shall be disposed of in a legal manner.

<b>END OF SECTION</b>
-----------------------

## **DIVISION 5 – METALS**

### **SECTION 05600 – STEEL MONOPOLE INSTALLATION**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

This section includes installation of a 139-foot monopole, eight (8) antenna mounts, one (1) security camera pipe mount, climbing pegs, safety climb system, and adjustable lightning rod. See Appendix C for Valmont installation instructions.

#### **PART 2 PRODUCTS**

- A. 139-foot, 18-sided Valmont Monopole (3) section,
- B. Eight (8) 6-foot standoff arm mounts with mounting pipes and antennas.
- C. One (1) 3-foot standoff arm mount with mounting pipe for camera.
- D. Tuf-Tug cable type safety climb system.
- E. Climbing Pegs.

#### **PART 3 EXECUTION**

- A. All items installed per manufacturer's specifications. See appendix C for Valmont installation instructions.
- B. (2) 6-foot standoff mounts and 15-foot Omni antenna mounted at 130-feet above bottom of pole.
- C. (2) 6-foot standoff mount and 15-foot Omni antenna mounted at 110-feet above bottom of pole.
- D. (2) 6-foot standoff mount and 15-foot Omni antenna mounted at 90-feet above bottom of pole.
- E. (2) 6-foot standoff mount and 15-foot Omni antenna mounted at 70-feet above bottom of pole.
- F. 3-foot standoff mount for camera mounted at 66-feet above bottom of pole.

**END OF SECTION**

## **DIVISION 16 – ELECTRICAL**

### **SECTION 16060 – GROUNDING AND BONDING**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

Install grounding system for tower per Motorola R56 standards. See Motorola R56 Standards and Guidelines for Communication Sites 2005 Manual.

#### **PART 2 PRODUCTS**

##### **2.1 GROUND RODS (QTY. 2)**

- a. Shall be UL listed. Constructed of copper-clad steel, solid copper, hot-dipped galvanized steel, or stainless steel.
- b. Ground rods shall have a minimum length of 8 feet and minimum diameter of 0.625 inches.
- c. Ground rods shall be free of paint or other nonconductive coatings.

##### **2.2 TOWER GROUND RING**

- a. Shall be #2 AWG or coarser, bare, solid, tinned or un-tinned, copper conductors.

##### **2.3 GROUNDING (EARTHING) CONDUCTORS**

- a. Shall be #2 AWG or coarser bare, solid, tinned or un-tinned, copper conductors.

##### **2.4 TOWER GROUND BUS BAR**

- a. Shall be bare, solid alloy 110 copper bus bar or plate of one piece construction. Should be tin plated.
- b. Min. Height = 2 inches, Min. Thickness = 0.25 inches, Min. Length = 12 inches.
- c. Mounting brackets shall be stainless steel.
- d. Mounting holes shall be 0.4375 to 0.75 inches on center.

#### **PART 3 EXECUTION**

##### **3.1 GROUNDING (EARTHING) ELECTRODES**

###### **1. Installation**

- a. Upper end of ground rods shall be buried to the depth of the ground ring, 30 inches minimum.
- b. Ground rods shall not be installed closer than 8 feet from other ground rods.
- c. Ground rods that cannot be driven straight down, due to contact with rock formations, may be driven at an oblique angle of not greater than 45 degrees from the vertical.
- d. Hammer drills or electric jackhammers may be used to drive in the ground rods. Do not deform the head of the ground rod.

##### **3.2 TOWER GROUND RING**

###### **1. Installation**

- a. Tower ground rings shall encircle the tower structure.
- b. The ends of the conductor shall be joined together to form a ring using an exothermic weld or listed irreversible high-compression connector.
- c. Tower ground rings shall be bonded together in at least two points using a #2 AWG or coarser, bare, solid, tinned or un-tinned, copper conductor. The conductors should be physically separated as much as practical.
- d. Ground rings shall be installed in direct contact with the earth at a depth of 30 inches below the earth's surface.
- e. Tower ground rings shall be installed at least 2 feet from the tower foundation.
- f. Ground rods shall be placed a minimum of one rod length apart from one another along the ground rings.

### **3.3 GROUNDING (EARTHING) CONDUCTORS**

#### **1. Installation**

- a. Grounding electrode conductors shall be installed in one continuous length without a splice or joint, unless spliced using irreversible compression-type connectors listed for the purpose or by exothermic welding.
- b. Above-ground conductors used for bonding individual objects shall be #6 AWG or coarser, tinned or un-tinned, copper conductors.
- c. Above-ground conductors used for bonding multiple metallic objects shall be #2 AWG or coarser, tinned or un-tinned, copper conductors.
- d. Above-ground bonding conductors should be jacketed, whenever practical.
- e. Solid straps or bars may be used as long as the cross-sectional area equals or exceeds that of the specified grounding conductor.
- f. Grounding (earthing) conductors shall be run in a direct manner with no sharp bends or narrow loops.
- g. Grounding conductors shall be run as short, straight, and smoothly as possible with the fewest possible bends and curves.
- h. A minimum bending radius of 8 inches shall be maintained, applicable to grounding conductors of all sizes.

#### **2. Protection**

- a. Grounding conductors shall be protected where exposed to physical damage.
- b. Grounding conductors exposed to physical damage shall be protected for a minimum distance of 6 feet above grade level.
- c. Metallic guards and/or conduits used to protect grounding conductors shall be bonded to the grounding conductor at both ends.
- d. The grounding conductor or its enclosure shall be securely fastened to the surface on which it is carried.
- e. Grounding conductors shall be secured using appropriate hardware intended for the purpose.
- f. When metallic fasteners are used on bare grounding conductors, fasteners of the same material shall be used, or approved bonding techniques shall be observed for the connection of dissimilar metals.

- g. Above ground grounding conductors shall be securely fastened at intervals not exceeding 3 feet where practical.

### **3.4 TOWER GROUND BUS BAR**

#### **1. Installation**

- a. The tower ground bus bar shall be connected to the tower grounding electrode system with a #2 AWG or coarser, bare, solid, tinned, copper conductor.
- b. The grounding conductors shall be run as short, straight, and smoothly as possible.

<b>END OF SECTION</b>
-----------------------



# APPENDIX A

## GEOTECHNICAL MEMO

## TECHNICAL MEMORANDUM

**TO:** Kevin Smith, PE  
**FROM:** John Schober, PE; Cole Bales, PE; Kareem Bynoe  
**SUBJECT:** Monopole Foundation  
Tacoma Power – Tacoma Railyard Monopole Project  
**DATE:** April 27, 2020

---

### **INTRODUCTION**

This technical memorandum (memo) presents WSP's geotechnical investigation results and foundation recommendations for the Tacoma Railyard Monopole Project (Project). The recommendations presented in this memo are based on the subsurface conditions encountered in one geotechnical boring drilled for this project and information in the soil guide provided by Valmont Industries. This technical memo is intended for the sole use of Tacoma Power and Valmont Industries to advance design of the Project.

### **SITE AND PROJECT DESCRIPTION**

The site is in the Tacoma Rail facility in Tacoma, Washington, situated just north of the State Route 509 Frontage Road and bounded to the east and west by Port of Tacoma Road and Milwaukie Road, respectively. The purpose of the project is to install a single 149-foot monopole radio tower. The anticipated site of the monopole is on the west side of the maintenance facility as shown on the Site and Exploration Plan (Attachment 2). The site is in an active railyard with generally flat terrain and free of vegetation. There were no rock outcroppings or boulders encountered or observed at the site.

### **SUBSURFACE INVESTIGATION**

One geotechnical boring was drilled on February 11, 2020 to a depth of 60 feet below ground surface (bgs) using hollow stem auger drilling techniques with mud stabilization at sampling. The boring was drilled by Budinger & Associates of Spokane, Washington. A WSP representative performed the sampling and logging of the boring. Standard Penetration Tests were conducted at 5 foot intervals following ASTM procedures. The results of the boring are summarized in a boring log in Attachment 3.

### **LABORATORY TESTING**

Geotechnical index testing was performed by HWA Geosciences of Bothell, Washington. Index testing included moisture content, Atterberg limits, and particle size analysis. The lab test results are provided in the Letter Report and summarized on the boring log in Attachment 4.

### **SUBSURFACE CONDITIONS**

This section provides an overview of the subsurface conditions at the proposed monopole location. The subsurface conditions were established based on the data obtained from boring TRM-1. Engineering properties of each soil unit encountered at the project site are provided in Table 1. These properties were estimated using the empirical correlations recommended by WSDOT GDM (2019). Groundwater was encountered in boring TRM-1 at about 3.6 feet below ground surface.

*Table 1 Engineering Soil Properties*

LAYER	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	THICKNESS (FT)	LAYER DESCRIPTION	TOTAL UNIT WEIGHT (LB/FT <sup>3</sup> )	UNDRAINED SHEAR STRENGTH (LB/FT <sup>2</sup> )	FRICTION ANGLE (DEGREE)
1	0	5	5	Fill	120	-	32
2	5	10	5	Sand with Silt	120	-	30
3	10	25	15	Sandy Silt to Silt	115	-	25
4	25	31	6	Silty Sand	120	-	32
5	31	41	10	Sandy Silt to Silt	115	-	25
6	41	45	4	Organic Silt	110	500	-
7	45	50	5	Elastic Silt	115	1000	-
8	50	61.5	16.5	Sand to Sand with Silt	125	-	38

### **SEISMIC DESIGN CONSIDERATIONS**

A response spectrum was developed using IBC 2015 design procedures. The design acceleration response spectrum is based on the USGS Seismic Hazard Map for the 2% in 50 years probability of exceedance (or 2,425-year return period).

Based on subsurface data from boring TRM-1, soils at the project site can generally be classified as Type D. Average shear wave velocity in the upper 30 meters, or 100 feet ( $V_{s,30}$ ) has been estimated to be approximately 185 meters per second. The response spectrum curve for the project site is shown in Attachment 5. Peak Ground Acceleration (PGA) is approximately 0.34g for this site.

The site is an area mapped by the Washington State Department of Natural Resources as a high liquefaction hazard zone. Preliminary evaluation of liquefaction potential was performed using the seismic parameters developed above, the soil properties shown in Table 1, and lab testing data. Using the Idriss and Boulanger liquefaction triggering criteria, soils from 3.6 feet bgs to about 45 feet bgs were determined to be potentially liquefiable in the event of a triggering earthquake. In addition, we estimated that the liquefaction induced settlement be on the order of 12 to 16 inches.

Liquefaction induced lateral spreading generally occurs at sites with regionally sloping grades and/or free slope faces. Topography at the site is relatively flat and the nearest potential free face is over 3,000 feet away; however, minor amounts of lateral displacement due to liquefaction induced lateral spreading were estimated to be on the order of up to 0.5 feet.

### **GRADE AND SLOPE STABILITY**

The site is relatively flat and no slopes are present near the proposed monopole location. It is our understanding that no excavation slopes or site grading will be required at the site. The site currently supports heavy rail equipment; therefore, it is anticipated the site can support heavy construction equipment as well. Equipment would have to cross raised railway tracks to access the site.

## **FOUNDATION RECOMMENDATIONS**

Due to liquefaction potential at the site and to satisfy the lateral and uplift demands of the monopole, we recommend a drilled shaft for the monopole foundation.

### **Axial Resistance**

Nominal side resistance and tip resistance for varying diameters are provided in Attachments 6 and 7. Nominal side resistance is equivalent for download and uplift, however the appropriate reduction factors should be applied to the nominal values given.

Post-liquefaction downdrag loading for various shaft diameters is provided in Table 2 and Attachment 7. The liquefaction-induced downdrag combined with post-seismic loads should be used to check the structural capacity of the drilled shaft. Note that downdrag loads provided in Table 2 should not be added to the plots provided in Attachment 7, as downdrag loading is already accounted for in the plots.

*Table 2 Liquefaction Induced Downdrag Loads*

<b>SHAFT DIAMETER (FEET)</b>	<b>DOWNDRAG LOAD (KIPS)</b>
2	40
3	70
4	90
5	115
6	140

### **Lateral Resistance**

The lateral response of drilled shafts can be analyzed using the P-y approach in the program LPILE (Wang and Reese, 1993), where P is the lateral load applied to the shaft and y is the lateral deflection. Using this approach, the resistances of the surrounding soils are represented by a series of non-linear springs, which are modeled using p-y curves. The soil stiffness is defined by the modulus of subgrade reaction (k) for granular soils or the secant shear strain ( $\epsilon_{50}$ ) for clayey soils.

Input parameters for lateral response analyses of the monopole foundation are provided in Table 3. These parameters were developed following guidance provided in the user's manuals of the LPILE program (Isenhower and Wang, 2016). The recommended parameters shown in Table 3 should be treated as average values for lateral response analysis. Variations of 20 percent for the subgrade modulus (k) and 2 degrees for the friction angle ( $\phi$ ) can be assumed should a sensitivity study be required. When evaluating the lateral resistance during the extreme event limit state, the potentially liquefiable soils should be modeled as soft clay with a shear strain value of 0.05 and the  $p_{ult}$  should be modified to the residual shear strength shown in the table. Lateral loads associated with liquefaction induced lateral spreading should be accounted for in analysis of the extreme event limit state using these residual shear strength values. For simplicity, the lateral displacement profile can be assumed to decrease linearly with depth, with the maximum lateral displacement at the top of the liquefiable zone (viz. 3.6 feet bgs) and the lateral displacement approaching zero at the base of the liquefiable zone (viz. 45 feet bgs).

Table 3 LPILE Parameters

SOIL LAYER	APPROXIMATED DEPTH FROM TOP OF SHAFT (FT)		STATIC			POST-SEISMIC		
	Top	Bottom	LPILE Soil Model	Modulus of Subgrade Reaction, k (pci)	Secant shear strain, $\epsilon_{50}$	LPILE Soil Model	Secant Shear Strain	Pult (psf)
1	0	5	API SAND (O'Neill)	57	-	Matlock Clay	.05	129
2	5	10	API SAND (O'Neill)	120	-	Matlock Clay	.05	129
3	10	25	API SAND (O'Neill)	74	-	Matlock Clay	.05	89
4	25	31	API SAND (O'Neill)	154	-	Matlock Clay	.05	489
5	31	41	API SAND (O'Neill)	57	-	Matlock Clay	.05	154
6	41	45	Matlock Clay	-	.012	Matlock Clay	.05	187
7	45	50	Matlock Clay	-	.008	-	-	-
8	50	61.5	API SAND (O'Neill)	154	-	-	-	-

The tolerable horizontal movement at the top of the drilled shaft foundation should be based on the tolerance of the monopole to lateral movement. Due to the relatively high seismic demand in the Tacoma area, the shaft tip depth required to resist lateral loads may be deeper than that required for bearing or uplift.

### **CONSTRUCTION CONSIDERATIONS**

Soils encountered at the site are expected to be fine grained silt between 10 and 45 feet below ground surface and granular at the ground surface and below 45 feet bgs. Drilling slurries are less effective at maintaining the stability of the drilled shaft excavation when granular soils are poorly-graded and clean or contains large void spaces. Boring TRM-1 experienced mud loss near 50 feet bgs, which suggest drilling slurry may not be able to support the drilled shaft excavation. The soft, fine grained silts can cause “squeezing” of an unsupported drilled shaft excavation. Relatively clean sand and gravel layers (<10 percent fines) were encountered between 50 and 60 feet bgs. Sands with fines contents less than 10 percent have a high potential to slough into unsupported shaft excavations. A high groundwater table at the site will increase the likelihood of heaving condition in the deeper clean sands. Temporary casing in conjunction with drilling fluid may be required to maintain stability of the drilled shaft excavation.

## **ATTACHMENTS**

This memo includes the following attachments:

1. Vicinity Map
2. Site and Exploration Plan
3. Log of Soil Boring TRM-1
4. Lab Test Results
5. Seismic Response Spectrum
6. Drilled Shaft Static Axial Resistance
7. Drilled Shaft Post-Seismic Axial Resistance



ATTACHMENT 1  
**Project Vicinity Map**  
Tacoma Power Monopole Project  
Tacoma, Washington











WSP USA  
851 SW 6th Ave, STE 1600  
Portland, OR 97204  
Telephone: 503 478 2831

## ATTACHMENT 3

**BORING NUMBER** TRM-1

**CLIENT** Tacoma Power **PROJECT NAME** Tacoma Power Monopole  
**PROJECT NUMBER** 185240B **PROJECT LOCATION** Tacoma, WA  
**DATE STARTED** 2020-02-11 **COMPLETED** 2020-02-11 **GROUND ELEVATION** ≈ 15 ft (±) **HOLE SIZE** 4.5 inches  
**DRILLING CONTRACTOR** Budinger Associates **GROUND WATER LEVELS:**  
**DRILLING EQUIPMENT** CME 75 **DURING DRILLING** 3.6 ft (±) **AFTER DRILLING** 3.6 ft (±)  
**DRILLING METHOD** Hollow Stem w/ Mud Stabilization at Sampling **EXPLORATION COORDINATES:**  
**LOGGED BY** J. Schober **CHECKED BY** C. Bales **NORTHING** 47° 14' 53.46" **EASTING** -122° 23' 41.65"

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE SAMPLE ID	RECOVERY %	BLOW COUNTS	REMARKS	▲ SPT N VALUE ▲			
							20	40	60	80
							PL	MC	LL	
0							20	40	60	80
							□ FINES CONTENT (%) □			
							20	40	60	80
		Asphalt Concrete				Begin drilling at 11:20a Temp = 40° F Overcast				
		SAND AND GRAVEL (SP-GP) pavement subbase, light brown [FILL]				GWT measured at 3.6 ft bgs at 11:30am				
		SAND with Silt (SP-SM) dark reddish brown, wet, loose, trace fine subangular to subrounded gravel, fine to coarse sand, non-plastic fines								
5			SPT S1		3 5 4	11:10 am N = 9 blows/ft Recovery = 9 in				
10			SPT S2		2 2 4 5	11:57 am N = 6 blows/ft Recovery = 12 in * Driller added mud and removed augers before sampling; Sampler driven 2 ft to account for slough in upper 0.5 ft; Top 0.4 ft of sample is disturbed, bottom 0.6 ft of sample is intact				
		SILT (ML) dark reddish brown, wet, loose, fine to coarse sand, non-plastic fines, trace organics, wood debris, sea shells								
15			SPT S3		- - - -	12:16 pm N = Weight of Hammer Recovery = 23 in				
		SILT (ML) gray, wet, very soft, fine sand, low to medium plasticity fines, trace organics								



WSP USA  
851 SW 6th Ave, STE 1600  
Portland, OR 97204  
Telephone: 503 478 2831

# BORING NUMBER TRM-1

CLIENT Tacoma Power

PROJECT NAME Tacoma Power Monopole

PROJECT NUMBER 185240B

PROJECT LOCATION Tacoma, WA

GEOTECHNICAL BOREHOLE LOGGING SHEET - ADOBE ILLUSTRATOR FORMAT\_CTB

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE SAMPLE ID	RECOVERY %	BLOW COUNTS	REMARKS	▲ SPT N VALUE ▲				
							20	40	60	80	
							PL	MC	LL		
							20	40	60	80	
							☐ FINES CONTENT (%) ☐				
							20	40	60	80	
20		SILT (ML) [cont.]									
		Sandy SILT (ML) gray, wet, very soft, fine sand, low plasticity fines, trace organics	S4		0 1 1 2	12:40 pm N = 2 blows/ft Recovery = 20 in					
25		Silty SAND (SM) dark reddish brown, wet, loose, fine to coarse sand, non-plastic fines, trace organics, wood debris, sea shells	S5		1 1 11 9	Time not recorded N = 12 blows/ft Recovery = 17 in			31	48	
30		similar to above, very loose to loose									
		Sandy SILT (ML) red to brown, wet, very soft, fine sand, low to medium plasticity fines, trace organics	S6		5 3 0 1	Time not recorded N = 3 blows/ft Recovery = 17 in			30	32	
35		SILT (ML) gray with black mottling, wet, medium stiff, fine sand, low to medium plasticity fines, trace organics and shells	S7		0 1 3 3	1:50 pm N = 4 blows/ft Recovery = 20 in			41		
						End drilling at 3:40 am End backfill at 4:15 am			32	39	



WSP USA  
851 SW 6th Ave, STE 1600  
Portland, OR 97204  
Telephone: 503 478 2831

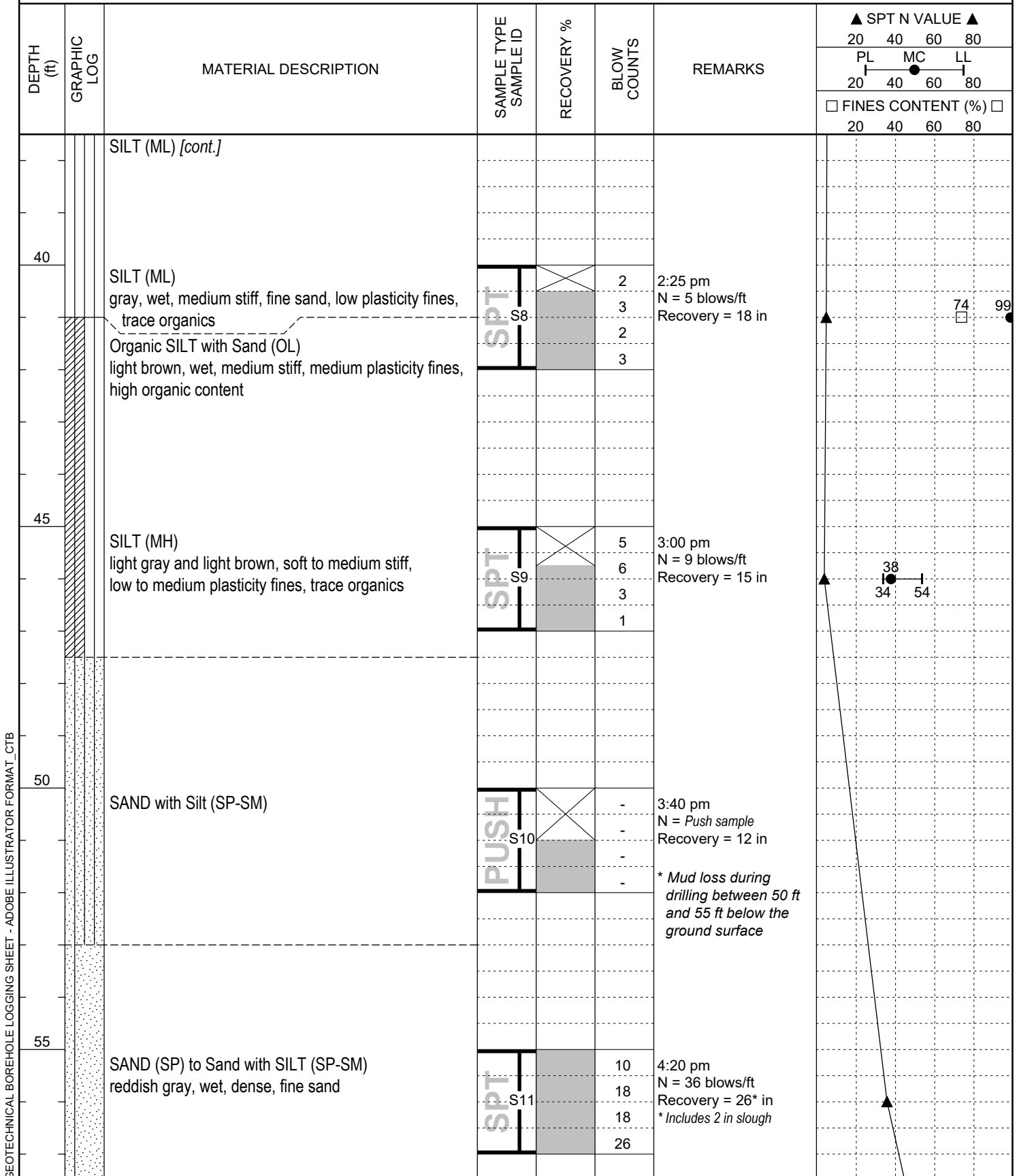
# BORING NUMBER TRM-1

CLIENT Tacoma Power

PROJECT NAME Tacoma Power Monopole

PROJECT NUMBER 185240B

PROJECT LOCATION Tacoma, WA





WSP USA  
851 SW 6th Ave, STE 1600  
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# BORING NUMBER TRM-1

CLIENT Tacoma Power

PROJECT NAME Tacoma Power Monopole

PROJECT NUMBER 185240B

PROJECT LOCATION Tacoma, WA

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE SAMPLE ID	RECOVERY %	BLOW COUNTS	REMARKS	▲ SPT N VALUE ▲					
							20	40	60	80		
							PL	MC	LL			
							20	40	60	80		
							□ FINES CONTENT (%) □	20	40	60	80	
		Sand with SILT (SP-SM) [cont.]										
60		SAND (SP) very dense	S12		8 25 31	5:20 pm N = 56 blows/ft Recovery = 18 in	2.7	22				
		Bottom of Exploration at 61.5 ft bgs										
65												
70												
75												



March 18, 2020  
HWA Project No. 2014-163-23 Task 300

**WSP USA**  
999 3<sup>rd</sup> Ave Suite 3200  
Seattle, Washington 98104

Attention: Mr. John Schober, P.E.

Subject: **Materials Laboratory Report**  
**P-200, Particle Size Analysis, and Atterberg Limits Testing**  
**Tacoma Rail Monopole**  
**Client Project No.: 185240B -Task 01**

Dear Mr. Schober;

In accordance with your request, HWA GeoSciences Inc. (HWA) performed laboratory testing for the above referenced project. Herein we present the results of our laboratory analyses, which are summarized on the attached Figures. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

**SAMPLE DESCRIPTION:** The subject samples were delivered to our laboratory on March 6, 2020 by WSP personnel. The samples were delivered in re-sealable plastic bags and were designated with exploration ID, sample number, and depth of sampling. The soil samples were classified using visual-manual methods. The descriptions may be found on the attached Summary of Material Properties, Figure 1.

**PERCENTAGE FINER THAN #200 SIEVE:** The percentage of material finer than the #200 sieve was determined for each specified sample in general accordance with ASTM D1140. The soil was oven dried and washed over a #200 sieve to determine the percentage of fines. The results are plotted on the attached Particle-Size Analysis of Soils Report, Figures 2 through 3, which also indicate the moisture content of the soil samples at the time of testing.

**PARTICLE SIZE ANALYSIS OF SOILS:** The particle size distribution of each specified sample was determined in general accordance with ASTM D6913 and D7928. The results are plotted on the attached Particle Size-Analysis of Soils Report, Figures 2 through 3, which also indicate the moisture content of the soil samples at the time of testing.

**LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS (ATTERBERG LIMITS):** The plasticity index of each specified sample was tested using method ASTM D4318, multi-point method. The results are reported on the attached Liquid Limit, Plastic Limit, and Plasticity Index Report, Figure 4.



**CLOSURE:** Experience has shown that test values on soil and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested samples may represent. HWA also makes no warranty as to how representative either the samples tested or the test results obtained are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

Sincerely,

**HWA GEOSCIENCES INC.**

Stephen Wright  
Materials Laboratory Manager

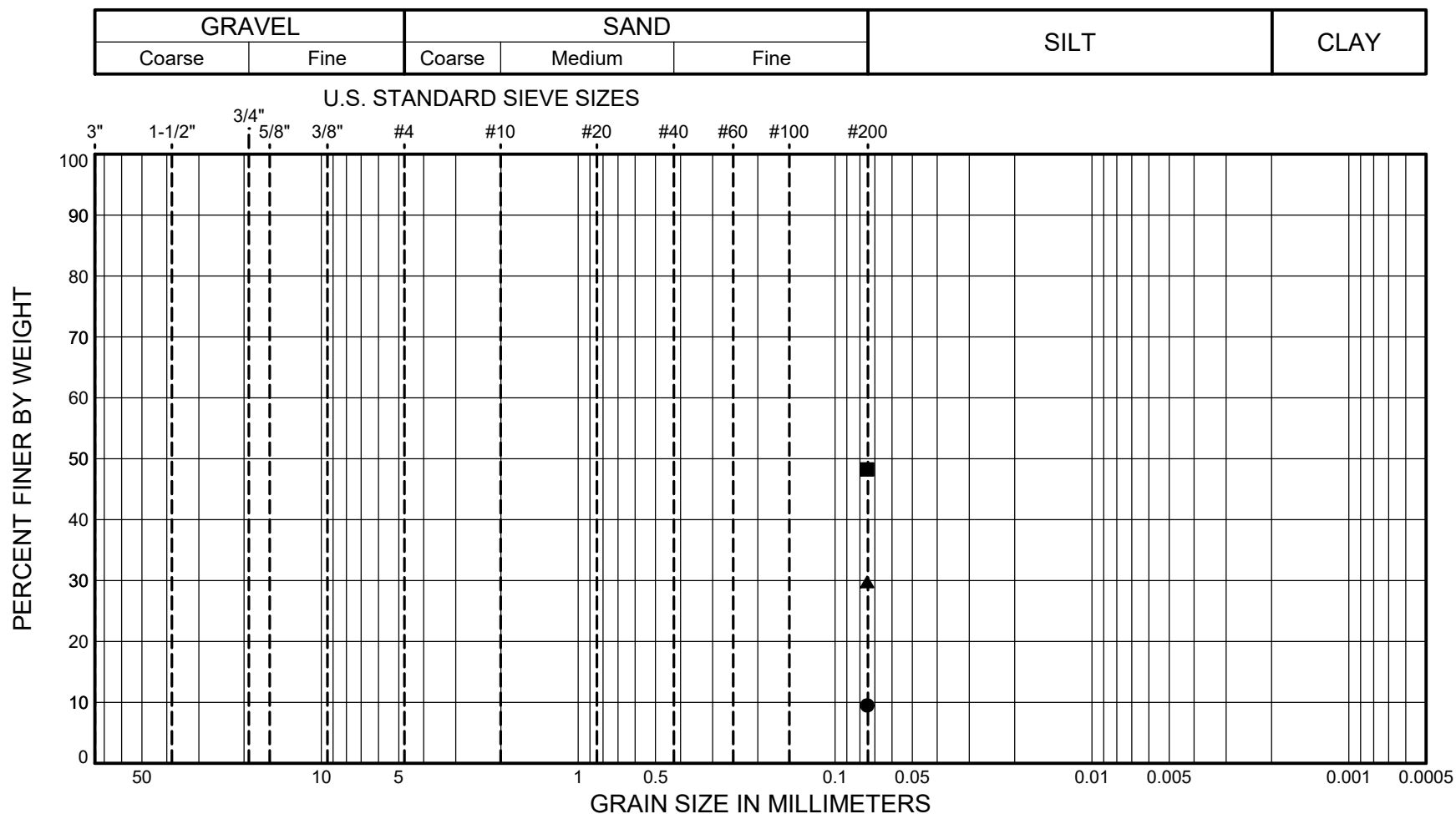
Steven E. Greene, L.G., L.E.G.  
Principal Engineering Geologist  
Vice President

Attachments:

Figure 1	Summary of Material Properties
Figures 2-3	Particle-Size Analysis of Soils
Figure 4	Liquid Limit, Plastic Limit and Plasticity Index of Soils

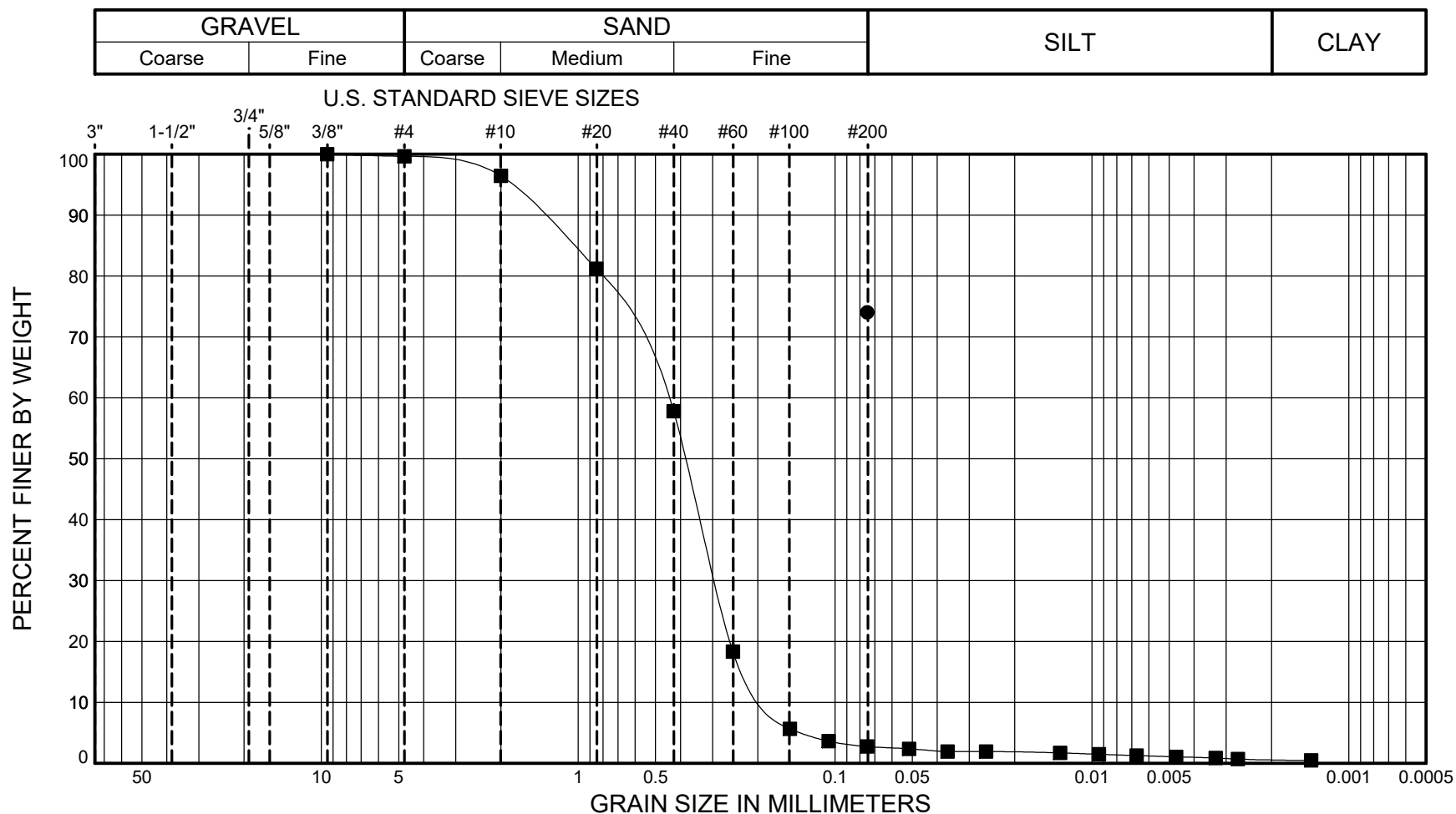
EXPLORATION DESIGNATION	TOP DEPTH (feet)	BOTTOM DEPTH (feet)	MOISTURE CONTENT (%)	ORGANIC CONTENT (%)	SPECIFIC GRAVITY	ATTERBERG LIMITS (%)			% GRAVEL	% SAND	% FINES	ASTM SOIL CLASSIFICATION	SAMPLE DESCRIPTION
						LL	PL	PI					
TRM-1,S-1	5.0	6.5	20.0								9.5	SP-SM	Dark olive-brown, poorly graded SAND with silt
TRM-1,S-2	15.0	17.0	49.7			35	29	6				ML	Dark grayish-brown, SILT
TRM-1,S-5	25.0	27.0	31.3								48.2	SM	Olive-brown, silty SAND
TRM-1,S-6A	30.0	30.8	31.7								29.8	SM	Dark olive-brown, silty SAND
TRM-1,S-7	35.0	37.0	40.7			39	32	7				ML	Grayish-brown, SILT
TRM-1,S-8B	40.9	42.0	98.8								74.0	OL	Dark grayish-brown, organic SILT with sand
TRM-1,S-9	45.0	47.0	37.7			54	34	20				MH	Dark grayish-brown, elastic SILT
TRM-1,S-12	60.0	61.5	21.6						0.4	96.9	2.7	SP	Very dark grayish-brown, poorly graded SAND

Notes: 1. This table summarizes information presented elsewhere in the report and should be used in conjunction with the report test, other graphs and tables, and the exploration logs.  
2. The soil classifications in this table are based on ASTM D2487 and D2488 as applicable.

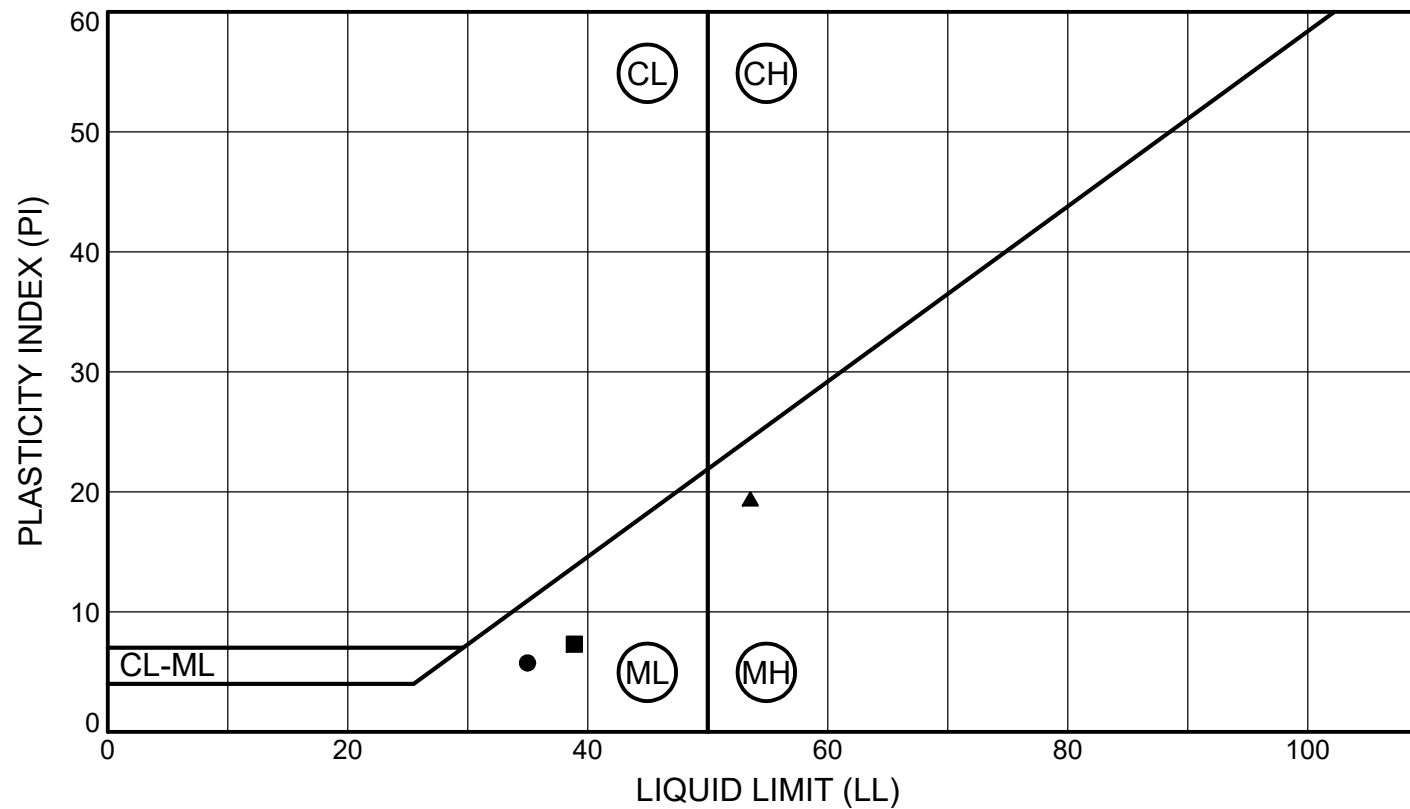


SYMBOL	SAMPLE		DEPTH ( ft.)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	TRM-1	S-1	5.0 - 6.5	(SP-SM) Dark olive-brown, poorly graded SAND with silt	20						9.5
■	TRM-1	S-5	25.0 - 27.0	(SM) Olive-brown, silty SAND	31						48.2
▲	TRM-1	S-6A	30.0 - 30.8	(SM) Dark olive-brown, silty SAND	32						29.8

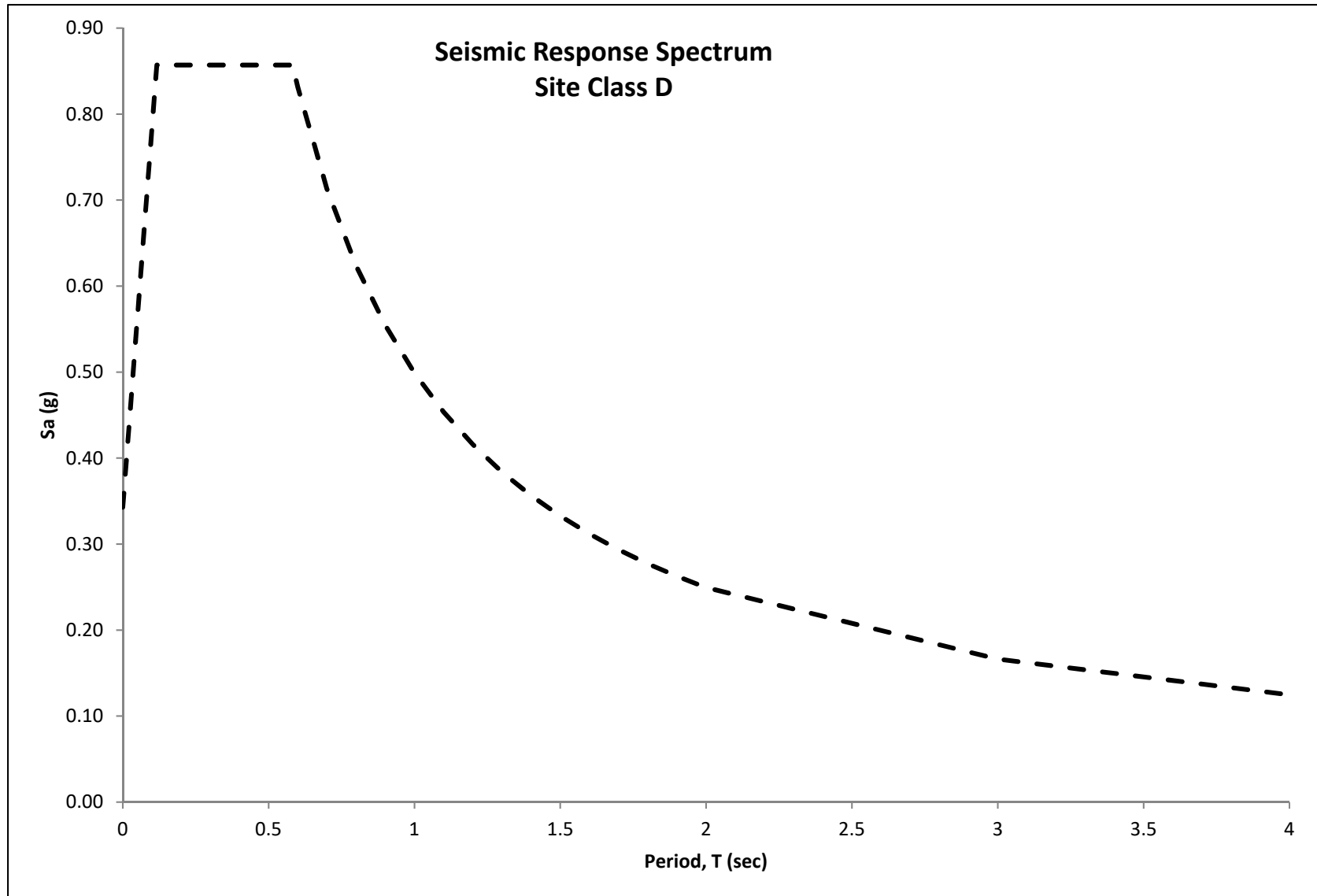




SYMBOL	SAMPLE		DEPTH ( ft.)	CLASSIFICATION OF SOIL- ASTM D2487 Group Symbol and Name	% MC	LL	PL	PI	Gravel %	Sand %	Fines %
●	TRM-1	S-8B	40.9 - 42.0	(OL) Dark grayish-brown, organic SILT with sand	99						74.0
■	TRM-1	S-12	60.0 - 61.5	(SP) Very dark grayish-brown, poorly graded SAND	22				0.4	96.9	2.7



SYMBOL	SAMPLE		DEPTH (ft)	CLASSIFICATION	% MC	LL	PL	PI	% Fines
●	TRM-1	S-2	15.0 - 17.0	(ML) Dark grayish-brown, SILT	50	35	29	6	
■	TRM-1	S-7	35.0 - 37.0	(ML) Grayish-brown, SILT	41	39	32	7	
▲	TRM-1	S-9	45.0 - 47.0	(MH) Dark grayish-brown, elastic SILT	38	54	34	20	



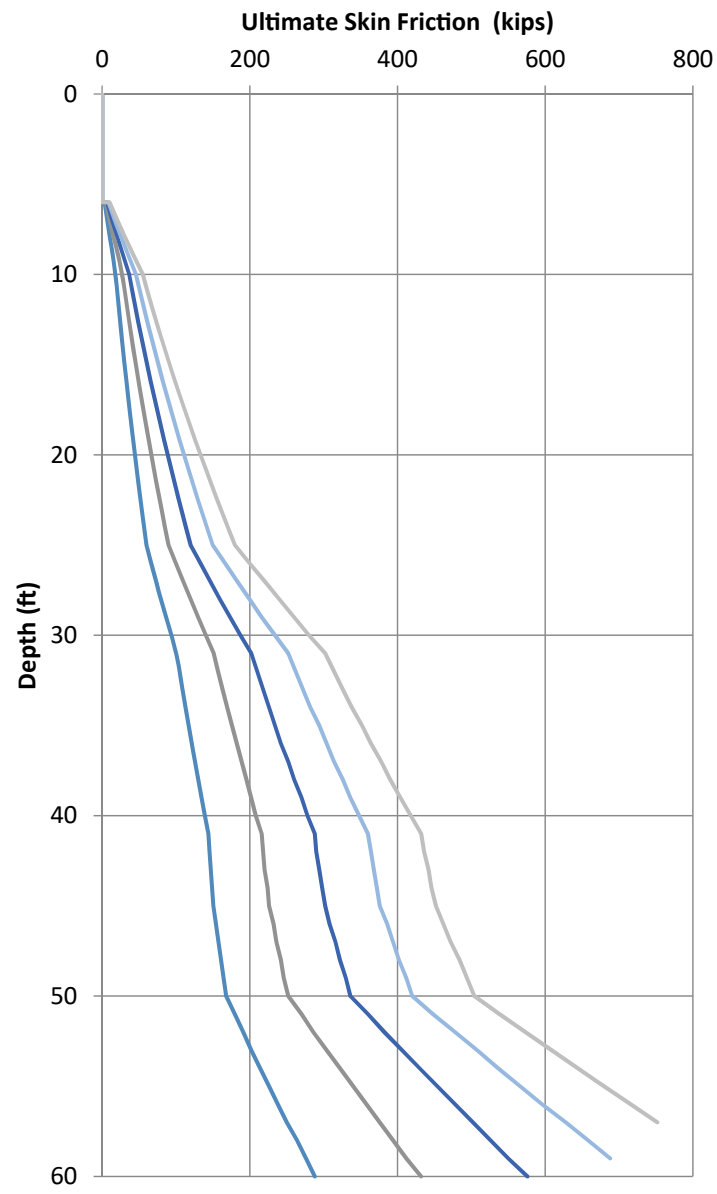
ATTACHMENT 5  
**Seismic Response Spectrum**  
*Tacoma Power Monopole Project*  
*Tacoma, Washington*



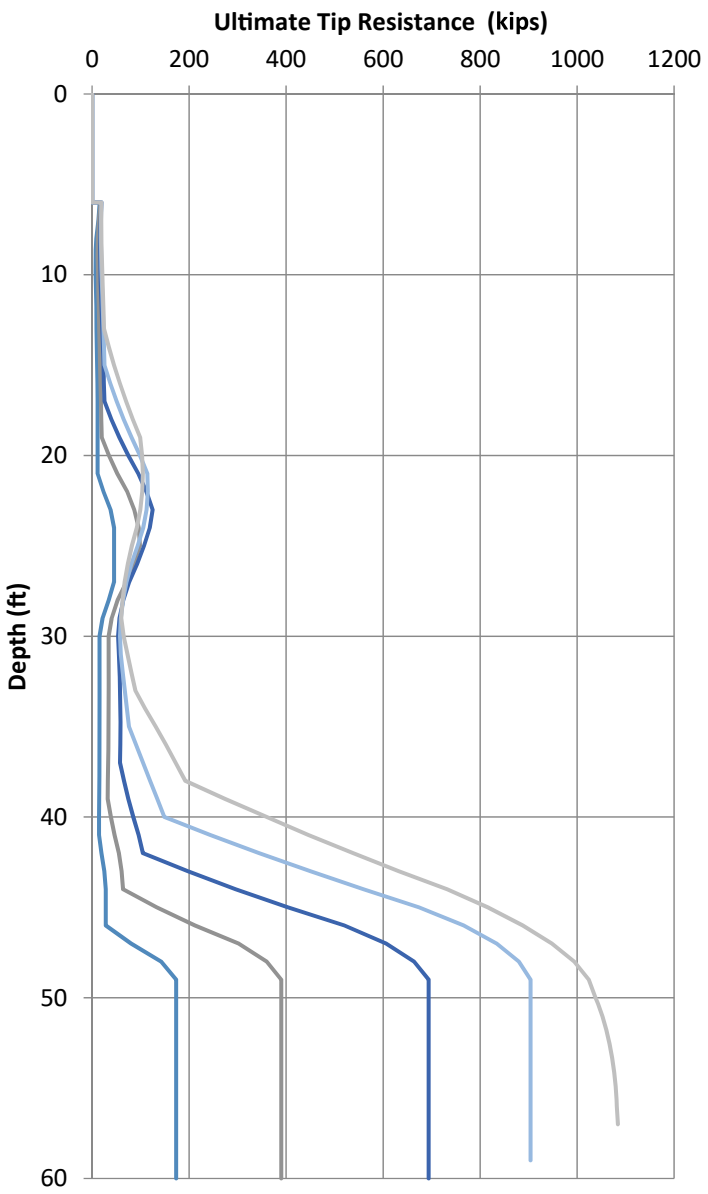


# Attachment 6: Drilled Shaft Static Axial Resistance

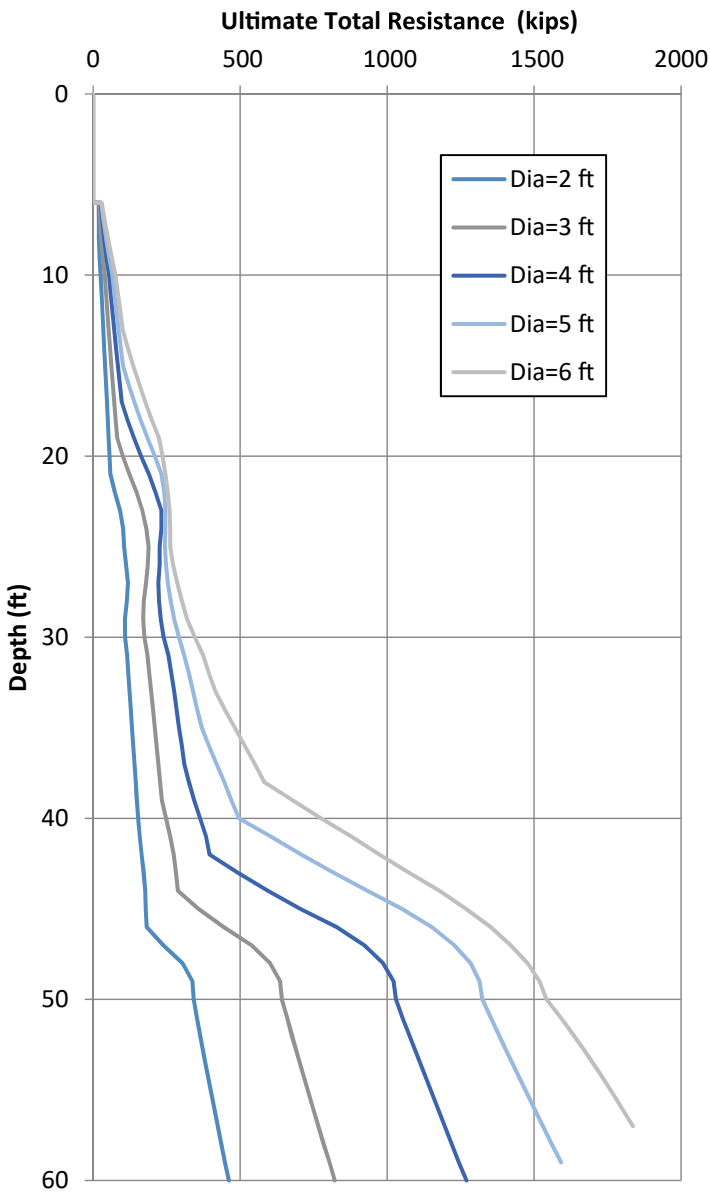
Nominal Side Resistance



Nominal Tip Resistance



Nominal Total Axial Resistance

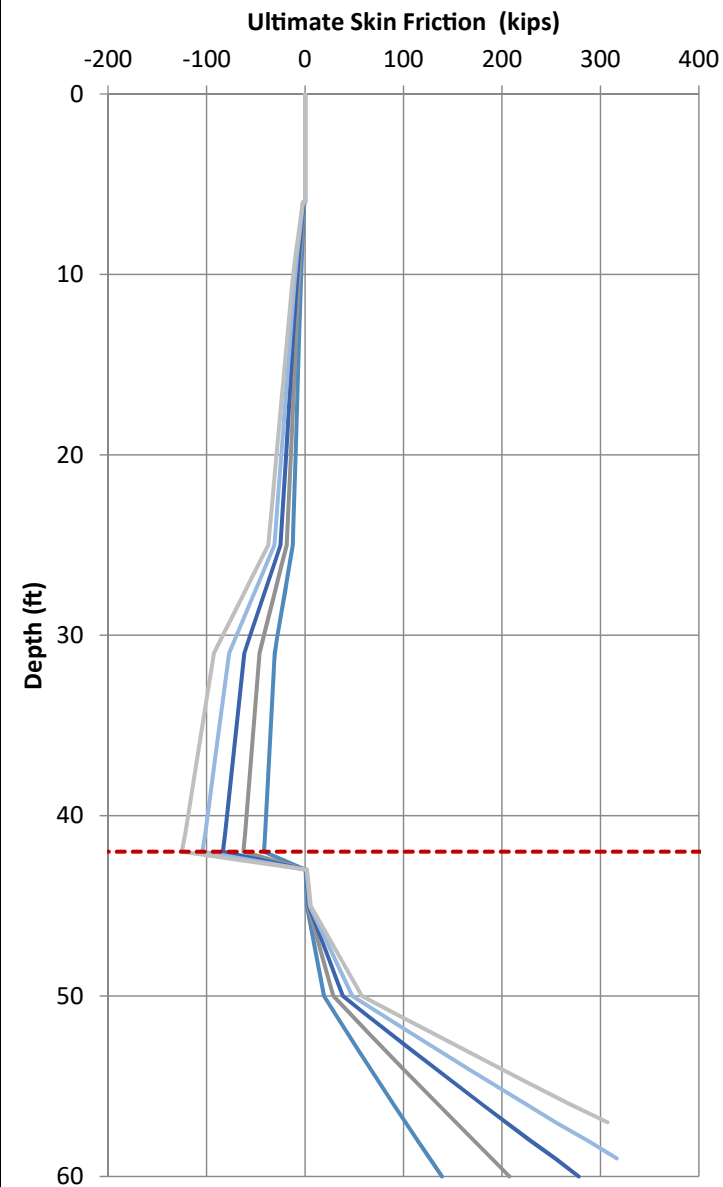


- GENERAL NOTES:**
- 1. Shaft axial capacity is ignored for the upper 5 ft of the shaft.
  - 2. The computed axial capacities provided in the above charts do not account for the net weight of the shafts (i.e., weight of concrete minus weight of the soil removed).
  - 3. Uplift resistance can be calculated from side resistance only and weight of the pile is not included in uplift resistance.

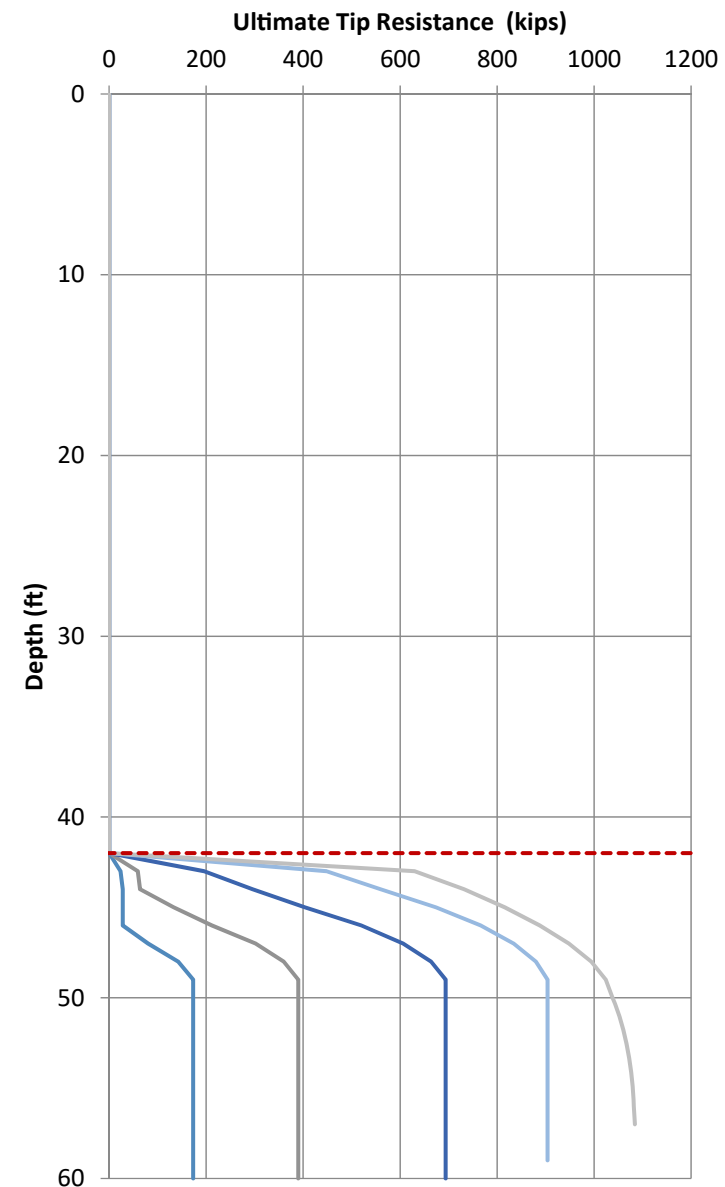


## Attachment 7: Drilled Shaft Post-Seismic Axial Resistance

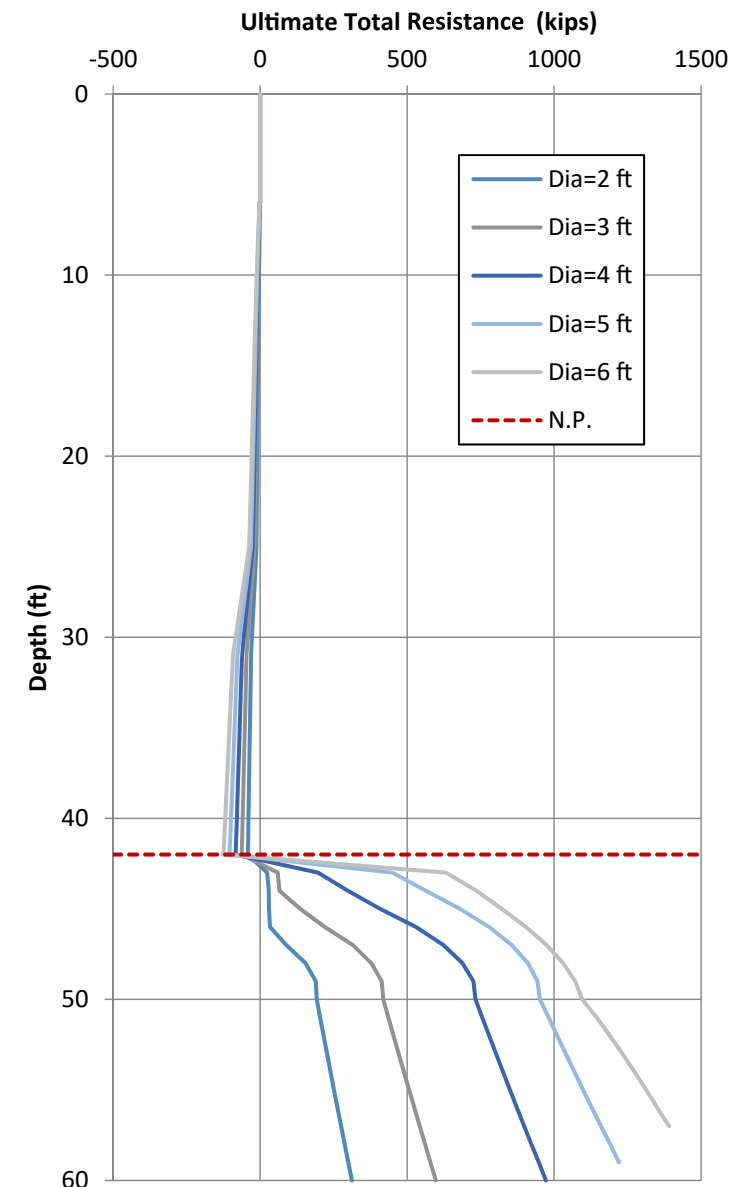
### Nominal Side Resistance



### Nominal Tip Resistance



### Nominal Total Axial Resistance

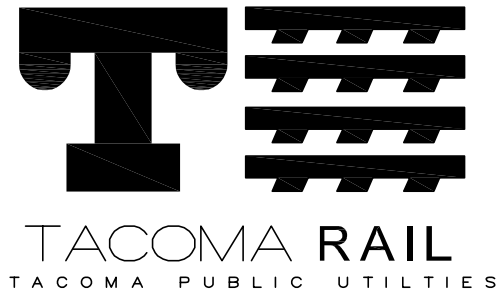


#### GENERAL NOTES:

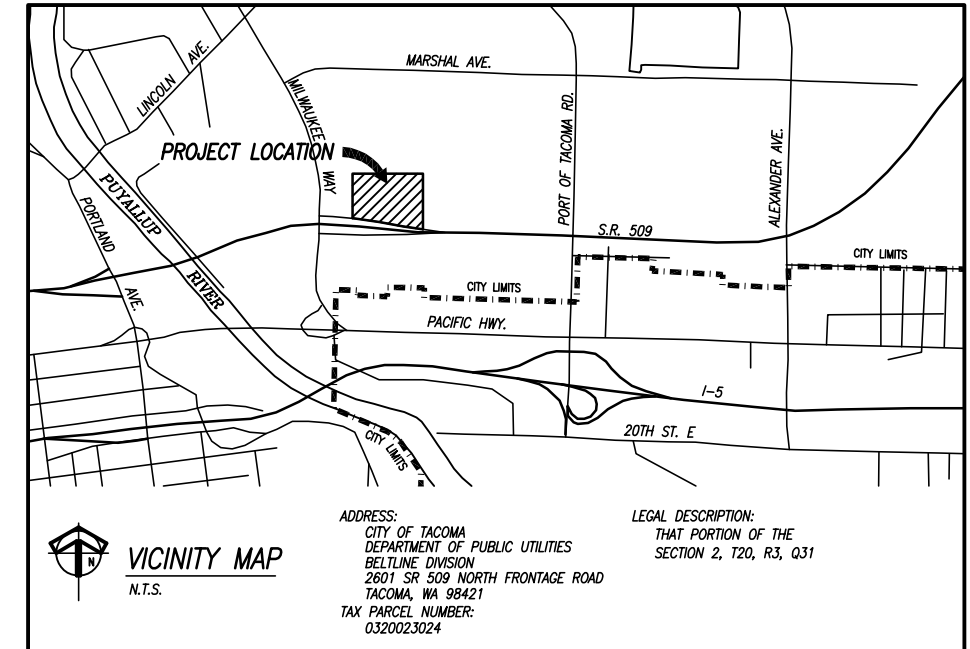
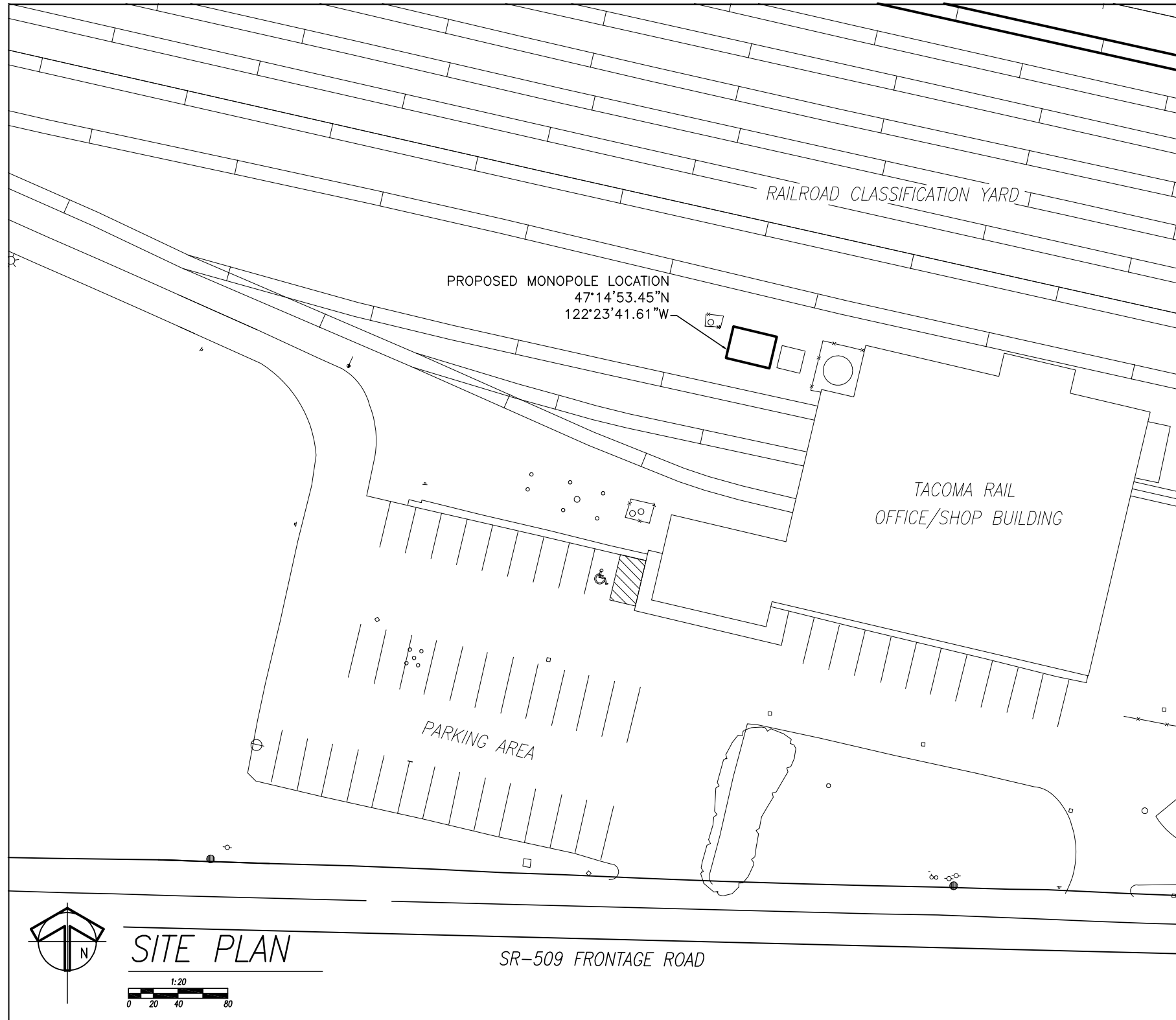
1. Shaft axial capacity is ignored for the upper 5 ft of the shaft.
2. The computed axial capacities provided in the above charts do not account for the net weight of the shafts (i.e., weight of concrete minus weight of the soil removed).
3. Uplift resistance can be calculated from side resistance only and weight of the pile is not included in uplift resistance.
4. N.P. is the neutral plane which indicates the point at which side resistance changes from negative to positive

# APPENDIX B

## DRAWINGS



# Tacoma Rail - Radio Monopole



## OWNER

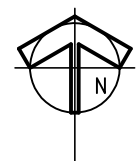
CITY OF TACOMA/TACOMA RAIL  
DEPARTMENT OF PUBLIC UTILITIES  
2601 SR 509 NORTH FRONTAGE ROAD  
TACOMA, WASHINGTON 98421  
CONTACT: KYLE KELLEM  
PHONE: (253) 377-3554

## PROJECT ENGINEER

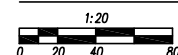
TACOMA PUBLIC UTILITIES  
PLANT ENGINEERING & SERVICES  
3628 SOUTH 35TH STREET  
TACOMA, WA 98409-3192  
CONTACT: KEVIN SMITH  
PHONE: (253) 355-6762

## NOTE:

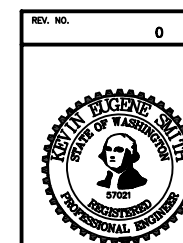
PROJECT IS IN A FLOOD ZONE (ZONE AE, PUYALLUP RIVER OVERTOPPING, BASE FLOOD ELEVATION = 17.0 FT. NAVD 88 DATUM). STRUCTURE SHALL BE WET FLOODPROOFED. ELECTRICAL CONNECTIONS SHALL BE WATERTIGHT UNDER SUBMERSION UP TO ELEVATION = 19.0 FT. NAVD 88 DATUM. ANY EQUIPMENT AT THE BASE OF THE TOWER SHALL BE RAISED ABOVE THIS ELEVATION.



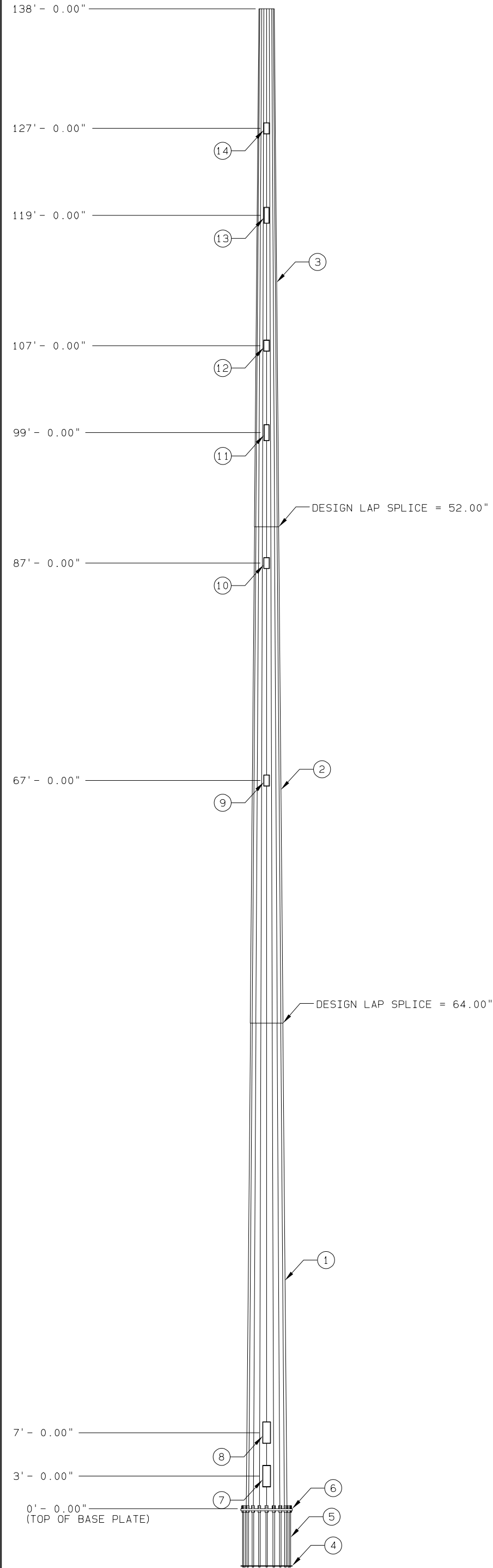
SITE PLAN



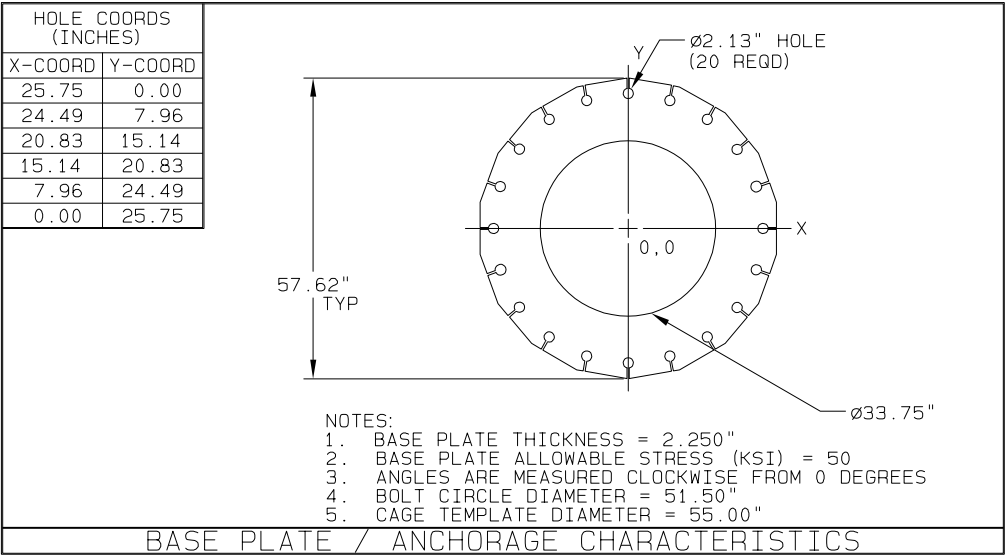
SR-509 FRONTAGE ROAD



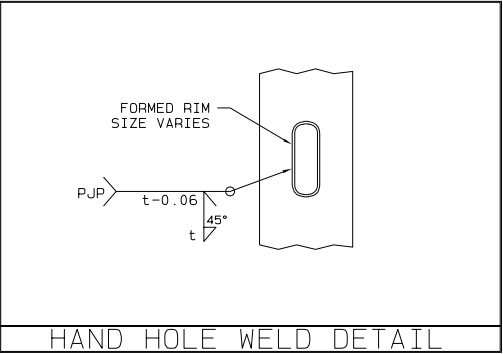
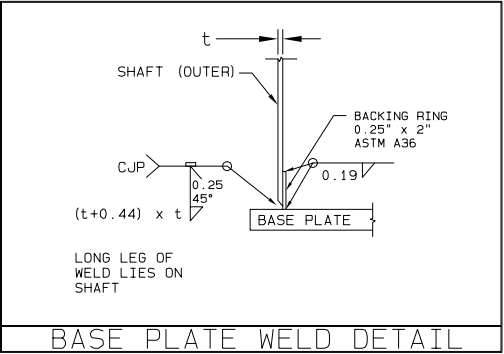
CITY OF TACOMA DEPARTMENT OF PUBLIC UTILITIES LIGHT DIVISION			
TACOMA RAIL RADIO MONOPOLE SITE PLAN			
REV. NO.	0	DESIGNED	DRAWN
		KES	TDM
		1/20/2021	STAMPED
APPROVED		DATE	DRAWING NO.
			RP64



ITEM ID	NO. REQD	FEATURES	UNIT WEIGHT (LBS)	WEIGHT (LBS)
1	1	SECTION A VALMONT S-22 0.375" THK (A572 GR65)	7,936	7,936
2	1	SECTION B VALMONT S-22 0.313" THK (A572 GR65)	5,144	5,144
3	1	SECTION C VALMONT S-22 0.219" THK (A572 GR65)	2,440	2,440
4	1	BOTTOM CAGE PLATE	103	103
5	20	1.75" ANCHOR BOLT, LENGTH=5.50' A615 GR75	59	1,168
6	1	BASE PLATE VALMONT S-56 2.250" THK (A572 GR50)	1,138	1,138
	1	TOP CAGE PLATE (REMOVE BEFORE SETTING POLE)	136	136
	1	SAFETY CLIMBING CABLE (LENGTH = 128.00')	99	99
	3	GROUNDING LUG	2	6
		GALVANIZING	347	347
	105	STEP AND CLIP (VALMONT STANDARD)	1	53
7	1	HAND HOLE HVY (9" x 24")	66	66
8	2	HAND HOLE HVY (9" x 24")	66	132
9	2	HAND HOLE STD (6" x 12")	11	22
10	2	HAND HOLE STD (6" x 12")	22	44
11	3	HAND HOLE STD (6" x 18")	18	54
12	2	HAND HOLE STD (6" x 12")	11	22
13	3	HAND HOLE STD (6" x 18")	18	54
14	2	HAND HOLE STD (6" x 12")	22	44
	1	POLE CAP	16	16



- NOTES:
- FACTORED REACTIONS FOR FOUNDATION DESIGN.  
MOMENT = 33.652 IN-KIPS  
SHEAR = 28.537 #  
VERTICAL = 33.086 #
  - GALVANIZED PER ASTM A-123.
  - DESIGN CRITERIA: ANSI/TIA 222-G ADDENDUM 2
  - THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:  
EXPOSURE CATEGORY = C  
STRUCTURE CLASSIFICATION = 3  
TOPOGRAPHY CATEGORY = 1  
EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS S<sub>s</sub> = 1.29  
EARTHQUAKE SPECTRAL RESPONSE ACCELERATION AT ONE SECOND S<sub>1</sub> = 0.50  
EARTHQUAKE SITE CLASS = 0  
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. CASE 4: SEISMIC  
E. EQUIPMENT
- | DESCRIPTION                   | ABP MTG HT. (FT) | ABP CENTROID HT. (FT) | WITHOUT ICE EPA WT (FT**2) | WITHOUT ICE WT (LBS) | WITH ICE EPA WT (FT**2) | WITH ICE WT (LBS) |
|-------------------------------|------------------|-----------------------|----------------------------|----------------------|-------------------------|-------------------|
| 1-5/8" X 7'-6" LIGHTNING ROD  | 138.00           | 141.75                | 0.47                       | 21                   | 1.55                    | 31                |
| 2-WHIP (3" X 15')             | 129.00           | 136.50                | 9.00                       | 76                   | 13.32                   | 176               |
| 2-SP1 PSA6                    | 129.00           | 129.00                | 17.62                      | 366                  | 25.04                   | 484               |
| 2-WHIP (3" X 15')             | 109.00           | 116.50                | 9.00                       | 76                   | 13.26                   | 174               |
| 2-SP1 PSA6                    | 109.00           | 109.00                | 17.62                      | 366                  | 24.90                   | 480               |
| 2-WHIP (3" X 15')             | 89.00            | 96.50                 | 9.00                       | 76                   | 13.18                   | 172               |
| 2-SP1 PSA6                    | 89.00            | 89.00                 | 17.62                      | 366                  | 24.76                   | 478               |
| 2-WHIP (3" X 15')             | 69.00            | 76.50                 | 9.00                       | 76                   | 13.08                   | 170               |
| 2-SP1 PSA6                    | 69.00            | 69.00                 | 17.62                      | 366                  | 24.58                   | 474               |
| 12-PANEL (8' X 18" X 3")      | 119.00           | 119.00                | 104.64                     | 1848                 | 117.96                  | 3336              |
| 12-RRH (22" X 18" X 12")      | 119.00           | 119.00                | 26.40                      | 480                  | 28.92                   | 996               |
| 3-COVP (20.22" X 18.86" X 7") | 119.00           | 119.00                | 5.25                       | 90                   | 5.82                    | 189               |
| 3-SP1 VFA12-HD                | 119.00           | 119.00                | 25.20                      | 1974                 | 43.68                   | 2679              |
| 12-PANEL (8' X 18" X 3")      | 99.00            | 99.00                 | 104.64                     | 1848                 | 117.72                  | 3300              |
| 12-RRH (22" X 18" X 12")      | 99.00            | 99.00                 | 26.40                      | 480                  | 28.92                   | 996               |
| 3-COVP (20.22" X 18.86" X 7") | 99.00            | 99.00                 | 5.25                       | 90                   | 5.79                    | 186               |
| 3-SP1 VFA12-HD                | 99.00            | 99.00                 | 25.20                      | 1974                 | 43.35                   | 2664              |
- FEEDLINES ARE PLACED INTERIOR TO POLE SHAFT (UNLESS NOTED OTHERWISE) .
  - TOTAL POLE HEIGHT IS 139 FT AGL .
  - ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE (APPROX. 1 FT AGL) .
  - 18 SIDED SHAFT
  - POLE IS DESIGNED TO 85% CAPACITY
  - DESIGN SATISFIES TIA-222-G & TIA-222-H STANDARDS.



651 W. GALENA PARK BLVD., SUITE 101  
DRAPER, UT 84020  
P: (801) 990-1775 F: (801) 990-1776  
VECTOR PROJECT: U1347-079-211

SECTION INFORMATION						REV				DESCRIPTION			
ITEM ID	LENGTH	BASE OD	TOP OD	THK	MATL	ORDER	DATE	BY	PROJECT	FILE ID	SCALE	DATE	ENGR
1	50' - 0.00"	45.00"	34.47"	0.375"	A572 65 KSI	492110				492110-P2RevG	NONE	03/31/21	AM71
2	50' - 0.00"	36.22"	25.69"	0.313"	A572 65 KSI	DESCRIPTION							
3	47' - 8.00"	27.04"	17.00"	0.219"	A572 65 KSI	TACOMA PUBLIC UTILITIES 138.0' POLE, SITE: TACOMA RAIL, TACOMA, WA							



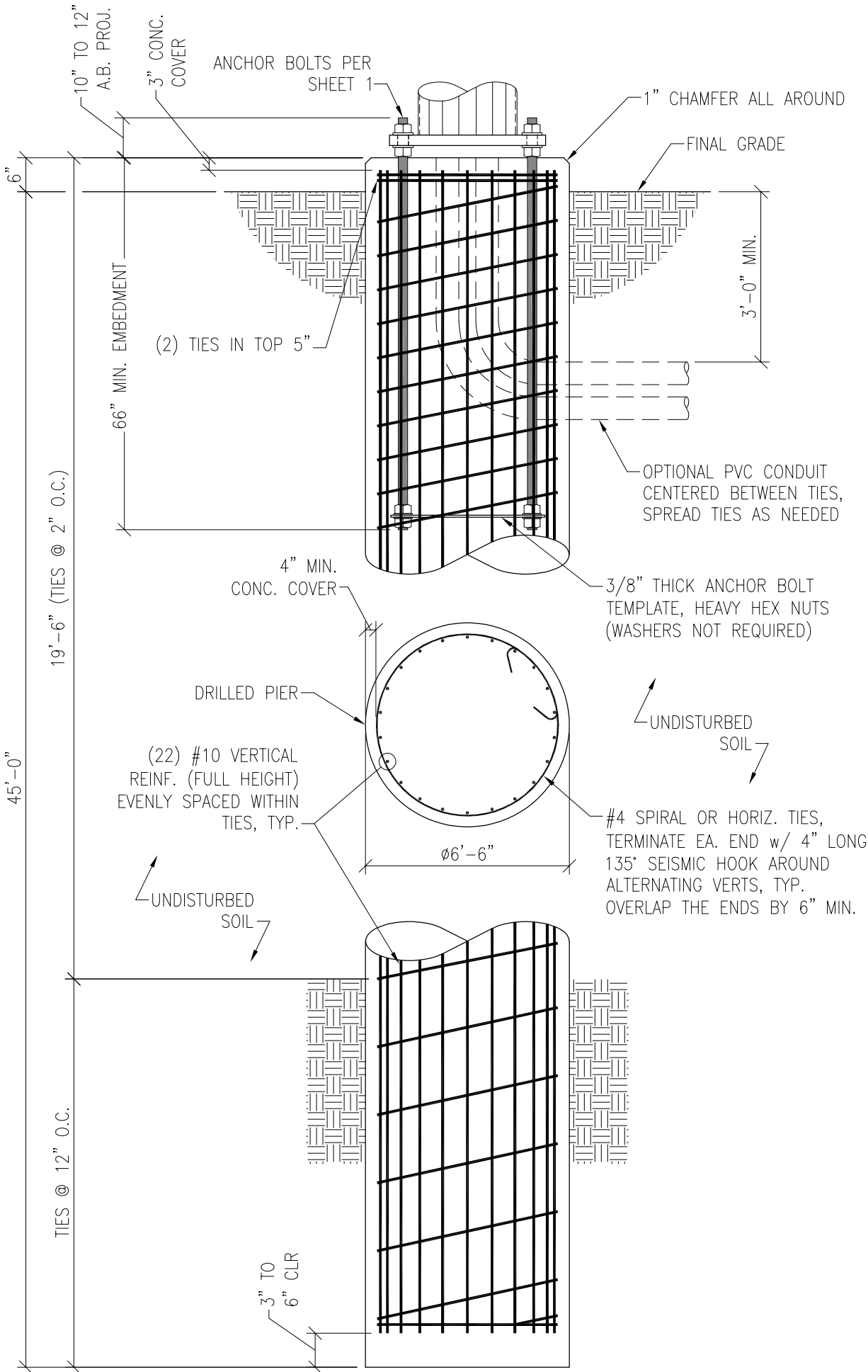


FOUNDATION NOTES:

1. FOUNDATION DESIGN IS BASED ON THE FOLLOWING TECHNICAL MEMORANDUM:
- WSP  
SUBJECT: TACOMA RAILYARD MONOPOLE  
DATE: APRIL 27, 2020
2. ALL CONCRETE SHALL USE TYPE II PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MINIMUM OF 6% ENTRAINED AIR (WHERE FROST DEPTH > 0"). CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.50. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 5" (+/- 1") UNLESS SPECIFIED IN THE TECHNICAL MEMORANDUM. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-14. FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS," LATEST EDITION.
3. REINFORCING STEEL SHALL CONFORM WITH THE REQUIREMENTS OF ASTM A-615, GRADE 60. ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS DRAWING.
4. INSTALLATION OF FOUNDATION MUST BE OBSERVED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER FIRM. GEOTECHNICAL ENGINEER TO PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING INSPECTOR FOR REVIEW AND RECORD PURPOSES.
5. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR INFORMATION REGARDING INSTALLATION METHOD, REQUIRED INSTALLATION EQUIPMENT, AND ALL OTHER REQUIREMENTS RELATED TO THE INSTALLATION OF THE PIER.
6. MONOPOLE MAY BE ERECTED 3-DAYS AFTER FOUNDATION IS INSTALLED AND ONCE CONCRETE STRENGTH IS AT LEAST 4000 PSI.

SPECIAL INSPECTIONS:

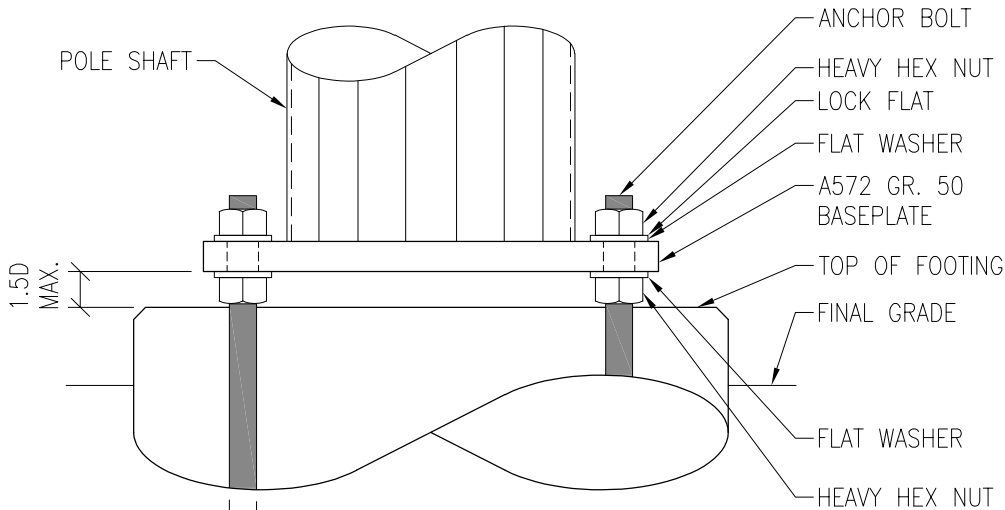
1. STEEL FABRICATION SHALL BE DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
2. NO FIELD WELDING SHALL BE PERMITTED
3. THE FOLLOWING SPECIAL INSPECTIONS SHALL BE REQUIRED PER CHAPTER 17A OF THE BUILDING CODE:
- CONTINUOUS SPECIAL INSPECTION OF DRILLING OPERATIONS FOR PIER FOUNDATIONS
  - CONTINUOUS SPECIAL INSPECTION TO VERIFY LOCATION, PLUMBNESS, DIAMETER, AND LENGTH OF PIER FOUNDATIONS
  - PERIODIC SPECIAL INSPECTION OF PLACEMENT OF REINFORCING STEEL
  - CONTINUOUS SPECIAL INSPECTION OF ANCHOR BOLTS PRIOR TO AND DURING CONCRETE PLACEMENT
  - CONTINUOUS SPECIAL INSPECTION OF CONCRETE PLACEMENT
  - SAMPLING & TESTING OF CONCRETE PER CHAPTER 17 OF THE BUILDING CODE TO VERIFY STRENGTH AND SLUMP
4. SPECIAL INSPECTION IS NOT REQUIRED FOR WORK OF A MINOR NATURE OR AS WARRANTED BY CONDITIONS IN THE JURISDICTION AS APPROVED BY THE BUILDING OFFICIAL. THUS, SPECIAL INSPECTION ITEMS ABOVE MAY BE WAIVED AS DEEMED APPROPRIATE BY THE BUILDING OFFICIAL.
5. NO STRUCTURAL OBSERVATION IS REQUIRED.



DRILLED PIER FOUNDATION

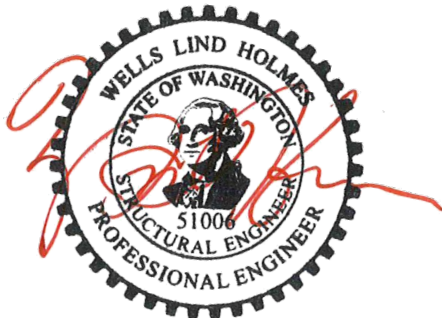
N.T.S.

1



N.T.S.

2



03/31/2021

**VECTOR**  
ENGINEERS

651 W. GALENA PARK BLVD., SUITE 101  
DRAPER, UT 84020  
P: (801) 990-1775 F: (801) 990-1776  
VECTOR PROJECT: U1347-079-211

valmont

REV ID	DATE	REV BY	DESCRIPTION
0	03/31/2021	CTF-VSE	

ORDER	PROJECT	FILE ID	SCALE	DATE	ENGR	DESCRIPTION
492110		492110-P2RevG	NONE	03/31/21	AM71	TACOMA PUBLIC UTILITIES 138.0' POLE, SITE: TACOMA RAIL, TACOMA, WA

# APPENDIX C

## VALMONT INSTALLATION INSTRUCTIONS

**COMMUNICATION POLE INSTALLATION GUIDELINE**

**POLES USED FOR SUPPORTING ANTENNAS**

**VALMONT RECOMMENDS THIS DOCUMENT BE RETAINED AT THE STRUCTURE SITE FOR POST INSTALLATION REFERENCE.**

**ASSEMBLY AND INSTALLATION OF VALMONT COMMUNICATION POLES**

The following information is intended to be a guide to the installing contractor. This information cannot be comprehensive enough to cover all situations or the details of all structures. Therefore, it is essential that the owner and contractor carefully plan all aspects of the installation process and do not rely solely on these guidelines to determine the steps to be followed. This is general information about standard Valmont products. Special features requested by individual owners may require unique installation methods; for these, the Contractor should be familiar with the owner's plans, specifications and the Valmont drawings included with the delivery of the structure. Due to the varied methods used by contractors in actual field operations, Valmont Industries Inc. cannot be liable for damage occurring during erection and installation.

A prudent step prior to any installation work is to review the site drawings and the Valmont pole drawings for any conflicting or ambiguous information, and resolve any such issues before proceeding with the installation. **If any questions arise concerning the structure, please contact Valmont Customer Service, at 1-800-547-2151.**

## **1. ANCHORAGE**

- 1.1 An evaluation of local soil conditions should be made by a competent geotechnical engineer. The foundation designer should provide a detailed drawing showing depth, diameter, concrete strength, reinforcing steel and the location of the reinforcing steel.
- 1.2 Upon arrival at the job site, the template(s) and the threaded portion of the anchor bolts (for poles using a base plate) should be checked for damage. The template(s) should be checked for bending or other damage which might disturb the bolt pattern. Anchor bolt threads should be checked with a nut to be sure the nut can be turned up or down the full length of the threaded portion of the bolt. The bolt circle and anchor bolt dimensions should be checked to verify they match the foundation design drawing prior to installation.
- 1.3 Concrete for anchor based pole foundations should be installed well ahead of the installation of the structure. Valmont recommends a 7 day minimum wait after concrete is poured before the structure is placed on the anchor bolts. If a shorter time is needed, the foundation designer should be contacted.

## COMMUNICATION POLE INSTALLATION GUIDELINE

- 1.4 In designing and installing the foundation, consideration should be given to the need for underground wiring and grounding as required by the owner.
- 1.5 The anchor bolts must not be welded to the reinforcing steel.
- 1.6 Projection of the anchor bolts should allow for the thickness of the base plate, nuts, (including the top nut(s) and the leveling nut) and for plumbing the structure. Valmont has calculated the projection; it is shown on any Valmont foundation design and Anchor Bolt Cage Assembly drawing. The threaded portion of the anchor bolt projection should be protected from concrete splatter that may inhibit the turning of a nut on the bolt. Wrapping the threads with heavy duct tape sometimes is a viable option to provide this protection.
- 1.7 The orientation of the anchor bolts in relation to the desired antenna and base port azimuths must be checked carefully using data from the Valmont drawings and the owner's plans.
- 1.8 Care must be taken to place the anchor bolts vertically and not to disturb their position while pouring concrete.
- 1.9 Leveling nuts should be adjusted before installing the pole. They should be in a horizontal plane, turned down on the threading to provide enough room on the bolts for the base plate thickness, the top nut(s) and at least an inch of projection for possible adjustment.
- 1.10 If the structure utilizes an embedded base, the installation must be modified from that described in previous Sections. Typically, the bottom (embedded) section of the pole is installed in the ground first. Prior to placement of the embedded section, the finish should be inspected and touched up as needed. The base section should be supported while the backfill (soil, rock or concrete as specified on the foundation design drawing) is placed and compacted (as necessary). The section should be checked periodically during this process to ensure the section remains plumb. Temporary guys or attachment to a crane may be used to supply this support, because there is no adjustment to this type of structure as there is with the leveling nuts on anchor bolt based poles. Care should be taken to ensure that the bottom section is vertical before proceeding with the erection of the rest of the pole.

## 2. ASSEMBLY (Figure 1)

### 2.1 General

- 2.1.1 When space around the foundation and lifting capabilities permit, it is preferable to assemble the completed structure on the ground and erect it as a unit (embedded structures are an exception described in Section 1.10). The sections of the pole should be aligned on the ground and supported, typically with wooden blocks, in such a manner that they will readily fit together. Care should be taken to prevent dirt, stones, etc. from getting trapped between the mating surfaces.

## COMMUNICATION POLE INSTALLATION GUIDELINE

- 2.1.2 If the structure is assembled vertically, extra care may be needed to ensure that all joints are properly assembled as indicated in the following sections. The weight of the sections should not be substituted for the jacking force required to make a joint.
- 2.1.3 Proper alignment of the pole sections is facilitated by the location of the identification tags. These are positioned on the sections so that aligning them on the same side for the entire pole length will ensure proper orientation of all components.

### 2.2 Slipover Joints (Figure 2)

- 2.2.1 To facilitate the assembly, mating surfaces may be lubricated. Care should be taken not to use a lubricant that will later leak from the joint and stain the pole. Soapy water has been used with marginal success, but a heavier lubricant like water soluble clear grease works well.
- 2.2.2 The drawings indicate the amount of overlap required. There are three values listed: minimum, design and maximum. The target value is the design splice value. The amount of overlap can be calculated by taking the maximum splice value and subtracting the measurement between the top of the ID tag (near the top of a section) to the bottom of the upper section. A good splice has an overlap value somewhere in between minimum and maximum overlap.
- 2.2.3 A number of methods may be considered for applying the necessary force to achieve a tight joint. The method selected may depend upon the size of the pole sections, the type of pole design and the equipment available to the contractor. The two most common methods are:
  - 2.2.3.1 Use of two ratchet chain hoists or similar devices on opposite sides of the pole shaft. These may pull on cables secured to the pole sections with a choker type hitch or attached to 1" bolts installed in the jacking nuts. Equal forces should be applied by the two hoists simultaneously. If the jacking nuts are used, forces must be applied more than 1.5 inches from the surface of the pole shaft and the forces must be distributed equally across all the jacking nuts at each joint. **Although a common method, this technique should be limited to only the smallest poles. The diameter at the joint is used to indicate which sections can be assembled (i.e. poles with a diameter of approximately 12.0 inches or less at the joint) using these pulling devices.** Each device should have a minimum capacity of 12,000 pounds (6 tons) each.
  - 2.2.3.2 Use of a hydraulic jacking device (Figure 3). These devices are available for rent or purchase from Valmont. Other sources such as contractors or electric utilities may have hydraulic jacking devices available. These devices have proved to be very useful for making sound, high quality joints. These devices generally have a large capacity (up to 90,000 pounds) to ensure proper seating of the sections even if the sections are slightly out of round or not aligned precisely. For these reasons, Valmont recommends the use of such a device for

## COMMUNICATION POLE INSTALLATION GUIDELINE

making slip joints. Further information on hydraulic jacking devices can be found in Valmont specification: *I-13 Hydraulic Jacking Device*.

- 2.2.4 Both methods described above call for the forces to be applied as a slow steady pull. Joint tightening will be facilitated by oscillating the advancing section with a crane or forklift, or by striking the pole in the joint area with a hammer using a cushioning wooden block.

The jacking forces should be applied until the joint is tight with no more than small gaps (which can sometimes be caused by a slight mismatch in the shapes of the mating sections), if any exist. Generally, any gaps should be small, certainly less than 0.25". Gaps are more likely at the "points" or bend lines of the shaft (especially the points at the seam weld location(s)). Gaps are only an indication of a loose joint. The real test of a tight joint occurs when increasing the jacking force does not result in a further engagement between the sections. For example, suppose an installer applies 30,000 pounds of jacking force and notices that the joint has stopped moving (engaging further). If 31,000 pounds is applied and no further engagement is noticed then the joint is tight. Under this condition we would not expect to see gaps that exceed 0.125" except perhaps at the seam weld.

A final check should be made to ensure the specified minimum overlap has been achieved. Anywhere between minimum and maximum splice is considered an acceptable joint provided that a tight joint is achieved.

There may be other methods to generate and apply the force needed to make a slip joint, but regardless of the method used some judgment about the quality of the joint is required of the installer. Valmont's definition of an adequate slip joint includes these items:

- 2.2.4.1 The joint must reach at least minimum slip and no more than maximum slip (as indicated on the drawings).
- 2.2.4.2 At least the minimum jacking force should be applied (indicated on the erection drawing, usually 25,000 pounds).
- 2.2.4.3 The joint must be tight as indicated by the lack of any movement on the joint under the applied jacking load with no excessive gaps.

### WARNING:

FAILURE TO MEET THESE CRITERIA MAY VOID THE MANUFACTURER'S WARRANTY. **THE PROPER JACKING FORCE IS NOT DEFINED OR LIMITED BY THE CAPACITY OF THE JACKING SYSTEM UNTIL THE APPLIED FORCE MEETS 90,000 POUNDS (OR 24,000 POUNDS FOR DIAMETERS LESS THAN 12 INCHES).**

## COMMUNICATION POLE INSTALLATION GUIDELINE

### 2.3 Electrical Wiring

- 2.3.1 Prior to the attachment of any equipment at the top of the pole, any required wiring should be strung through the pole.
- 2.3.2 Antenna poles incorporate one or more wire supports, such as hooks, that carry the load of the wires running down the structure. These wire supports are typically accessible through hand holes and located inside the structure.

### 2.4 Attachment of Antenna Mounting Assemblies

- 2.4.1 The bolts for these connections should be tightened to a snug tight condition, as described in Section 5.2, or as specified by the antenna mount manufacturer.

### 2.5 Pole Steps

#### 2.5.1 Standard Steps Used by Valmont (Figure 4)

- 2.5.1.1 Screw one nut on to each step as far as possible.
- 2.5.1.2 Insert the other nut behind the lug on the pole and screw the step in until the step touches the surface of the pole shaft.
- 2.5.1.3 Tighten the outer nut against the lug sufficiently to prevent it from loosening. **Caution:** Do not over-tighten the step to the point of damaging the threads or the lug.

#### 2.5.2 Other steps requested by the owner.

- 2.5.2.1 A wide variety of steps are available. Generally, the step selection is worked out between the owner and Valmont before fabrication of the pole begins. It is important that the step and the lug welded to the pole are matched. **If the step cannot be fully inserted into the lug, or the step has excessive play when inserted in the lug, call Valmont immediately, certainly before any climbing is done.**

### 2.6 Safety Climb Device

- 2.6.1 Lugs for attachment of the safety cable are located near (usually 12 feet above) the base of the pole and near the top of the pole.
- 2.6.2 Lugs for mounting the safety cable guides are located along the pole, typically at 21 to 28 foot intervals. The hard rubber guides should be installed on these lugs and the safety cable installed through each guide.



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- 2.6.3 Installation instructions will be furnished by the supplier of the safety climb device that attaches to the cable. Read and follow those instructions.

### 3 CORROSION PROTECTION

- 3.1 After assembly, any damage to the protective coating on the structure should be repaired. This can be accomplished with zinc rich paint or "hot stick" for galvanized structures, or touch-up paint for painted structures. "Hot stick" is preferred since it more nearly matches the performance of the original galvanized finish. "Hot stick" may be purchased under the brand name "Galv-Alloy" where welding supplies are sold. Zinc rich paints (96% zinc) such as the brand names "Zinc Bright" and "ZRC" can be purchased at welding supply stores, industrial supply stores or paint stores.
- 3.2 Welding in the field on a galvanized surface should be done only with extreme caution. **If the weld material is contaminated with zinc it does not provide a structural weld.** Welding can also damage the finish on the opposite side of the surface being welded. If welding is unavoidable, it should be done by an AWS qualified welder who has experience welding on galvanized surfaces. After welding, the damage to the finish should be repaired. Lastly, welding on a galvanized surface creates some unique problems for the welder. There is more splatter and sparks compared to welding black or unfinished steel. **The fumes created from welding on a galvanized surface can be hazardous.** The welder should be aware of these characteristics and take steps to ensure their safety and the safety of others in the area. **Unauthorized welding will void the manufacturer's warranty.**

### 4 ERECTION (Figure 5)

As stated previously, there are 2 common methods of erection: 1) assembly of the structure on the ground and lifting the entire structure or 2) lifting the section(s) and making a joint in the air. The amount of room and the size of the equipment available will dictate the best method of erection. Either method can be used for anchor based or embedded poles. There are some precautions that should be taken:

- 4.1 Prior to lifting the structure, any slipover joint below the crane attachment point should be securely lashed to prevent any possibility of separation during lifting. This is usually accomplished by bolting a bar across the slipover joint using the 1 inch jacking nuts on both sides of the sections. For additional safety, a hook capable of supporting the entire weight can be attached to the hand hole opening and connected to the crane attachment point.



## COMMUNICATION POLE INSTALLATION GUIDELINE

- 4.2 The lifting crane must be attached:
- 4.2.1 To the main pole member, not to appurtenances such as pole step lugs, the pole top strap, etc.
  - 4.2.2 Above the center of gravity of the entire assembly including the weight of all equipment mounted on the structure before erection.
  - 4.2.3 As high as possible since higher attachment will result in more nearly vertical alignment of the assembly while suspended above the foundation or the mating section.
- 4.3 Care should be taken to operate the crane very smoothly since jerkiness will cause impact loads which could damage some portion of the assembly.
- 4.4 If the structure is anchor based, the top nuts should be turned down as quickly as possible after placement on the leveling nuts. If the pole is eccentrically loaded, the nuts on the side opposite the direction of eccentricity should be installed first.
- 4.5 Embedded poles can be installed by placing the embedded portion in the hole and holding the structure with the crane. The structure can then be plumbed and the hole backfilled while being supported by the crane. Temporary guying has also been used to support the structure while the backfill is placed. The guys offer some opportunity to make adjustments to maintain the plumbness of the structure.
- 4.6 The structure should be measured after placement on (or in) the foundation to be sure it is plumb. Ideally, the top of the pole should be directly over the bottom of the pole, making the maximum deviation of the pole shaft from a true vertical line occur somewhere in the middle of the pole. The leveling nuts can be adjusted to accomplish this alignment by raising the leveling nuts on the anchor bolts in the direction the pole is "leaning". Note that a small amount of rotation of a nut will represent a number of inches of movement at the top of the pole. The taller the pole the more sensitive the adjustment of the leveling nuts will be.
- 4.7 After plumbing the structure, all anchor bolt nuts should first be uniformly snugged against the base plate (both the top nuts and the leveling nuts). Then some provisions may be made to prevent unauthorized loosening of the nuts. The two most common methods are:
- 4.7.1 A slight amount of additional tightening (beyond snug tight) of each top nut.
  - 4.7.2 Peening or slight deformation of the threads to prevent the turning of the nut on the anchor bolt.
- 4.8 Valmont's design generally does not require grouting under the base plate. Grouting is sometimes specified by the foundation designer. If this is the case, there will be a note on the foundation drawing. If the owner decides the structure needs to be grouted, provisions to vent the inside of the

## COMMUNICATION POLE INSTALLATION GUIDELINE

structure and to prevent standing water (from either condensation or precipitation) inside or underneath the pole should be made. **Grouting should be done only after the owner is satisfied with the structure and the installation. Covering the leveling nuts with grout removes access to the only adjustment method you have to plumb the structure.**

## 5 ATTACHMENT OF EQUIPMENT

5.1 Components of these assemblies may be affected by vibrations induced aerodynamically or from other sources. Although rare, these vibrations can be severe enough to cause damage. This is believed to be more likely to happen when a structure is installed without the equipment it is intended to support. All such equipment contributes damping to the system. It is considered good practice for installers to attach at least some equipment on the structure at the time of installation.

5.2 Valmont requires that all our tower/monopole bolted connections (ASTM A325, SAE Gr. 5 and anchor bolts) be tightened to a snug tight condition, defined as follows:

“A snug tight condition is defined as the tightness that exists when all plies in a joint are in firm contact. This may be attained by a few impacts of an impact wrench or the full effort of a man using an ordinary spud wrench.” (“Specification for ASTM A325 or A490 Bolts,” Manual of Steel Construction – Allowable Stress Design, AISC, 9<sup>th</sup> Edition, 1989, p. 5-273.)

This is our typical and default requirement. Any special tightening requirements will be specifically called out on the installation drawing.

5.3 Galvanized A325 bolts shall not be reused. Other A325 bolts may be reused if approved by the engineer responsible. Retightening previously tightened bolts that may have been loosened by the tightening of adjacent bolts shall not be considered as a reuse.

**COMMUNICATION POLE INSTALLATION GUIDELINE**

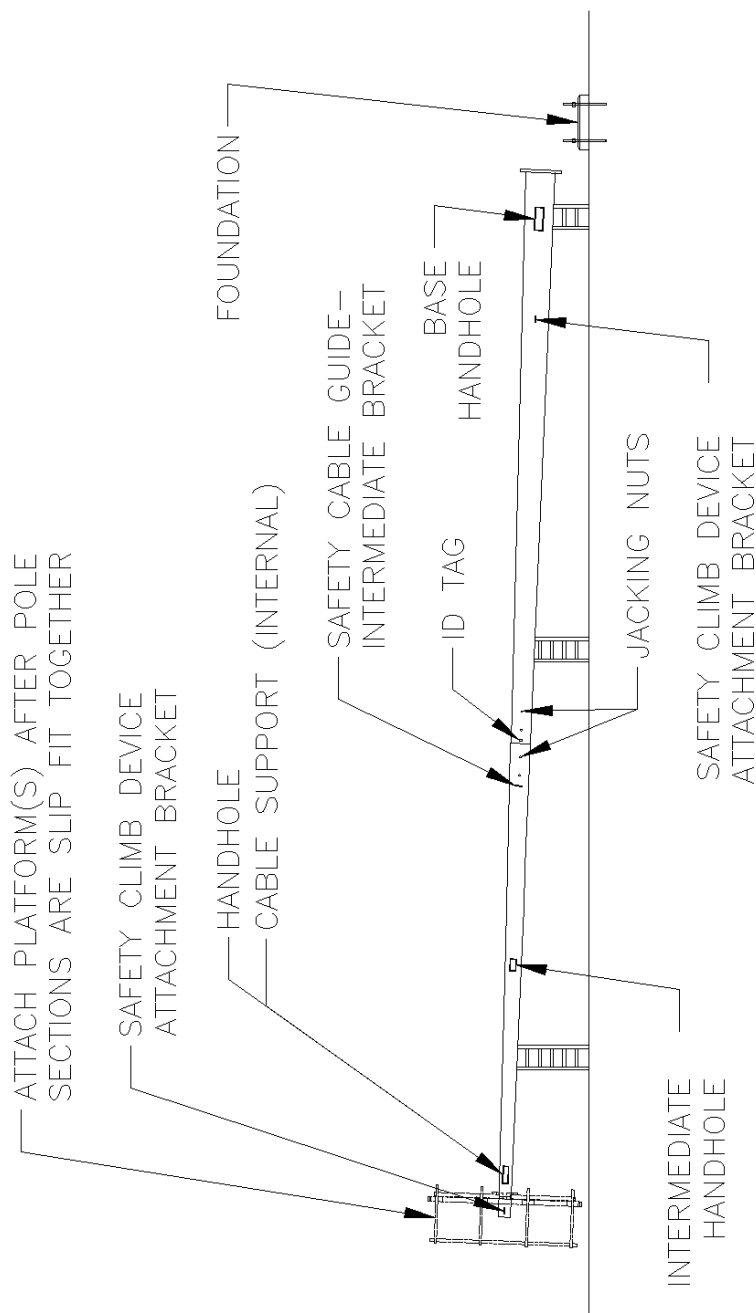
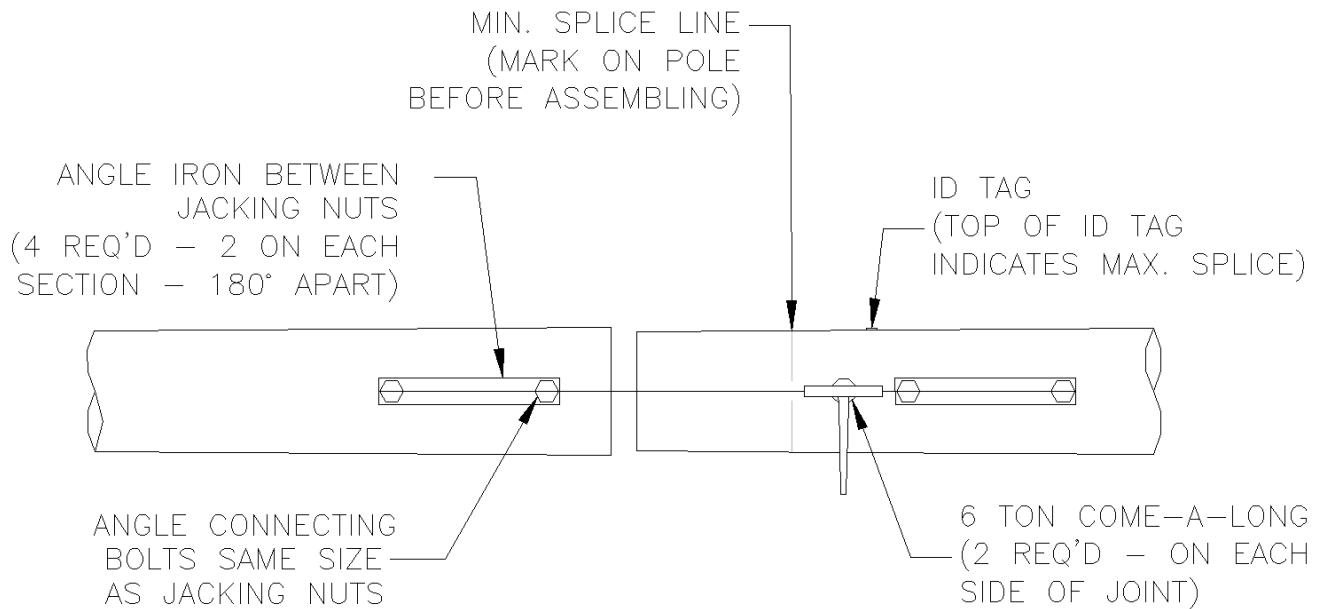


Figure 1: Assembly

HOOK-UP PRIOR TO SLIPFIT

**COMMUNICATION POLE INSTALLATION GUIDELINE**



SLIPFIT COMPLETE

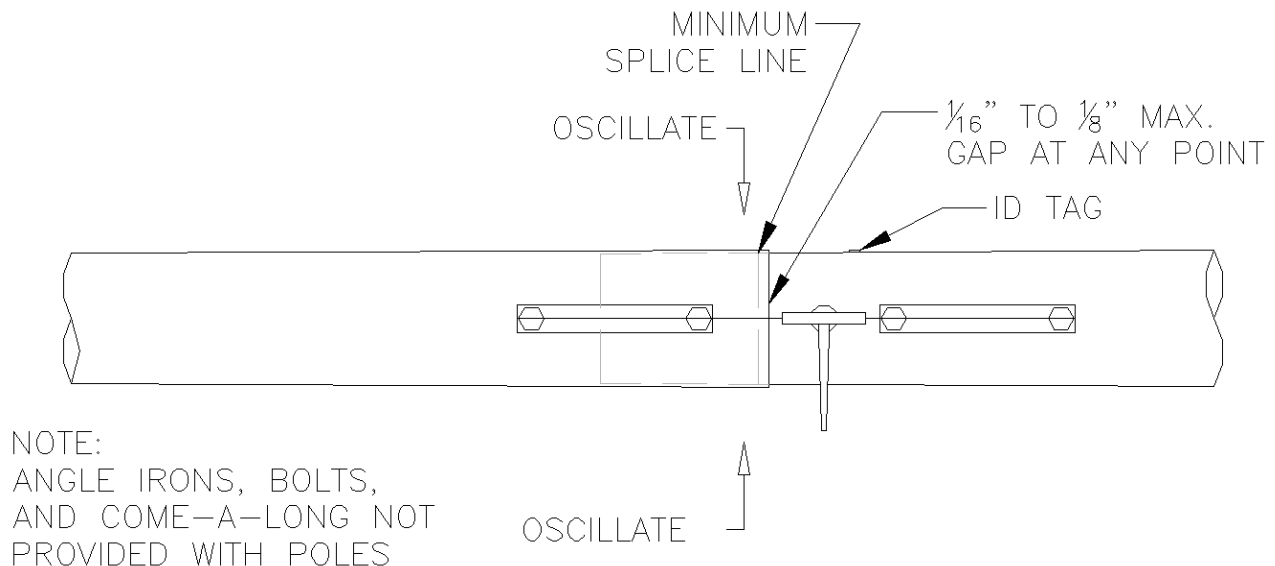


Figure 2: Slip Fit Connection

**COMMUNICATION POLE INSTALLATION GUIDELINE**

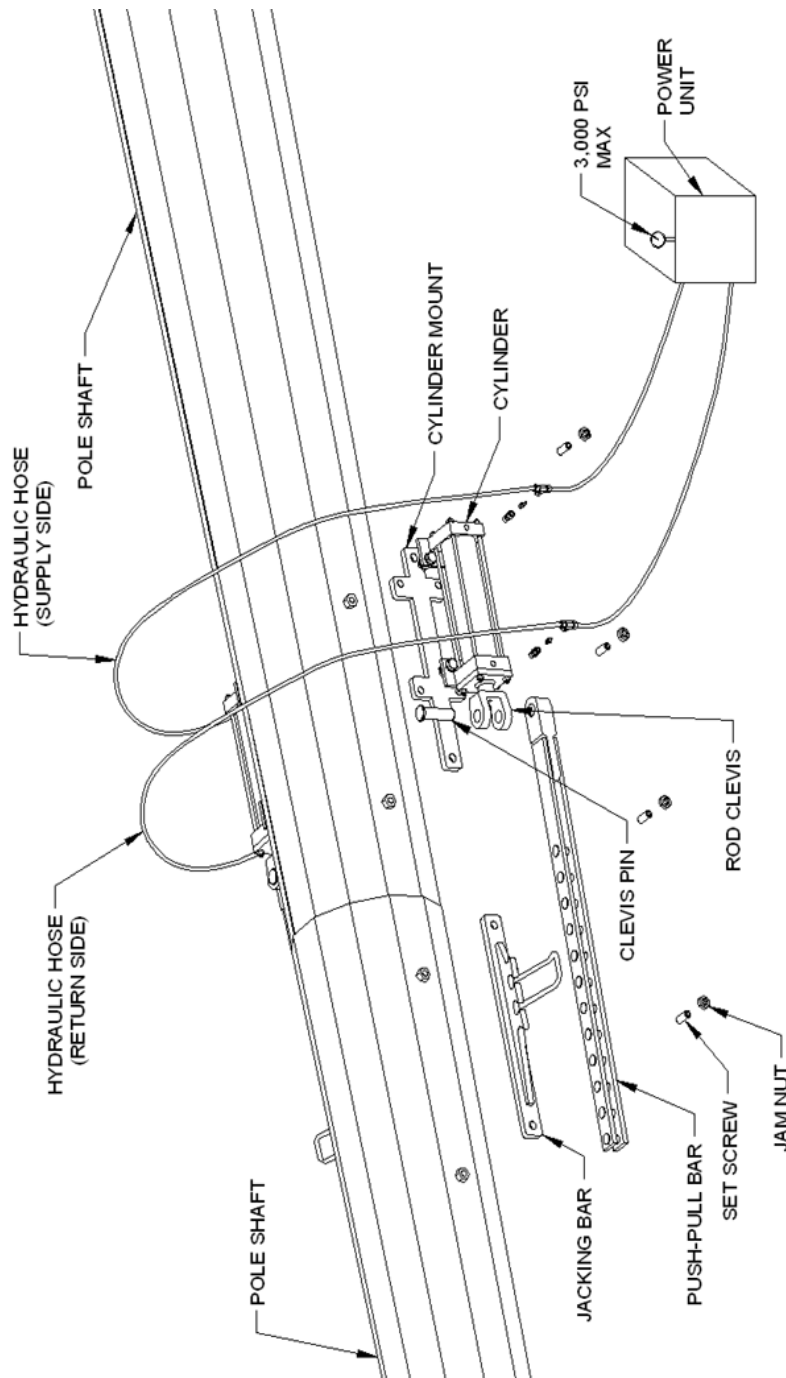


Figure 3: Jacking Device

**COMMUNICATION POLE INSTALLATION GUIDELINE**

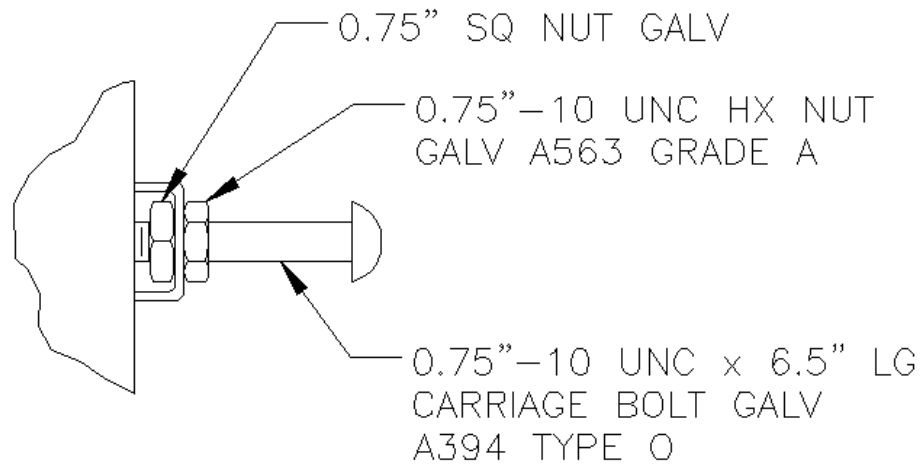


Figure 4: Pole Steps

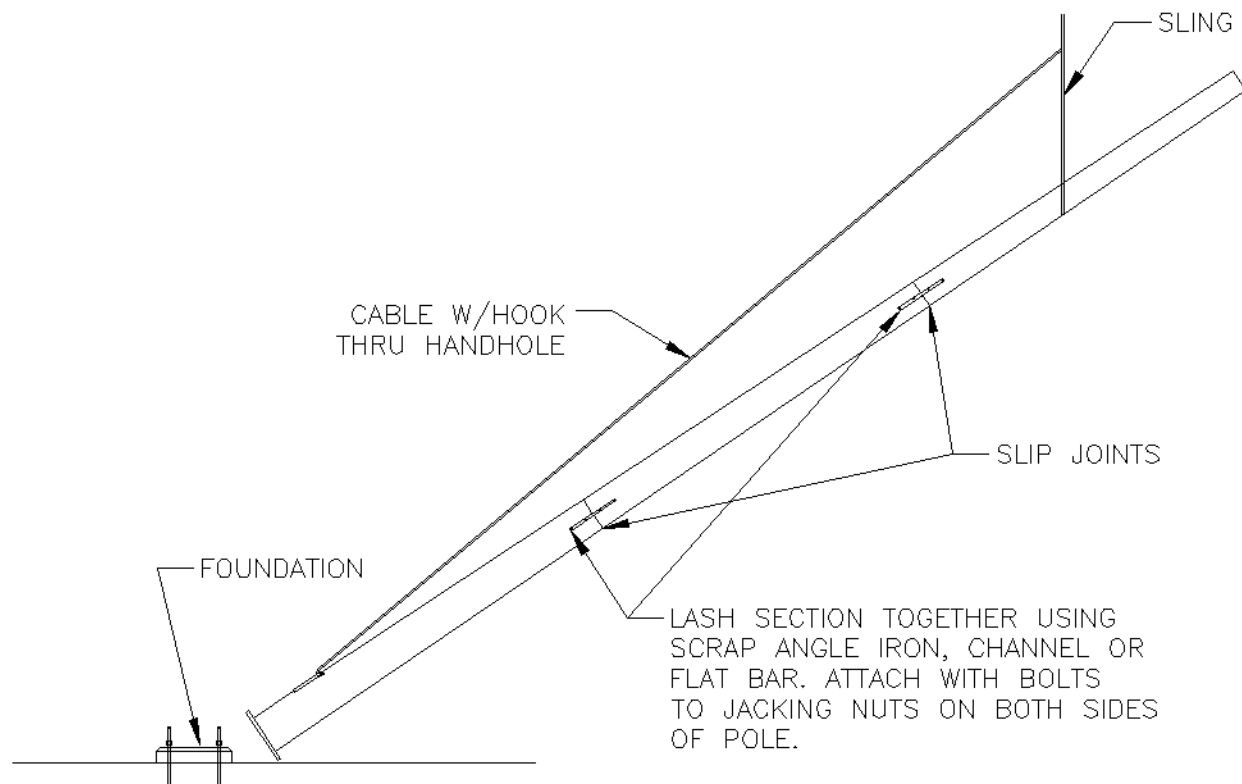


Figure 5: Erection

# APPENDIX D

## TACOMA RAIL STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

**COPY**



# **Stormwater Pollution Prevention Plan (SWPPP)**

**Tacoma Rail  
2601 SR 509 North Frontage Road  
Tacoma, WA 98421**

## **SWPPP Contacts:**

Dan Knouff, Asset Manager  
[dan.knouff@ci.tacoma.wa.us](mailto:dan.knouff@ci.tacoma.wa.us)

Mike Rhubright, Senior Environmental Specialist  
[mike.rhubright@ci.tacoma.wa.us](mailto:mike.rhubright@ci.tacoma.wa.us)

Jeromy Adams, Environmental Compliance Manager  
[jadams2@ci.tacoma.wa.us](mailto:jadams2@ci.tacoma.wa.us)

**September 20<sup>th</sup>, 2018**



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## **1.0 Stormwater Pollution Prevention Plan Introduction**

The National Pollutant Discharge Elimination System (NPDES) Industrial Stormwater General Permit requires Stormwater Pollution Prevention Plans (SWPPPs) for qualifying facilities. SWPPPs are a key component for the protection of stormwater quality from pollution generating activities at work sites. SWPPPs are also effective employee training tools for Best Management Practices (BMPs).

The portion of this SWPPP that will be most applicable for daily activities can be found in the Operational BMPs and Source Control BMPs. The information in these sections is important and **must** be implemented as they are required by Federal and/or State law in addition to City of Tacoma Municipal Code. Some areas will be **bolded** and *italicized* so they stand out and get noticed. Please pay careful attention to these areas and ask for clarification about anything that is unclear. Tacoma Rail's success in implementing this required plan is dependent upon all employees understanding what is expected of them and that they accept personal responsibility for protecting stormwater quality.

## **1.1 Stormwater Pollution Prevention Plan Purpose and Objectives**

*The major objectives of this SWPPP are:*

*To identify pollutant sources and implement Best Management Practices (BMPs) that will minimize their contact with stormwater.*

*To prevent violations of surface water and groundwater quality*

*To meet the obligations of Tacoma Rail's NPDES Industrial Stormwater General Permit in addition to honoring the requirements of the City of Tacoma's NPDES Phase 1 Municipal Stormwater Permit*

## **1.2 Legal Foundation**

The federal Clean Water Act (CWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. The National Pollutant Discharge Elimination System (NPDES) permit program is one of the mechanisms for achieving the goals of the CWA. The NPDES Permit program is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 RCW. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

On December 3, 2014 State Department of Ecology issued the current Industrial Stormwater General Permit (ISWGP). The Industrial Stormwater General Permit requires Tacoma Rail to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for its main facility. The SWPPP contains information on all the Best Management Practices (BMPs) employed at 2601 SR 509 North Frontage Road, Tacoma.

### **1.3 SWPPP Location and Accessibility**

The SWPPP will be located in Tacoma Rail's administration stairwell at 2601 SR 509 North Frontage Road, Tacoma, WA 98421. It is available for review during normal business hours, Monday through Friday. To coordinate a review of the SWPPP contact Dan Knouff, Asset Manager, at (253) 377-0561 or dan.knouff@cityoftacoma.org.

In addition, Tacoma Power's Environmental Compliance section will maintain a duplicate file at the ABN 3NW, 3628 South 35th Street, Tacoma, WA 98409. For information, contact Mike Rhubright, Sr. Environmental Specialist, at (253) 502-8520.

### **1.4 SWPPP Review, Revisions, and Implementation**

Tacoma Rail management and Tacoma Power's Environmental Compliance section will periodically review the SWPPP to ensure that it is kept current, and is updated as necessary to reflect pertinent changes to the facility operation. The SWPPP may be amended to reflect the modification or addition of BMPs intended to protect surface water quality. This SWPPP may be amended at any time by either the Asset Manager or the Environmental Compliance section; however, all revisions must be agreed upon by both parties prior to implementation.

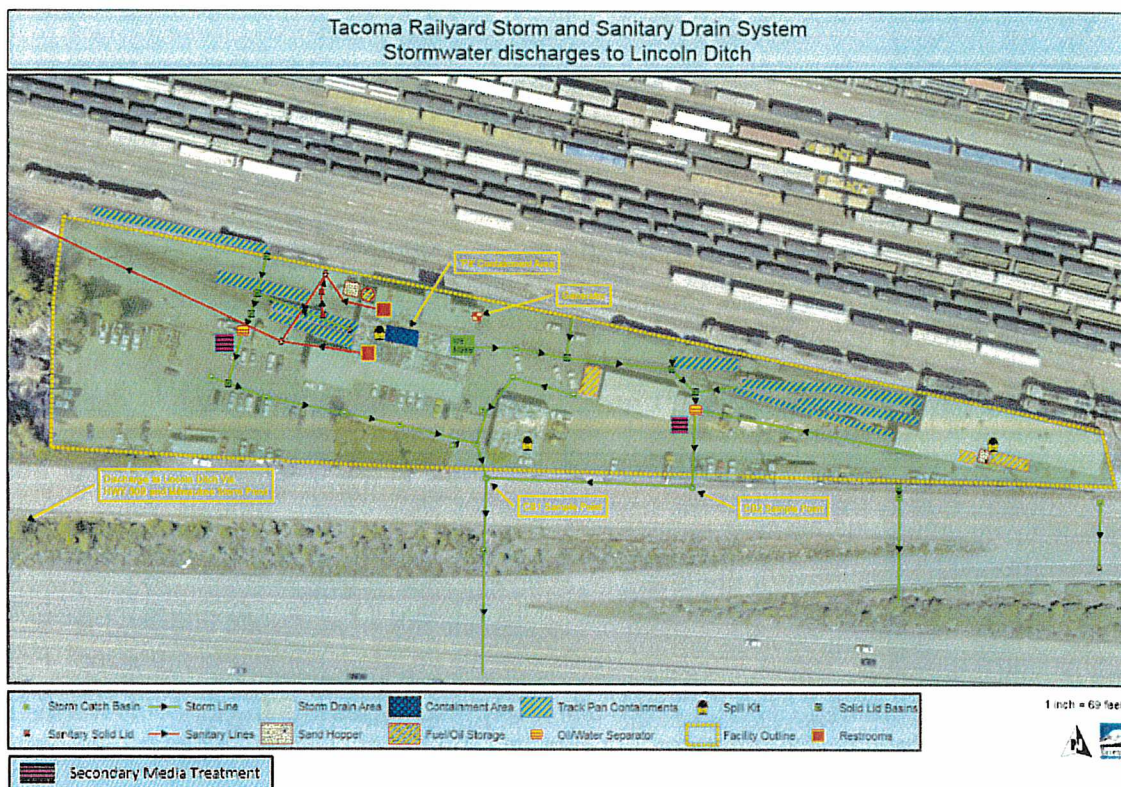
### **1.5 Record keeping**

Tacoma Rail will maintain a file that will contain the SWPPP, copies of all inspection reports, and any other relevant documents, photos, or written correspondence. In addition, Tacoma Power Environmental Compliance will keep a duplicate copy of relevant documents at 3628 South 35<sup>th</sup> Street in Tacoma.

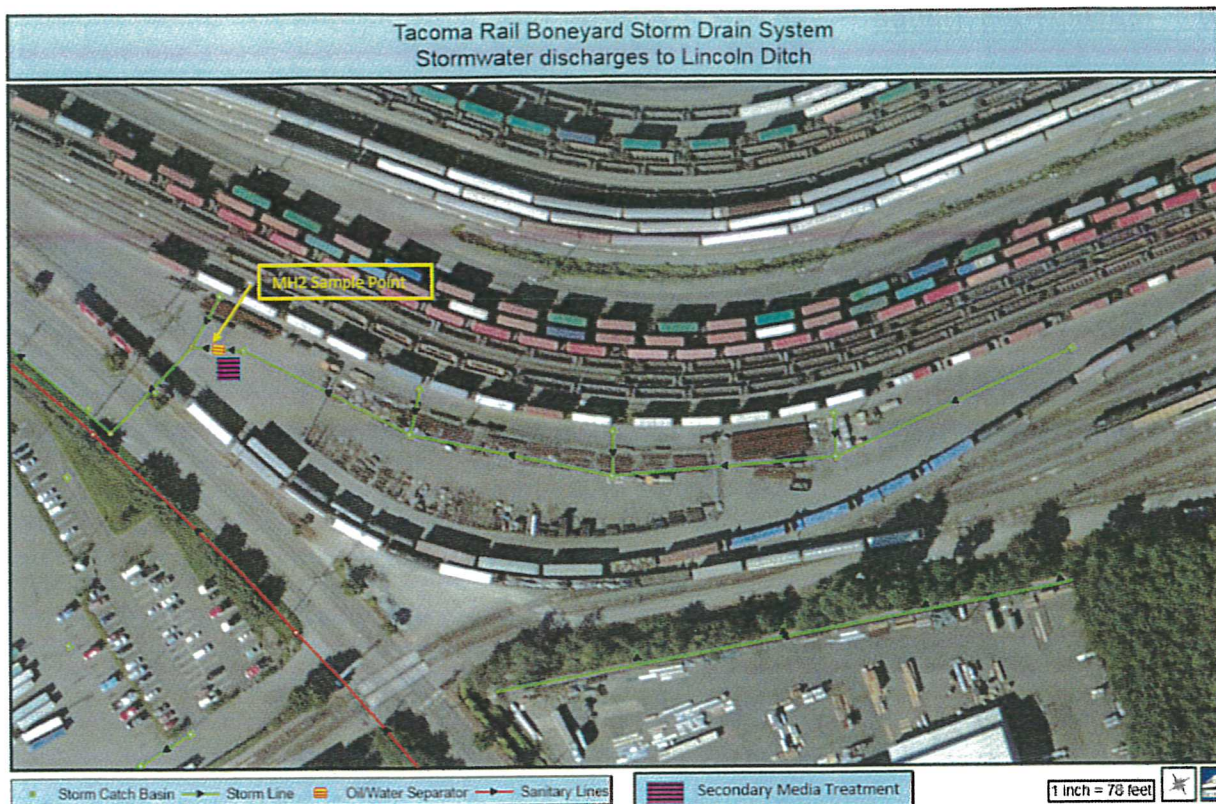
## 2.0 Facility Description

<b>Owner Name:</b>	Tacoma Public Utilities 3628 South 35 <sup>th</sup> Street Tacoma, WA 98409-3192
<b>Facility Name:</b>	Tacoma Rail
<b>Main Facility Address:</b>	2601 SR 509 North Frontage Road Tacoma, WA 98421-3134
<b>Permit Number</b>	WAR001318
<b>Est. Area of Industrial Activity Exposed to Stormwater:</b>	Main Facility: 11 Acres Materials Pen Area: 6 Acres
<b>Tacoma Drainage Basin:</b>	Tacoma Tideflats
<b>Outfalls:</b>	Erdahl Ditch - Blair Waterway Lincoln Ditch - Blair Waterway

Stormwater route to the combined municipal, Port of Tacoma and WSDOT storm drainage







## 2.1 Site Descriptions

The main Tacoma Rail facility is located at 2601 SR 509 North Frontage Road and is located within the Tacoma Tideflat's Drainage Basin. The site ultimately discharges to the Blair Waterway via multiple jurisdictional drainage conveyance through the Erdahl Ditch.

The main facility covers approximately 11 acres and is either paved with asphalt outside of the building footprints or includes railroad track ballasted and other gravel areas. The site drains into a series of rail track pans and daisy-chained catch basins that are connected to one, or another of two stormwater quality treatment devices (API oil/water separators). Both oil/water separators have Abanaki Skimmers installed to minimize oil accumulation. The skimmers convey oil to dedicated 240-gallon totes that are managed for disposal/recycling as used oil. Connected to the last chamber of both o/w separators are custom media filtration treatment systems (see Appendix F). The secondary treatment devices contain a site-specific mix of materials intended to remove zinc and minimize turbidity. These structural BMPs discharge into a combined municipal, Port of Tacoma, and WSDOT drainage system which ultimately discharges into the Lincoln Avenue Ditch (CB1) or the Blair Waterway (Commencement Bay) via the Erdahl Ditch (CB2).

The Materials Pen area is situated on land owned by the Port of Tacoma; however, an agreement with Tacoma Rail allows stockpiling of track maintenance supplies and Tacoma Rail contractor equipment staging. The site located northwest of Milwaukee Way and SR-509, covers approximately 6 acres and is paved with asphalt. A series of daisy-chained catch basins are connected to a coalescing plate oil/water separator. Connected to the last chamber of the Bull Pen o/w separator is a custom, media filtration treatment system. The secondary treatment device contains a site-specific mix of materials to remove zinc and minimize turbidity. The structural BMPs in the Bull Pen area discharge to the City of Tacoma's municipal stormwater conveyance system and ultimately into the Lincoln Avenue Ditch (MH2). The Lincoln Ditch discharges to the Blair Waterway.

## **2.2 Site Map**

The site map (see Appendix A) identifies stormwater drainage areas and discharge points as well as specific industrial activities that could impact stormwater quality.

## **2.3 Inventory of Equipment and Materials**

The inventory of equipment and materials is a list of those things at the site that are exposed to precipitation or run-off and have the potential to impact stormwater quality. These materials and equipment include, but are not limited to:

Used Motor Oil Diesel Fuel Hydraulic Oil Scrap Metal New and used Rail Ties	Locomotives Rail Cars Heavy Equipment Miscellaneous Fleet Vehicles Spare Parts
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## **2.4 Site Operation**

### **Tacoma Rail Tidelands Division**

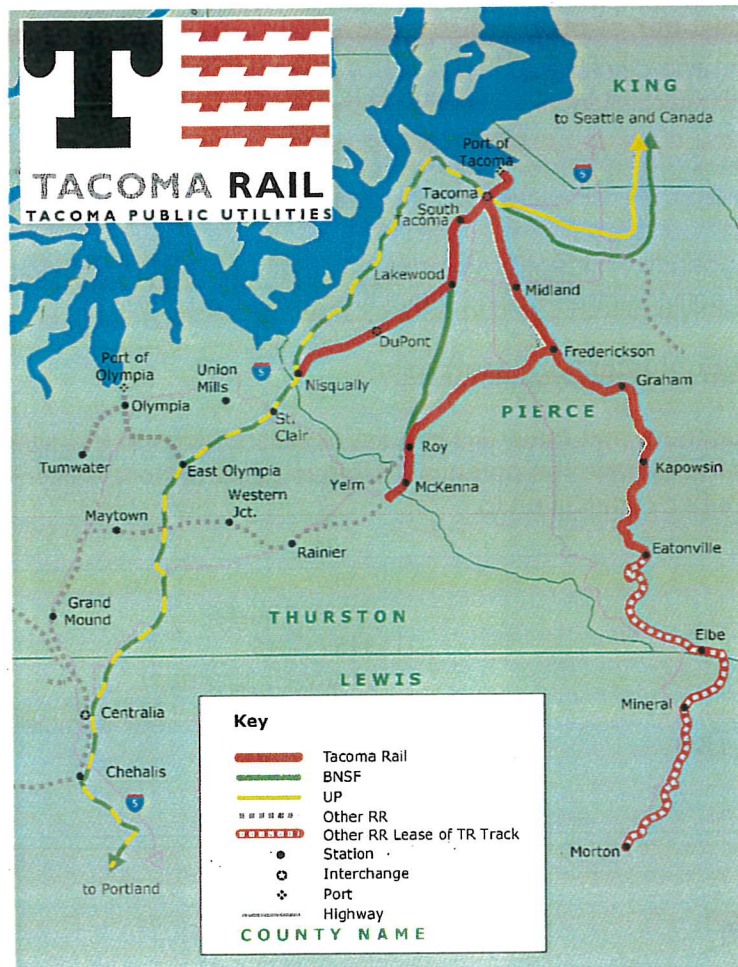
Tacoma Rail provides freight rail service to a variety of industries in the Tacoma Tidelands area. In particular, the Port of Tacoma is one of the largest container ports in North America. It handles more than a million TEUs (20-foot equivalent units) per year. Tacoma Rail provides a crucial link to the Port of Tacoma's success by efficiently and cost-effectively switching containerized goods between trans-Pacific cargo ships and trans-American railroads.

In addition to containerized cargo, Tacoma Rail's freight includes chemicals, automobiles, scrap metal, feed, grain, frozen food, lime, petroleum products and lumber products. The largest of these customers include Auto Warehousing Corporation, MacMillan Piper, Schnitzer Steel, US Oil, Targa Sound Refining and Graymont Western.



The Tacoma Rail facility consists of one administration building, a locomotive repair shop (West Barn) three tool and parts sheds and a large covered structure (East Barn) for locomotive fueling and storage.

Tacoma Rail is a 24/7 operation; however, general administrative staff observe a tradition Monday through Friday work schedule.



Tacoma Rail Service Area

### 3.0 Operational BMPs

Every business and public agency in Tacoma is required to use BMPs as outlined in the City's Surface Water Management Manual. Site management practices that prevent or reduce the introduction of pollutants into stormwater are collectively known as "Operational BMPs". Some common operational BMPs that should be considered for all activities at Tacoma Rail include:

- Avoid the activity or reduce its occurrence;
- Move the activity indoors if possible;

Clean up spills quickly;  
Use less material;  
Use the least toxic materials available;  
Keep storm drain system clean;  
Reduce, reuse, and recycle as much as possible;  
Sweep or vacuum to control dust;  
Be an advocate for stormwater pollution prevention.

The primary operational BMPs currently in use at Tacoma Rail are as follows:

- 3.1 Good housekeeping;
- 3.2 Employee (SWPPP) training;
- 3.3 Prohibition of practices;
- 3.4 Regular site inspection and record-keeping;
- 3.5 Spill Prevention and Cleanup.

### **3.1 Good Housekeeping**

Good housekeeping is the cornerstone of surface water quality protection. It is the single most important BMP because it does the best job of protecting water quality for the least amount of money. Good housekeeping begins at the entrance gate and continues throughout the entire facility. There is simply no better way to protect water quality.

**All employees must take an active role in keeping the yard clean.**

#### **Sweeping**

The driveway, parking areas, and other **paved surfaces must be swept regularly** to prevent the accumulation of dust and dirt. The Tacoma Rail Frontage Road facility and the Materials Pen Area will be swept every other week. A regenerative air sweeper is best for cleaning paved surfaces. Operators must engage all water sprinkler heads to minimize airborne dust when sweeping Tacoma Rail property. In areas where the sweeper cannot get to, hand sweeping should be performed often enough to prevent the accumulation of dust, dirt, or debris. Sweeping at Tacoma Rail has been contracted to the City of Tacoma Environmental Services.

#### **Storage**

Applicable materials, supplies, spare parts, and small equipment shall be stored to prevent contact with surface water. Anything that produces an oily sheen, excluding RR ties, or that could release contaminants should also be covered or otherwise protected from contact with rain and/or snow.

All flammable materials shall be stored under cover on a containment pallet or within an approved flammable liquid storage cabinet, in accordance with the International Fire Code and Tacoma Municipal Code Chapter 3.02.



## Hydraulic and Motor Oil

Many trucks and other pieces of equipment in the Rail Yard have hydraulic reservoirs. There are also many attachments and small pieces of equipment that rely on hydraulics for their operation. It is commonly known that mobile hydraulic equipment is prone to leaks.

To reduce the amount of leakage:

***Always connect the male and female ends of hydraulic lines together when not in use.***

***Visually inspect all vehicles and equipment for oil leaks before starting the engine.***

***Do not top off fuel tanks when filling; spills can occur when fuel expands due to sunlight exposure.***

***Clean up all leaks and spills immediately and report them to your supervisor.***

***City of Tacoma vehicles should not be leaking fluids, for any reason, at any time. Fix all leaks promptly.***

Note: minor spotting on the pavement is an unfortunate and unpreventable reality of heavy equipment and large trucks. Use drip pans, absorbent pads, floor dry, Absorbal® or similar products to capture small drips. Monitor the drip and report any increase as soon as it becomes apparent.

## Spill Response

***All spills must be reported to your supervisor and cleaned up immediately.*** There are covered containers of Oil booming/sock materials, absorbent pads, floor dry, Absorbal®, or similar products made of granular materials, located throughout the locomotive maintenance shop areas and equipment storage sheds that can be used to clean up or contain spills. There are also large yellow comprehensive Emergency spill kits located inside the West/East locomotive barns and the Maintenance of Way (MOW) mechanic shop. This kit contains oil absorbents capable of absorbing 15 gallons of fuel, a storm drain plug cover kit, a non-water 10' containment boom with a 12 gallon absorbent capacity, a non-metallic shovel and two five-gallon buckets with lids..

***Any spills that discharge into any stormwater catch basin must be reported immediately!***

Appendix H of Tacoma Rail's Oil Spill Contingency Plan (OSCP) is attached as Appendix E herein, and outlines initial response actions and notifications for large spills or spills that have the ability to impact storm or surface waters.

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**During regular working hours: Contact the Tacoma Power Environmental Compliance section.**

Jeromy Adams, Environmental Compliance Manager (253) 502-8300 / cell (253) 365-5570

James Bozic, Senior Environmental Specialist (253) 502-8767 / cell (253) 331-8723

Mike Rhubright, Senior Environmental Specialist (253) 502-8520 / cell (253) 606-4919

Tacoma Power Environmental Compliance staff will contact The State Department of Ecology or City of Tacoma Public Works where appropriate or required. If in-house clean-up efforts are insufficient, Environmental staff will contact Tacoma Rail's emergency on-call environmental contractor for additional support. If Tacoma Power Environmental staff is unavailable, call the Public Works Environmental Services Source Control Pollution Control Hotline at (253) 502-2222. If you do not get a response, please call again. If you still do not get a response, call Public Works Emergency Dispatch directly at (253) 581-5595.

**For spills occurring after hours:** Contact Tacoma Rail Operations at (253) 502-8867 and request that they contact TPU Environmental Compliance staff. Remember to document:

- What material entered the catch basin
- Where the spill occurred
- How much material spilled into the storm system

### **Garbage and Waste Materials**

Trash cans and dumpsters are located throughout the Tacoma Rail's property. They should be monitored and emptied regularly. Pick up litter when you see it and dispose of it properly.

***All trash cans and dumpsters must be covered or closed at all times to prevent contact with rain water.***

### **Integrated Pest Management**

The City of Tacoma has established an Integrated Pest Management (IPM) program to guide its response to pests. Pests include such things as undesirable vegetation, rodents and insects. IPM is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. Tacoma Rail contracts out pest control duties to a licensed contractor.

### **3.2 Employee SWPPP Training**

All applicable Tacoma Rail employees will receive SWPPP training and updated site information annually. The Tacoma Rail Training Coordinator shall keep and maintain a record of all SWPPP and Stormwater-related training.

### **3.3 Prohibition of Practices**

Do not dump **any** material into Tacoma Rail stormwater catch basins.

All locomotive washing must occur within the dedicated containment area west of the maintenance shop. Wastewater from this practice must be collected and appropriately disposed into a sanitary sewer upon meeting local pollutant limits.

### **3.4 Regular Site Inspection**

The Tacoma Rail yard shall be inspected by Rail's Asset Manager, or his designee, at least once each month. Discrepancies shall be reported to responsible managers depending upon the origin and location of the problem. Discrepancies shall be rectified as soon as possible and the Asset Manager or their designee shall report back to Tacoma Power's Environmental Compliance section upon resolution of the documented problem. Vehicle inspections will take place on a regular basis by Rail staff.

An inspection report template is attached as Appendix B.

The API-style oil/water separators, skimmers and enhanced treatment devices associated with rail track pans should be inspected once a month or every time the exterior of the facility is inspected per this Stormwater Pollution Prevention Plan. The oil/water separator that treats the discharge from the Bull Pen (coalescing plate-style separator) requires monthly inspections. Sediment is the primary inspection concern. Inspections of the separators are accessed via Utility Vault lids. Use water-finding paste or a hollow tube to measure the oil level or visually observe minor sheens. In 2014, Tacoma Rail installed two Abanaki brand oil skimmers (one for each o/w separator in the Frontage Road facility). Used oil is collected by the skimmers and deposited into 240-gallon totes. This used oil is picked up for recycling by an approved Treatment Storage and Disposal facility (currently Clean Harbors) as needed.

Separators should be pumped and cleaned when the sediment level is 20% of the total depth or greater. Any visible oil, other than sheen, floating on the surface should be immediately removed by operating the skimmer (on Frontage Road separators). Oil that floats on water for any length of time may emulsify and become unrecoverable. Antifreeze, degreasers, and detergents will hasten this. The separator should be pumped and cleaned when the oil scum layer is 2" or more in depth. All used-oil receipts need to be maintained for facility maintenance records.

Enhanced Treatment Media Totes including the pumping and treatment conveyance system should be inspected monthly or after a significant rain event. Inspectors should look for ponding or discoloration on the media surface which may indicate that the device media is impacted and may require maintenance or replacement.

#### **4.0 Source Control/Treatment BMPs**

As the name implies, Source Control BMPs are intended to reduce or minimize contact between contaminants and stormwater runoff by controlling them at the source. Source Control BMPs are physical, structural or mechanical devices that are used to capture and retain pollutants before they begin to move away from their point of origin. Other source control measure may include Standard Operating Procedures to minimize stormwater contamination. In other words, they help to prevent pollution from contacting stormwater in the first place. Source Control BMPs can be found in the current City of Tacoma's Surface Water Management Manual.

Many of these BMPs are common sense and "housekeeping" issues. For example, hand sweeping an indoor or outdoor work area instead of using a hose to wash it into a storm drain or other drainage conveyance. The use of source control BMPs is always the first line of defense in stormwater pollution prevention efforts for the following reasons:

Most source control BMPs are relatively inexpensive and easy to implement. In the majority of cases, source control BMPs are all that is needed to prevent stormwater pollution problems.

Removing pollutants from stormwater can be expensive, and often ineffective. It may not be possible to remove 100% of the pollution from stormwater. It is much better to use source control BMPs and prevent the pollution from contacting stormwater in the first place.

The following Source Control BMPs were selected from The City of Tacoma's Surface Water Management Manual for implementation at Tacoma Rail. The complete text of these BMPs is included as Appendix C.

BMP A101	Cleaning or Washing of Tools, Engines, and Manufacturing Equipment
BMP A201	Loading and Unloading Areas for Liquid and Solid Material
BMP A203	Vehicle Maintenance Activities
BMP A408	Storage of Liquids
BMP A409	Parking and Storage for Vehicles and Equipment
BMP A710	Railroad Yards

#### **A101 Cleaning or Washing of Tools, Engines, and Manufacturing Equipment**

Cleaning and pressure washing of engines, equipment, and portable objects is **prohibited** at the Tacoma Rail. Locomotives are washed by an outside contractor who blocks the storm drain and collects the wash-water for appropriate off-site disposal.

#### **A201 Loading and Unloading Areas for Liquid or Solid Material**

Material Stockpiles such as crushed rock, scrap wood, tires or rail ties must be stored so that no trash, sediment or petroleum products discharge into the storm drainage system. Transfer and storage areas must be swept to reduce material track out.

#### **A203 Vehicle Maintenance Activities**

Vehicle maintenance is forbidden over or near stormwater catch basins. This activity must be performed under cover with no discharge of automotive fluids. Any spilled automotive fluids must be cleaned up immediately.

#### **A408 Storage of Liquids**

Storage tank and drum containment areas will be inspected regularly to identify problem components such as fittings, pipe connections, and valves, for leaks/spills, cracks, corrosion, etc. Tanks that are leaking or corroded or otherwise deteriorating will be replaced. All installations shall comply with the Uniform Fire Code and the National Electric Code. Liquids requiring secondary containment must be stored so that the no free liquids are visible within the containment structure.

#### **A409 Parking and Storage for Vehicles and Equipment**

Parked vehicles and equipment can be sources of toxic hydrocarbons and other organic compounds, oils and greases, metals, and suspended solids. Sweep (Vacuum sweeping is preferred) parking lots, storage areas, and driveways regularly to collect dirt, waste, and debris.

#### **A710 Railroad Yards**

Implement appropriate BMPs to minimize the transference of pollutants (petroleum products, dissolved metals and sediment) from rail yard operations and maintenance activities to other areas.

### **5.0 Sampling and Special Requirements**

#### **Industrial Stormwater General Permit Condition (S4) General Sampling Requirements**

##### **A. General Requirements**

Tacoma Rail, through their TPU environmental service level agreement, shall conduct sampling of stormwater in accordance with the ISGP and the SWPPP. Tacoma Rail currently has three individual sampling points identified as CB1, MH2 and CB2. These locations are identified on the facility's SWPPP map and represent distinct business activities that have the potential to impact stormwater.

##### **B. Sampling Requirements**

###### **1. Sample Timing and Frequency**

- a. The Permittee shall sample the discharge from each designated location at least once per quarter:

1st Quarter = January, February, and March

2nd Quarter = April, May, and June

3rd Quarter = July, August, and September

4th Quarter = October, November, and December

- b. Permittees shall sample the stormwater discharge from the first fall storm event each year. "First fall storm event" means the first time on or after October 1st of each year that precipitation occurs and results in a stormwater discharge from a facility.
- c. Permittees shall collect samples within the first 12 hours of stormwater discharge events. If it is not possible to collect a sample within the first 12 hours of a stormwater discharge event, the Permittee must collect the sample as soon as practicable after the first 12 hours, and keep documentation with the sampling records (Condition S4.B.3) explaining why they could not collect samples within the first 12 hours; or if it is unknown (e.g., discharge was occurring during start of regular business hours).
- d. The Permittee shall obtain representative samples, which may be a single grab sample, a time-proportional sample, or a flow-proportional sample.
- e. Permittees need not sample outside of regular business hours, during unsafe conditions, or during quarters where there is no discharge, but shall submit a Discharge Monitoring Report each reporting period (Condition S9.A).

2. Sample Location(s)

- a. The Permittee shall designate sampling location(s) at the point(s) where it discharges stormwater associated with industrial activity off-site.
- b. The Permittee is not required to sample on-site discharges to ground (e.g., infiltration) or sanitary sewer discharges, unless specifically required by Ecology (Condition G12).
- c. The Permittee shall sample each distinct point of discharge off-site except as otherwise exempt from monitoring as a "substantially identical discharge point" per S3.B.5.b. If applicable, the Permittee is only required to monitor applicable parameters at one of the "substantially identical discharge points".
- d. The Permittee shall notify Ecology of any changes or updates to sample locations, discharge points, and/or outfalls by submitting an "Industrial Stormwater General Permit Discharge/Sample Point Update Form" to Ecology.

3. Sample Documentation

For each stormwater sample taken, the Permittee shall record the following information and retain it on-site for Ecology review:

- a. Sample date.
  - b. Sample time.
  - c. A notation describing if the Permittee collected the sample within the first 12 hours of stormwater discharge events; or, if it is unknown (e.g., discharge was occurring during start of regular business hours).
  - d. An explanation of why the Permittee could not collect a sample within the first 12-hours of a stormwater discharge event, if it was not possible. Or, if it is unknown, an explanation of why the Permittee does not know if a sample was collected within or outside the first 12 hours of stormwater discharge.
  - e. Sample location (using SWPPP identifying number). Sample location identification is as follows: CB1 and CB2 are both located on the Frontage Road parcel. MH2 is the sample point associated with the Bull Pen.
  - f. Method of sampling, and method of sample preservation, if applicable.
  - g. Individual who performed the sampling.
  - h. Weather conditions.
4. Laboratory Documentation; The Permittee shall retain laboratory reports on-site for Ecology review and shall ensure that all laboratory reports providing data for all parameters include the following information:
- a. Date of analysis.
  - b. Parameter name.
  - c. CAS number, if applicable.
  - d. Analytical method(s).
  - e. Individual who performed the analysis.
  - f. Method detection limit (MDL).
  - g. Laboratory quantitation level (QL) achieved by the laboratory.
  - h. Reporting units.
  - i. Sample result.
  - j. Quality assurance/quality control data.
5. The Permittee shall maintain the original records onsite and make them available to Ecology upon request.
6. The Permittee may suspend sampling for one or more parameters (other than "visible oil sheen") for a period of three years (12 quarters) based on consistent attainment of benchmark values when:

- a. Eight consecutive quarterly samples demonstrate a reported value equal to or less than the benchmark value; or for pH, within the range of 5.0 – 9.0.
  - b. For purposes of tallying “consecutive quarterly samples”:
    - i. Do not include any quarters in which the Permittee did not collect a sample, but should have (e.g., discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter). If this occurs, the tally of consecutive quarterly samples is reset to zero.
    - ii. Do not include any quarters in which the Permittee did not collect a sample because there was no discharge during the quarter (or the discharges during the quarter occurred outside normal working hours or during unsafe conditions). These quarters are not included in the calculation of eight consecutive quarters, but do not cause the tally to be reset; i.e., they are skipped over.
  - c. Permittees monitoring more than once per quarter shall average all of the monitoring results for each parameter (except pH and “visible oil sheen”) and compare the average value to the benchmark value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the daily average of the individual grab sample results collected during that 24-hour period; then use the daily average to calculate a quarterly average.
7. A Permittee who has a significant process change shall not use previous sampling results to demonstrate consistent attainment.
  8. Suspension of sampling based on consistent attainment does not apply to pollutant parameters subject to numeric effluent limits based on federal Effluent Limitation Guidelines (Condition S5.C) or Section 303(d) of the Clean Water Act (Condition S6).

### **C. Analytical Procedures for Sampling Requirements**

The Permittee shall ensure that analytical methods used to meet the sampling requirements in this permit conform to the latest revision of the *Guidelines Establishing Test Procedures for the Analysis of Pollutants* contained in 40 CFR Part 136, unless specified otherwise in this permit.

### **D. Laboratory Accreditation**

1. The Permittee shall ensure that all analytical data required by Ecology is prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, Chapter 173-50 WAC.
2. Turbidity and pH are exempt from this requirement, unless the laboratory must be registered or accredited for any other parameter.

## **S5. BENCHMARKS, EFFLUENT LIMITATIONS, AND SPECIFIC SAMPLING REQUIREMENTS** (taken directly from Tacoma Rail’s ISGP)

### **A. Benchmarks and Sampling Requirements**

1. Permittees shall sample their *stormwater discharges* as specified in Condition S4 and as specified in the Department of Ecology’s ISGP Table 2.
2. Additional sampling and/or requirements apply to specific industrial categories (S5.B), and facilities subject to effluent limitation guidelines (S5.C), and certain discharges to impaired waters (S6).
3. If a Permittee’s discharge exceeds a benchmark listed in Table 2, the Permittee shall take the actions specified in Condition S8. Permittees sampling more than once per quarter shall average the sample results for each parameter (except pH and “visible oil sheen”) and compare

the average value to the *benchmark* to determine if the discharge has exceeded a *benchmark* value. However, if Permittees collect more than one sample during a 24-hour period, they must first calculate the *daily average* of the individual grab sample results collected during that 24-hour period; then use the *daily average* to calculate a quarterly average.

**Table 2: Benchmarks and Sampling Requirements Applicable to All Facilities**

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level <sup>a</sup>	Minimum Sampling Frequency <sup>b</sup>
Turbidity	NTU	25	EPA 180.1 Meter	0.5	1/quarter
pH	Standard Units	Between 5.0 and 9.0	Meter/Paper <sup>c</sup>	±0.5	1/quarter
Oil Sheen	Yes/No	No Visible Oil Sheen	N/A	N/A	1/quarter
Copper, Total	µg/L	Western WA: 14 Eastern WA: 32	EPA 200.8	2.0	1/quarter
Zinc, Total	µg/L	117	EPA 200.8	2.5	1/quarter

- <sup>a</sup>. The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR.
- <sup>b</sup>. 1/quarter means at least one sample taken each quarter, year-round.
- <sup>c</sup>. Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

### **Additional Rail Industry Required Sampling**

Parameter	Units	Benchmark Value	Analytical Method	Laboratory Quantitation Level <sup>a</sup>	Minimum Sampling Frequency <sup>b</sup>
<b>6. Transportation (40xx - 44xx, except 4221-25), Petroleum Bulk Stations and Terminals (5171)</b>					
Petroleum Hydrocarbons (Diesel Fraction)	mg/L	10	NWTPH-Dx	0.1	1/quarter

The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table; however, if an alternate method from 40 CFR Part 136 is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on the DMR. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific method detection level (MDL) and QL on the DMR. 1/quarter means at least one sample taken each quarter, year-round.

### **Special Sampling and Stormwater Conveyance System Cleaning**

Permittees shall remove accumulated solids from storm drain lines (including inlets, catch basins, sumps, conveyance lines, and oil/water separators) owned or controlled by the Permittee at least once prior to October 1, 2016.



Permittees shall conduct line cleaning operations (e.g., jetting, vacuuming, removal, loading, storage, and/or transport) using BMPs to prevent discharges of storm drain solids to surface waters of the state.

Removed storm drain solids and liquids shall be disposed of in accordance with applicable laws and regulations and documented in the SWPPP.

- i. If a Permittee can demonstrate that line cleaning operations are not feasible by the October 1, 2016 deadline, Ecology may approve a time extension by approving a modification of permit coverage.
  - ii. If a Permittee can demonstrate, based on video inspection, in-line storm drain solids sampling, or other documentation, that storm drain line cleaning is not necessary to prevent downstream sediment contamination or recontamination, Ecology may waive this requirement by approving a modification of permit coverage.
  - iii. Requests for line cleaning waivers or time extensions must be accompanied by a modification of coverage form, and a detailed technical basis to support the request. The due date for line cleaning waiver and extension requests is May 15, 2016.
- e. Permittees shall sample and analyze storm drain solids in accordance with Table 8 at least once prior to October 1, 2016. Storm drain solids must be collected/sampled from a representative catch basin, sump, pipe, or other feature within the storm drain system that corresponds to the discharge point where Total Suspended Solids (TSS) samples are collected per Condition S6.C. Samples may be either a single grab sample or a composite sample. Samples must be representative of the storm drain solids generated and accumulated in the facility's drainage system. To the extent possible, sample locations must exclude portions of the drainage system affected by water from off-site sources (e.g., run-on from off-site properties, tidal influence, backflow).
- i. If a Permittee can demonstrate that storm drain solids sampling and analysis is not feasible by the October 1, 2016 deadline, Ecology may approve a time extension by approving a modification of permit coverage.
  - ii. If a Permittee can demonstrate that storm drain solids sampling and analysis is not feasible or not necessary, Ecology may waive this requirement by approving a modification of permit coverage.
  - iii. Requests for storm drain solids sampling and analysis waivers or time extensions must be accompanied by a modification of coverage form, and a detailed technical basis to support the request. The due date for solids sampling and analysis waiver and extension requests is May 15, 2016. The sampling and analysis waiver and extension requests is May 15, 2016.

Table 8: Sampling and Analytical Procedures for Storm Drain Solids

Analyte	Method in Sediment	Quantitation Level <sup>a</sup>
<b>Conventional Parameters</b>		
Percent total solids	SM 2540G, or ASTM Method D 2216	NA
Total organic carbon	Puget Sound Estuary Protocols (PSEP 1997), or EPA 9060	0.1%
Grain size	Ecology Method Sieve and Pipette (ASTM 1997), ASTM D422, or PSEP 1986/2003	NA
<b>Metals</b>		
Antimony, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw <sup>b</sup>
Arsenic, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Beryllium, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Cadmium, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Chromium, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Copper, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Lead, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Mercury, Total	EPA Method 1631E, or EPA Method 7471B	0.005 mg/kg dw
Nickel, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Selenium, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.5 mg/kg dw
Silver, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.1 mg/kg dw
Thallium, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	0.2 mg/kg dw
Zinc, Total	EPA Method 200.8 (ICP/MS), EPA Method 6010 or EPA Method 6020	5.0 mg/kg dw
<b>Organics</b>		
PAH compounds <sup>c</sup>	EPA Method 8270 D	70 µg/kg dw
PCBs (aroclers), Total <sup>d</sup>	EPA Method 8082	10 µg/kg dw
<b>Petroleum Hydrocarbons</b>		
NWTPH-Dx	NWTPH-Dx	25.0-100.0 mg/kg dw

The Permittee shall ensure laboratory results comply with the quantitation level (QL) specified in the table. However, if an alternate method is sufficient to produce measurable results in the sample, the Permittee may use that method for analysis. If the Permittee uses an alternative method it must report the test method and QL on Page 34 the sediment monitoring report. All results shall be reported. For values below the QL, or where a QL is not specified, report results at the method detection level (MDL) from the lab and the qualifier of "U" for undetected at that concentration. If the Permittee is unable to obtain the required QL due to matrix effects, the Permittee must report the matrix-specific MDL and QL on the DMR.

- b. dw = dry weight.
- c. PAH compounds include: 1-methylnaphthalene, 2-methylnaphthalene, 2-chloronaphthalene, acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b, k)fluoranthene, benzo(ghi)perylene, dibenzo(a,h)anthracene, dibenzofuran, carbazole, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- d. Total = sum of PCB aroclors 1016+1221+1232+1242+1248+1254+1260.
- f. All storm drain solids sampling data shall be reported to Ecology. Monitoring Report (SMR) no later than the DMR due date for the reporting period in which the solids were sampled, in accordance with Condition.

## Appendix B Inspection Checklist

### INDUSTRIAL STORMWATER MONTHLY INSPECTION REPORT

Inspections must be conducted by a person with the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit. Retain a copy of the completed and signed form in accordance with Permit Condition S9.C.

**FACILITY NAME:**

**INSPECTION TIME:**

**DATE:**

**WEATHER INFORMATION:**

- Description of Weather Conditions (e.g., sunny, cloudy, raining, snowing, etc.):  
\_\_\_\_\_
- Was stormwater (e.g., runoff from rain or snowmelt) flowing at outfalls and/or discharge areas shown on the Site Map during the inspection: ☐ Yes ☐ No ☐ Comments:  
\_\_\_\_\_  
\_\_\_\_\_

**I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION**

**SWPPP and Site Map:** Have a copy of the SWPPP and site map with you during the inspection so that you can ensure they are current and accurate. Use it as an aide in recording the location of any issues you identify during the inspection.

- Is the Site Map current and accurate?
- Is the SWPPP inventory of activities, materials and products current?

Any new potential pollutant sources must be added to the map and reflected in the *SWPPP Facility Assessment & Tables 2, 2A, 3 and 5*.

Yes No

**Findings and Remedial Action Documentation:** Describe any findings below and the schedule for remedial action completion including the date initiated and date completed or expected to be completed.

<p><b>Vehicle/Equipment Areas:</b></p> <p><i>Equipment cleaning: Check NA if not performed on-site. Skip section.</i></p> <p>Is equipment washed and/or cleaned only in designated areas?</p> <ul style="list-style-type: none"> <li>Observe washing: Is all wash water captured and properly disposed of?</li> </ul> <p><i>Equipment fueling: Check NA if not performed on-site. Skip section.</i></p> <ul style="list-style-type: none"> <li>Are all fueling areas free of contaminant buildup and evidence of chronic leaks/spills?</li> <li>Are all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater?</li> <li>Are structures in place to prevent precipitation from accumulating in containment areas? <ul style="list-style-type: none"> <li>If not, is there any water or other fluids accumulated within the containment area?</li> <li>Note: If containment areas are not covered to prevent water from accumulating, the SWPPP must include a plan describing how accumulated water will be managed and disposed of.</li> </ul> </li> </ul>	Yes	No	NA	Findings and Remedial Action Documentation:
<p><i>Equipment maintenance:</i></p> <ul style="list-style-type: none"> <li>Are maintenance tools, equipment and materials stored under shelter, elevated and covered?</li> <li>Are all drums and containers of fluids stored with proper cover and containment?</li> <li>Are exteriors of containers kept outside free of deposits?</li> <li>Are any vehicles and/or equipment leaking fluids? Identify leaking equipment.</li> <li>Is there evidence of leaks or spills since last inspection? Identify and address.</li> <li>Are materials, equipment, and activities located so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)?</li> </ul> <p>Add any additional site-specific BMPs:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	Yes	No	NA	Findings and Remedial Action Documentation:

# **I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION**

Good Housekeeping BMPs:	Yes	No	NA	Findings and Remedial Action Documentation:
1. Are paved surfaces free of accumulated dust/sediment and debris?				
<ul style="list-style-type: none"> <li>• Date of last quarterly vacuum/sweep _____</li> </ul>				
<ul style="list-style-type: none"> <li>• Are there areas of erosion or sediment/dust sources that discharge to storm drains?</li> </ul>				
2. Are all waste receptacles located outdoors:				
<ul style="list-style-type: none"> <li>• In good condition?</li> </ul>				
<ul style="list-style-type: none"> <li>• Not leaking contaminants?</li> </ul>				
<ul style="list-style-type: none"> <li>• Closed when is not being accessed?</li> </ul>				
<ul style="list-style-type: none"> <li>• External surfaces and area free of excessive contaminant buildup?</li> </ul>				
3. Are the following areas free of accumulated dust/sediment, debris, contaminants, and/or spills/leaks of fluids?				
<ul style="list-style-type: none"> <li>• External dock areas</li> </ul>				
<ul style="list-style-type: none"> <li>• Pallet, bin, and drum storage areas</li> </ul>				
<ul style="list-style-type: none"> <li>• Maintenance shop(s)</li> </ul>				
<ul style="list-style-type: none"> <li>• Equipment staging areas (loaders, tractors, trailers, forklifts, etc)</li> </ul>				
<ul style="list-style-type: none"> <li>• Around bag-house(s)</li> </ul>				
<ul style="list-style-type: none"> <li>• Around bone yards</li> </ul>				
<ul style="list-style-type: none"> <li>• Other areas of industrial activity:</li> </ul>				
_____				
_____				
_____				
_____				
_____				
_____				
_____				

Spill Response and Equipment:	Yes	No	NA	Findings and Remedial Action Documentation:
<p>Are spill kits available, in the following locations?</p> <ul style="list-style-type: none"> <li>Fueling stations</li> <li>Transfer and mobile fueling units</li> <li>Vehicle and equipment maintenance areas</li> </ul> <p>Do the spill kits contain all the permit required items?</p> <ul style="list-style-type: none"> <li>Oil absorbents capable of absorbing 15 gallons of fuel.</li> <li>A storm drain plug or cover kit.</li> <li>A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity.</li> <li>A non-metallic shovel.</li> <li>Two five-gallon buckets with lids.</li> </ul> <p>Are contaminated absorbent materials properly disposed of?</p>				

**I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION**

General Material Storage Areas:	Yes	No	NA	Findings and Remedial Action Documentation:
<ul style="list-style-type: none"> <li>Are damaged materials stored inside a building or another type of storm resistance shelter?</li> <li>Are all uncontained material piles stored in a manner that does not allow discharge of impacted stormwater?</li> <li>Are scrap metal bins covered?</li> <li>Are outdoor containers covered?</li> </ul>				
Stormwater BMPs and Treatment Structures: Visually inspect all stormwater BMPs and treatment structures devices, discharge areas infiltration and outfalls shown on the Site Map.	Yes	No	NA	Findings and Remedial Action Documentation:
<ul style="list-style-type: none"> <li>Are BMPs and treatment structures in good repair and operational?</li> <li>Are BMPs and treatment structures free from debris buildup that may impair function?</li> <li>The permit requires Permittees to clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe. Based on this, do catch basins need to be cleaned?</li> <li>Are berms, curbing or other methods used to divert and direct discharges adequate and in good condition?</li> </ul>				

<b>Observation of Stormwater Discharges:</b> <ul style="list-style-type: none"> <li>Is the discharge free of floating materials, visible oil sheen, discoloration, turbidity, odor, foam or any other signs of contamination?</li> <li>Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater and is not allowed to comeingle with stormwater or enter storm drains. Is process water comingling with stormwater or entering storm drains?</li> <li>Illicit discharges include domestic wastewater, noncontact cooling water, or process wastewater (including leachate). Were any illicit discharges observed during the inspection?</li> </ul>	Yes	No	NA	<b>Findings and Remedial Action Documentation:</b>
<b>Observation of Petroleum Storage tank &amp; Spill Prevention Integrity:</b> <ul style="list-style-type: none"> <li><b>West Barn (outside):</b> 10,000 gal diesel tank, roll top waste oil tote 240 gal(1 tote), roll top oil drum 55 gal x 2 (4-8 drums)</li> <li><b>West Barn (inside):</b> 55 gal motor oil drum storage area (2-15 drums), 330 gal tote motor oil storage area (4 totes), 400 motor oil tank</li> <li><b>East Barn (outside):</b> 12,000 gal diesel tank, 55 gal motor oil drum storage area (2-15 drums)</li> <li><b>East Barn (inside):</b> Roll up door oil 330 gal tote (2 tote),</li> <li><b>Oil Skimmer Connex (east &amp; west):</b> 240 gal tank (1 each)</li> <li><b>Mechanical Shop (inside):</b> 55 gal motor oil/hydraulic fluid drum storage area (2-8 drums)</li> <li><b>Central Outside Drum Storage:</b> roll top oil/waste oil drum (2-4 drums)</li> </ul> <p>*Tanks and drum integrity should be considered sound unless any of the follow are present: Dents/distortion, Cracks (tank shell &amp; welds), Coating/paint failure, Excessive rust/pitting Leaking/weeping of product (Staining on tank wall/ground or Pooling of material within containment)</p> <p>**Spill Prevention measures should be considered sound unless any of the follow are present: Cracks/physical damage/breaks in containment, Valves not locked in closed position, Sensor &amp; equipment not functions correctly, Foreign material build-up, Signs of material weeping through containment</p>	Yes	No	NA	<b>Findings and Remedial Action Documentation:</b>



[illegible]

### III. CERTIFICATION STATEMENTS AND SIGNATURES:

**Inspector - Certification:** This section must be completed by the person who conducted the site inspection prior to submitting this form to the person with signature authority (see Permit Condition G2) or a duly authorized representative of that person.

☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.

☐ The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.

*"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."*

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**Inspector's Name – Printed**

**Inspector's Signature**

**Inspector's Title**

**Date**

**Permittee – Certification:**

☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.

☐ The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.

*"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

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PRINTED NAME of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**<sup>1</sup>

SIGNATURE of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**<sup>1</sup>

**DATE**

<sup>1</sup>A person is duly authorized representative only if 1) the authorization is made in writing by a person described in Permit Condition G2.A and submitted to Ecology, and 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated *facility*, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

## Appendix C Source Control Best Management Practices

### A101: Cleaning or Washing of Tools, Engines and Manufacturing Equipment

**Description of Pollutant Sources:** This activity applies to businesses and public agencies that clean manufacturing equipment such as saws, grinders, screens, and other processing devices outside of buildings, and to businesses engaged in pressure washing of engines, equipment, and portable objects.

Pollutants sources include toxic hydrocarbons, organic compounds, oils and greases, nutrients, heavy metals, pH, suspended solids, biochemical oxygen demand (BOD), and chemical oxygen demand (COD).

**Pollutant Control Approach:** The preferred approach is to cover and/or contain the cleaning activity or conduct the activity inside a building, to separate the uncontaminated stormwater from the pollutant sources. Wash water must be conveyed to a sanitary sewer after approval by the City of Tacoma, temporarily stored before proper disposal, or recycled, with no discharge to the ground, a storm drain, or surface water. Washwater may be discharged to the ground after proper treatment in accordance with *Ecology Guidance WQ-R-95-56, "Vehicle and Equipment Washwater Discharges," revised September 2007*. The quality of any discharge to the ground after proper treatment must comply with Ecology's Groundwater Quality Standards, Chapter 173-200 WAC. Contact the Ecology Southwest Regional Office for an NPDES Permit application for discharge of washwater to surface water or to a storm drain after on-site treatment.

#### **Required BMPs**

The following BMPs, or equivalent measures, are required of all businesses and public agencies engaged in cleaning or washing of tools, engines, equipment, and portable objects:

Illicit connections to the storm drainage system must be eliminated. See BMP S101 for detailed information.

Employees shall be educated to control washing operations to prevent stormwater contamination. All washwater must discharge to a holding tank, process treatment system, or sanitary sewer, never to the storm drain system. See BMP S103 in Chapter 5 for detailed information on how this must be accomplished.

Pressure washing must be done in a designated area (such as a wash pad) provided with a sump drain and stormwater run-on prevention (Figure 106). See BMPs S106 and S107 for information on sumps (or holding tanks) and run-on prevention. Contact the City of Tacoma Sanitary Source Control Unit at 253-591-5588 for washing operation policy information.

## **BMP A201: Loading and Unloading Areas for Liquid or Solid Material**

### **Description of Pollutant Sources**

Loading/unloading of liquid and solid materials at industrial and commercial facilities is typically conducted at shipping and receiving, outside storage, fueling areas, etc. Materials transferred can include products, raw materials, intermediate products, waste materials, fuels, scrap metals, etc. Leaks and spills of fuels, oils, powders, organics, heavy metals, salts, acids, alkalis, etc. during transfer are potential causes of stormwater contamination. Spills from hydraulic line breaks are a common problem at loading docks.

### **Pollutant Control Approach**

Cover and contain the loading/ unloading area where necessary to prevent run-on of stormwater and runoff of contaminated stormwater.

### **Required BMPs**

#### ***At All Loading/ Unloading Areas:***

A significant amount of debris can accumulate at outside, uncovered loading/unloading areas. Sweep these surfaces frequently to remove material that could otherwise be washed off by stormwater. Sweep outside areas that are covered for a period of time by containers, logs, or other material after the areas are cleared.

Place drip pans or other appropriate temporary containment devices at locations where leaks or spills may occur such as hose connections, hose reels, and filler nozzles. Drip pans shall always be used when making and breaking connections (see Figure 107). Check loading/unloading equipment such as valves, pumps, flanges, and connections regularly for leaks and repair as needed. Frequent monitoring of drip pans is required to ensure captured materials are not displaced by wind or rainwater.

#### ***At All Loading/ Unloading Areas:***

Consistent with Uniform Fire Code requirements and to the extent practicable, conduct unloading or loading of solids and liquids in a manufacturing building or under a roof, lean-to, or other appropriate cover.

Berm, dike, and/or slope the loading/unloading area to prevent run-on of stormwater and to prevent the runoff or loss of any spilled material from the area.

Large loading areas frequently are not curbed along the shoreline. As a result, stormwater passes directly off the paved surface into surface water. Place curbs along the edge, or slope the edge such that the stormwater can flow to an internal storm drain system that leads to an approved treatment BMP.

Pave and slope loading/unloading areas to prevent the pooling of water. The use of catch basins and drain lines within the interior of the paved area must be minimized as they will frequently be covered by material, or they shall be placed in designated "alleyways" that are not covered by material, containers, or equipment.

### **Recommended BMPs:**

For the transfer of pollutant liquids in areas that cannot contain a catastrophic spill, install an automatic shutoff system in case of unanticipated off-loading interruption (e.g. coupling break, hose rupture, overfill, etc.).

***At Loading and Unloading Docks:***

Install/maintain overhangs or door skirts that enclose the trailer end (see Figure 109 and Figure 110) to prevent contact with rainwater.

Design the loading/unloading area with berms, sloping, etc. to prevent the run-on of stormwater. Retain on-site the necessary materials for rapid cleanup of spills.

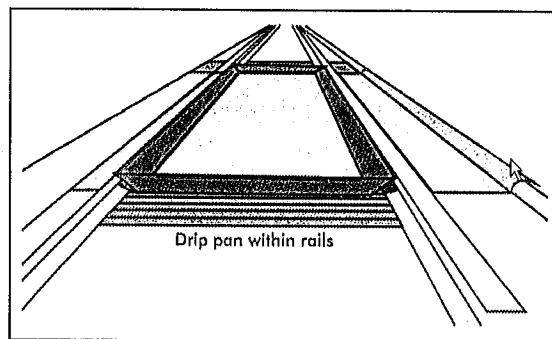
***At Tanker Truck and Rail Transfer Areas to Above/Below-ground Storage Tanks:***

- To minimize the risk of accidental spillage, prepare an "Operations Plan" that describes procedures for loading/unloading. Train the employees, especially fork lift operators, in its execution and post it or otherwise have it readily available to employees.

- Report spills of reportable quantities to Ecology Southwest Regional Office (360-407-6300).
- Prepare and implement an Emergency Spill Cleanup Plan for the facility (BMP A714 Spills of Oil and Hazardous Substances) which includes the following BMPs:
- Ensure the clean-up of liquid/solid spills in the loading/unloading area immediately if a significant spill occurs, upon completion of the loading/unloading activity, or at the end of the working day.
- Retain and maintain an appropriate oil spill cleanup kit on-site for rapid cleanup of material spills (see BMP A714 Spills of Oil and Hazardous Substances).
- Ensure that an employee trained in spill containment and cleanup is present during loading/unloading.

***At Rail Transfer Areas to Above/Below-ground Storage Tanks:***

As necessary, install a drip pan system as illustrated (see illustration below) between the rails in designated mechanical areas to collect spills/leaks from railroad equipment and hose connections, hose reels, and filler nozzles.



## **BMP A203: Vehicle Maintenance Activities**

### **Description of Pollutant Sources**

This activity applies to businesses and public agencies where fuel filters, engine oil, and other fluids such as battery acid, coolants, and transmission and brake fluids are removed and replaced in vehicles and equipment. It also applies to mobile vehicle maintenance operations, such as at construction sites.

Pollutants of concern include toxic hydrocarbons, toxic organic compounds, oils and greases, pH, and heavy metals.

### **Pollutant Control Approach**

Control leaks and spills of fluids using good housekeeping and cover and containment BMPs.

### **Required BMPs**

The following BMPs or equivalent measures are required of all businesses and agencies engaged in engine and vehicle repair:

Employees must be educated about the need for careful handling of automotive fluids. Employees at businesses or agencies who routinely change or handle these fluids must be trained in spill response and cleanup procedures. Inspect all incoming vehicles, parts, and equipment stored temporarily outside for leaks.

Remove batteries and liquids from vehicles and equipment in designated areas designed to prevent stormwater contamination. Store cracked batteries in a covered non-leaking secondary containment system. Spill cleanup materials, such as rags and absorbent materials, must always be kept close at hand when changing oil and other fluids. Soiled rags and other cleanup material must be properly disposed of or cleaned and reused.

Floor drains inside buildings shall connect to sanitary sewer, be routed through an appropriately sized oil/water separator and shall be approved by the City.

Do not hose down the maintenance/repair area. Instead, sweep the area weekly to collect dirt, and wipe up spills with rags and other absorbent materials.

A bermed tarp, ground cloth, or drip pans must be used beneath the vehicle or equipment to capture all spills and drips. The collected drips and spills must be recycled or disposed of properly. See BMP S102 for disposal options.

If this activity occurs at a stationary business location, the activity area must be moved indoors. An exception to this requirement would be equipment that is too large to fit under a roofed area. In this case, the outdoor area must be paved, provided with a sump drain and provision made for stormwater run-on prevention. See BMP S106 and S107 for more on paving, sump drains and holding tanks, and run-on prevention. Contact the City of Tacoma Sanitary Source Control unit at 253-591-5588 for information on requirements for disposal to sewer. If the site utilizes a septic tank, sump contents will need to be pumped and disposed of by an oil recycler or hazardous waste company.

Recycle oil, antifreeze, batteries, and air conditioning coolant.

If engine washing is to be performed, then appropriate pretreatment will be required. Contact the City of Tacoma Source Control Unit at 253-591-5588 for their requirements.

Implement the following treatment BMP in addition to the Required BMPs:

Contaminated stormwater runoff from vehicle staging and maintenance areas must be conveyed to an API or CP oil and water separator followed by a basic treatment BMP (see Volume 5), applicable filter, or other equivalent oil treatment system.

#### **Recommended BMPs**

The following BMPs are not required, but can provide additional pollution prevention.

Drain all fluids from wrecked vehicles and car parts upon arrival. Recover air conditioning gases.

Use reusable cloth rags to clean up drips and small spills instead of disposables: these can be professionally laundered and reused. Do not attempt to launder these at home or at a coin-op laundry.

Use absorbent pillows or booms in or around storm drains and catch basins to absorb oil and fuel.

#### **A408 Storage of Liquids**

**Description of Pollutant Sources:** Above-ground tanks containing liquids (excluding uncontaminated water) may be equipped with a valve drain, vent, pump, and bottom hose connection. They may be heated with steam heat exchangers equipped with steam traps. Leaks and spills can occur at connections and during liquid transfer. Oil and grease, organics, acids, alkalis, and heavy metals in tank water and condensate drainage can also cause stormwater contamination at storage tanks.

**Pollutant Control Approach:** Install secondary containment or a double-walled tank. Slope the containment area to a drain with a sump. Stormwater collected in the containment area may need to be discharged to treatment such as an API or CP oil/water separator, or equivalent BMP. Add safeguards against accidental releases including protective guards around tanks to protect against vehicle or forklift damage, and tagging valves to reduce human error. *Tank water and condensate discharges are process wastewater that may need an NPDES Permit.*

#### **Required BMPs**

Inspect the tank containment areas regularly to identify problem components such as fittings, pipe connections, and valves, for leaks/spills, cracks, corrosion, etc.

Place adequately sized drip pans beneath all mounted taps and drip/spill locations during filling/unloading of tanks. Valved drain tubing may be needed in mounted drip pans.

Sweep and clean the tank storage area regularly, if paved.

Replace or repair tanks that are leaking, corroded, or otherwise deteriorating.

All installations shall comply with the Uniform Fire Code and the National Electric Code.

Locate permanent tanks in impervious (Portland cement concrete or equivalent) secondary containment surrounded by dikes, or UL Approved double-walled. The dike must be of sufficient height to provide a containment volume of either 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank, whichever is greater, or, if a single tank, 110 percent of the volume of that tank.

Slope the secondary containment to drain to a dead-end sump (optional), or equivalent, for the collection of small spills.

Include a tank overfill protection system to minimize the risk of spillage during loading.

If the tank containment area is uncovered, equip the outlet from the spill-containment sump with a shutoff valve, which is normally closed and may be opened manually or automatically, only to convey uncontaminated stormwater to a storm drain. Evidence of contamination can include the presence of visible sheen, color, or turbidity in the runoff, or existing or historical operational problems at the facility. Simple pH measurements with litmus or pH paper can be used for areas subject to acid or alkaline contamination.

At petroleum tank farms, convey stormwater contamination with floating oil or debris in the contained area through an API or CP-type oil/water separator (Volume V, Treatment BMPs), or other approved treatment prior to discharge to storm drain or surface water.

#### **BMP A409: Parking and Storage for Vehicles and Equipment**

**Description of Pollutant Sources:** Parked vehicles at public and commercial parking lots and garages, such as retail store, fleet vehicle (including rent-a-car lots and car dealerships), equipment sale and rental parking lots, and parking lot driveways, can be sources of toxic hydrocarbons and other organic compounds, oils and greases, metals, and suspended solids.

#### **Required BMPs**

If washing of a parking lot is conducted, discharge the washwater to a sanitary sewer (if allowed by the City of Tacoma) or other approved wastewater treatment system, or collect it for off-site disposal.

Do not hose down the area to a storm drain or receiving water. Sweep (vacuum sweeping is preferred) parking lots, storage areas, and driveways regularly to collect dirt, waste, and debris.

An oil removal system such as an API or CP oil and water separator, catch basin filter, or equivalent BMP (see Volume 5), approved by the City of Tacoma, is applicable for parking lots meeting the threshold vehicle traffic intensity level of a high-use site. For more information on high-use sites, refer to Volume 5, Chapter 1.

Covered floors of parking garages must drain to the sanitary sewer through an approved oil/water separator. Uncovered floors must be routed to the storm drainage system through an approved treatment device.

#### **BMP A710: Railroad Yards**



## **Description of Pollutant Sources**

Pollutant sources can include drips/leaks of vehicle fluids and cargo onto the railroad bed; human waste disposal; litter; locomotive/railcar/equipment cleaning; fueling; outside material storage; the erosion and loss of soil particles from the railroad bed; maintenance and repair activities at railroad terminals, switching yards, and maintenance yards; and herbicides used for vegetation management. Waste materials can include waste oil, solvents, degreasers, antifreeze solutions, radiator flush, acids, brake fluids, dust, soiled rags, oil filters, sulfuric acid and battery sludge, machine chips with residual machining oil, and toxic fluids/solids lost during transit. Potential pollutants include oil and grease, TSS, BOD, organics, pesticides, and metals.

## **Pollutant Control Approach**

Apply good housekeeping and preventive maintenance practices to control leaks and spills of liquids in railroad yard areas.

### **Required BMPs**

Implement the applicable BMPs in this chapter depending on the pollutant generating activities/sources at a railroad yard facility.

Do not allow toilets to discharge to outside areas while a train is in transit or at the station. Pumpout facilities shall be used to service train toilets.

Use drip and track pans at hose/pipe connections during liquid transfer and other leak-prone areas.

During maintenance do not discard debris or waste liquids along the tracks or in railroad yards.

Promptly clean up all spilled materials.

In areas subjected to leaks/spills of oils or other chemicals, convey the contaminated stormwater to appropriate treatment such as a sanitary sewer (if approved by the City of Tacoma), to a CP or API oil/water separator for floating oils, or other appropriate treatment BMP (as approved by the City of Tacoma).

<b>Pollution Prevention Team</b>	<b>Worksheet #1</b> Completed by: <u>Mike Rhubright</u> Title: <u>Senior Environmental Specialist</u> Date: <u>September 20, 2018</u>	
	Responsible Official: <u>Dale King</u> Title: <u>Rail Superintendent</u>  Team Leader: <u>Dan Knouff</u> Title: <u>Asset Manager</u> <div style="text-align: right;">Office Phone: <u>253-377-0561</u></div> Responsibilities: <u>Maintain BMPs, SWPPP Implementation, On-site record maintenance/management, BMP Identification and installation coordination, SWPPP Inspections, DMR Sampling, training coordination.</u>	
(1) <u>Kari Halliday</u> Title: <u>Mechanical Supervisor</u> <div style="text-align: right;">Office Phone: <u>253-396-3285</u></div> Responsibilities: <u>Maintenance supervision, SWPPP implementation, purchasing and training coordination.</u>		
(2) <u>Mike Rhubright</u> Title: <u>Senior Environmental Specialist</u> <div style="text-align: right;">Office Phone: <u>253-502-8520</u></div> Responsibilities: <u>SWPPP development, modification, Discharge Monitoring Report and Annual Report submittal to Ecology.</u>		
(3) <u>James Bozic</u> Title: <u>Senior Environmental Specialist</u> <div style="text-align: right;">Office Phone: <u>253-502-8513</u></div> Responsibilities: <u>Hazardous Waste consultation and technical assistance.</u>		

## Worksheet #2

Completed by: Mike RhubrightTitle: Senior Environmental SpecialistDate: September 20, 2018**Material Inventory**

List materials handled, treated, stored, or disposed of at the site that may potentially be exposed to precipitation or runoff. Also indicate if any spills or leaks of pollutants have occurred during the three years prior to the effective date of the permit. (Including any pollutants no longer handled on-site.)

Material	Purpose/Location	Quantity (Units)			Exposed Since Nov. 89 (Yes/No)	Likelihood of contact  With stormwater. If  Yes, describe reason	Past Spill or Leak	
		Used	Produced	Stored			Yes	No.
Diesel	Storage tank on NW side of "West Barn" (main maintenance building connected to administration).			10,000 gallon capacity	No	Possible release during fueling activity.		X
Diesel	Storage tank on south side of the "East Barn"			12,000 gallon capacity	No	Possible release during fueling activity.		X
Engine oil	New and used oil inside "West Barn" maintenance building.			6-10 totes in addition to several 55-gallon drums	Yes	No – All activity inside bldg. Leaks from locomotives outside on tracks have containment pans		X
Engine oil	New oil inside "East Barn" maintenance building containment area.			(2) 330-gallon totes	Yes	No – All activity inside bldg. Leaks from locomotives outside on tracks have containment pans		X
Rail ties - new	Paved storage yard NW of office complex				Yes	Yes – stored in open paved yard. Ties are BMP treated.		X
Rail ties – used	Unpaved area next to parking lot				Yes	Yes		X

Worksheet #2A

Completed by: Mike Rhubright

Title: Senior Environmental Specialist

Date: September 20, 2018

[illegible]

<p>Potential Pollutant Source Identification</p>		<p>Worksheet #3</p>	
		<p>Completed by: <u>Mike Rhubright</u></p> <p>Title: <u>Senior Environmental Specialist</u></p> <p>Date: <u>September 20, 2018</u></p>	
<p>List all potential stormwater pollutants from materials handled, treated, or stored on-site.</p>			
Potential Stormwater Pollutant	Stormwater Pollutant Source	Likelihood of pollutant being present in your stormwater discharge. If yes, explain	
Locomotive Crankcase Oil	Routine engine drips	Yes. All oils spilled to the ground can impact groundwater or runoff into storm system; however standard operating procedure requires that locomotives be parked over track pans which drain to the oil/water separator prior to discharge.	
Diesel Fuel	Drips/leaks from fueling operations	Yes. Spills could enter the stormwater system.	
Locomotive wash water	Routine locomotive washing	Yes. Wash water falls on paved surfaces within a bermed area; however it is collected and properly disposed of by an outside contractor.	



## List of Significant Spills and Leaks

Worksheet #4  
 Completed by: Mike Rhubright  
 Title: Senior Environmental Specialist  
 Date: September 20, 2018

List all spills and leaks (as indicated on Worksheet #2) of toxic or hazardous pollutants that were significant after the date of three years prior to the effective date of this Permit. Significant spills and leaks include but are not limited to, release of oil or hazardous substances in excess of reportable quantities (see chapter 2 of text). Although not required, we suggest you list spills and leaks of non-hazardous materials.

Date (month/day/year)	Location (as indicated on site map)	Description				Response Procedure		Preventive Measure Taken
		Type of Material	Quantity	Source, If Known	Reason for Spill/Leak	Amount of Material Recovered	Material No longer exposed to Storm-water (Yes/No)	
4/20/15	Parking track west of Main Facility	Diesel	20 gallons	Locomotive	Fuel Tank Overfill	100%	All fuel recovered from MTCA Method A soil clean-up ERTS # 656260	Additional employee Training
4/24/15	Parking track west of Main facility	Diesel	10 gallons	Locomotive	Fuel Tank Overfill	100%	All fuel recovered from MTCA Method A soil clean-up ERTS # 656343	Additional employee Training
2/18/17	Parking track west of Main facility	Diesel	1-2 gallons estimated	Locomotive	Pressure relief valve failure	100%	All fuel recovered from MTCA Method A soil clean-up ERTS # 656343	Additional employee Training
3/7/17	Bull Pen – MH2	Sediment	Unknown	Construction Run Off	Port of Tacoma Construction project with insufficient BMPs.	N/A	Work stopped until multiple problems resolved.	Construction Stormwater General Permit BMP installation by Port of Tacoma

Worksheet #5	Completed by: <u>Mike Rhubright</u>
Identify Areas Associated With Industrial Activity	Title: <u>Senior Environmental Specialist</u>
	Date: <u>September 20, 2018</u>

**Completed by: Mike Rhubright**

**Title: Senior Environmental Specialist**

**Date: September 20, 2018**

## Identify Areas Associated With Industrial Activity

List areas and activities, not included on Worksheets 2, 2A, and 3, which may be sources of pollution. Discuss the potential of these areas and activities as potential pollutant sources and identify any pollutant that may be generated by that activity...

[illegible]



**Non-Stormwater Discharge  
Dry Weather (July, August, September)  
Assessment and Certification**

**Worksheet #6**  
Completed by: Mike Rhubright  
Title: Senior Environmental Specialist  
Date: September 20, 2018

The dry season inspection shall determine the presence of unpermitted non-stormwater discharges such as domestic wastewater, non-contact cooling water, or process wastewater (including leachate) to the stormwater drainage system. Such discharges, if illicit, must be eliminated within 30 days, or application submitted to Ecology for a NPDES Permit.

Tests may include: visual observations of flows, odors, and other abnormal conditions; dye tests, television line surveys; and/or analysis and validation of accurate piping schematics.

Date	Discharge Location (as indicated on the site map)	Method used to test or Evaluate Discharge	Describe Results from Test for Presence of Non-Stormwater Discharge	Identify Potential Significant Sources	Person who Conducted The Test
9/21/15	CB#1, CB#2 and MH2	Visual	No flow observed		Mike Rhubright
7/28/16	CB#1, CB#2 and MH2	Visual	No flow observed		Mike Rhubright
7/27/17	CB#1, CB#2 and MH2	Visual	No flow observed		Dan Knouff
7/30/18	CB#1, CB#2 and MH2	Visual	No flow observed		Dan Knouff

**CERTIFICATION** (Other certification document may be used as required in Section S4 of the Permit)

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information. *Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

A. Name and Title: Dale King, Superintendent

B. Phone: 253-502-8894

C. Signature

D. Date Signed



<p align="center"><b>Non-Stormwater Discharge Assessment and Failure To Certify Notification</b></p>		<p align="center"><b>Worksheet #7</b></p> <p>Completed by: <u>Mike Rhubright</u></p> <p>Title: <u>Senior Environmental Specialist</u></p> <p>Date: <u>September 20, 2018</u></p>	
<p>If you cannot feasibly evaluate the entire stormwater drainage system, fill in the table below with the appropriate information and sign this form to certify the accuracy of the included information.</p> <p>List all outfalls or storm drains tested or evaluated, describe any potential sources of non-stormwater pollution from listed outfalls or drains, and state the reason(s) why certification is not possible. Use the key from your site map to identify each outfall.</p>			
Identify Discharge Location Not Tested/Evaluated	Description of Why Certification is Infeasible	Description of Potential Sources of Non-Stormwater Pollution	
<p align="center"><b>CERTIFICATION</b> (Other certification document may be used as required in Section S4 of the Permit)</p>			
<p>I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information. <b>Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</b></p>			
A. Name and Title		B. Phone:	
C. Signature		D. Date Signed	

## Minimum BMP Identification

Worksheet #8

Completed by: Mike Rhubright

Title: Senior Environmental Specialist

Date: September 20, 2018

Describe the BMPs that are needed for the facility to address existing and potential pollutant sources identified in Worksheets #3, 4, and 5. The description shall include the following minimum requirements.

BMPs	Brief Description of Activities or Improvements
Good Housekeeping	<p>Sweep external impervious surfaces regularly with a vacuum street sweeper. Frequency to be adjusted as necessary to control turbidity. Document sweeping events and attach to this plan. Inspect O/W separators regularly and clean as necessary when &gt;2" of oil accumulate in second chamber. Document inspections and cleanings and attach to this plan.</p> <p>Clean track pans as necessary to maintain proper storm flow.</p> <p>Capture all locomotive wash water and transport off site for proper disposal. Clean washing area prior to removing catch basin insert. Clean sanding area as necessary.</p> <p>Properly store and dispose all maintenance fluids and batteries and prevent contact with stormwater.</p>
Preventive Maintenance	<p>Conduct all planned maintenance in the covered maintenance building. Immediately clean up all spills of solid or liquid materials and arrange for proper storage/disposal.</p> <p>Fuel and park locomotives only over track pans in designated mechanical areas.</p> <p>Identify and correct appropriate leaks.</p> <p>Repair any defects or damage to track pans, O/W separators, or other stormwater quality control devices.</p>
Spill Prevention and Emergency Cleanup	<p>Maintain adequate spill response materials and equipment on site.</p> <p>Clean up all spills immediately.</p> <p>Notify Environmental Compliance office of all spills immediately.</p> <p>Mobilize Emergency Response Contractor if necessary.</p>

BMPs	Brief Description of Activities or Improvements
Inspections	<p>Oil/Water Separators – visually check for proper function and accumulated oils</p> <p>Parking lot catch basins – probe to determine sediment depth – clean when within 6” of outlet</p> <p>Wash pad – visually inspect for accumulated contaminants. Ensure pad is cleaned before removing catch basin insert.</p> <p>CB #1, CB2 and MH2 sample points – visually inspect for turbidity and sheen during each sampling event. Visually inspect once each dry season for process flows.</p> <p>Stormwater collection system – visually inspect during each sample collection event.</p>
Source Control BMPs	<p>Park idling locomotives only over track pans when possible. Discharge sanitary wastes only in the sanitary dump station</p> <p>Conduct all planned maintenance activities in covered or bermed areas</p> <p>Do not allow maintenance fluids to intentionally discharge into track pans</p>
Erosion and Sediment Control BMPs (if applicable)	<p>Use appropriate BMPs to ensure no sediment enters storm drainage from Rail construction projects.</p>



## Additional BMP Identification

Worksheet #8A

Completed by: Mike Rhubright

Title: Senior Environmental Specialist

Date: September 20, 2018

Describe any treatment and innovative BMPs that are required to address existing and potential pollutant sources identified in Worksheet 3, 4, and 5. These are BMPs needed to prevent the discharge of significant amounts of pollutants despite implementation of operational and source control BMPs.

BMPs	Brief Description of Activities or Improvements
Treatment BMPs	<p>Installed containment pans in tracks where locomotives are fueled and stored while idling, connect to oil/water separators.</p> <p>Installed properly two sized API oil/water separators.</p> <p>Installed oil skimmers to minimize loading and recover used oil for both oil/water separators at Tacoma Rail's main facility.</p>
Emerging technologies	N/A
Flow Control BMPs (if applicable)	

BMP Implementation		Worksheet #9 Completed by: <u>Mike Rhubright</u> Title: <u>Senior Environmental Specialist</u> Date: <u>September 20, 2018</u>		
Develop a plan for implementing each BMP. Describe the steps necessary to implement the BMP (i.e., any construction or design), the schedule for completing those steps (list dates) and the person(s) responsible for implementation.				
BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action	
Good Housekeeping	1. Maintain arrangements with City to sweep paved surfaces	Ongoing – frequency adjusted to maintain turbidity levels within limits	Dan Knouff	
	2. Collection system/OW inspection/maintenance	Ongoing – Inspection and cleaning frequency adjusted to meet goals	Daniel Knouff,	
	3. Spill cleanups, waste management	Continual	Daniel Knouff	
Preventive Maintenance	1. Treatment BMP Maintenance	As necessary	Dan Knouff	
	2. Locomotive maintenance	Continual	Kari Halliday	
	3.			
	4.			
Spill Prevention and Emergency Cleanup	1. Maintain spill response equipment/supplies	Continual	Daniel Knouff	
	2. Spill cleanup	As necessary	Daniel Knouff, All	
	3. Maintain spill cleanup contract	Continual	Jeromy Adams	
Inspections	1. Track pans, OW separators, Wash Pad	Ongoing – Inspection frequency adjusted to meet goals	Daniel Knouff /Mike Rhubright	
	2. Outfall, catch basins, collection system	Periodically and during collection events	Daniel Knouff /Mike Rhubright	
	3.			

BMPs	Description of Action(s) Required for Implementation	Schedule Milestone and Completion Date(s)	Person Responsible for Action
Source Control BMPs	1. Park idling locomotives only over track pans when practical.	Continual	Kari Halliday, Locomotive Engineers
	2. Discharge sanitary wastes only in the sanitary dump station	Continual	Kari Halliday
	3 Conduct all planned maintenance activities in covered areas	Continual	Kari Halliday, mechanics
	4. Do not allow maintenance fluids to overflow track pans	Continual	Kari Halliday, mechanics
	5.		
	6.		
Erosion and Sediment Control	1.NA		
	2.		
	3.		
	4.		
Treatment BMPs	1. Install track pans	Done	
	2. Install oil/water separators	Done	
	3. Install Oil Skimmers	Completed in 2014	
	4. Secondary Media Treatment	Completed in 2018	
Emerging technologies	1.		
	2.		
	3.		
	4.		
Flow Control BMPs			

## Employee Training

Worksheet #10

Completed by: Mike Rhubright

Title: Senior Environmental Specialist

Date: September 20, 2018

Describe the annual training of employees on the SWPPP, addressing spill response, good housekeeping, and material management practices.

Training Topics	Brief Description of Training Program/Materials (e.g., film, newsletter course)	Schedule for Training (list dates)	Attendees
1.) Rail employees			
Spill Prevention and Response	Stormwater training video – coincident with oil SPCC training requirements	TBA	All mechanics and maintenance personnel
Good Housekeeping	Stormwater training video	7/14/15, 7/16/15	All mechanics and maintenance personnel
Material Management Practices	Hazardous Waste training	TBA	
2.) P2 TEAM:			
SWPPP Implementation	SWPPP Development	7/14/15, 7/16/15	Dale King, Jeremy Adams, Mike Rhubright, Kari Halliday, Daniel Knouff, Alan Matheson
Monitoring Procedures			



<b>RECORD OF VISUAL INSPECTIONS of STORMWATER DISCHARGES</b>	<b>Worksheet #11</b>	
	Completed by <b>Mike Rhubright</b>	
	Title:	Senior Environmental Specialist
	Date: 9/20/18	
* Must be conducted by qualified person identified in the SWPPP.		

List observed pollutants in all discharges and carefully assess the pollutant sources and action steps needed to control the pollutants. Record pollutant sources/generating activities, BMP adequacy, site map, and other facility information on Worksheets 1-9, inclusive.

Date	Surface Discharge ID	Ground Discharge ID	List of observed pollutants and descriptions of intensities of each.  Include floatables, oil sheen, discoloration, turbidity, odor, etc.  in the SW	Recommended Action Steps

Certification (Other certification document may be used as required in Section S4 of the Permit)

Certification by Responsible Company official: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information. **Based on my inquiry of the person or persons who manage the systems or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.**

Name \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_

Date Signed \_\_\_\_\_



#### Appendix D SWPPP Certification Form

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

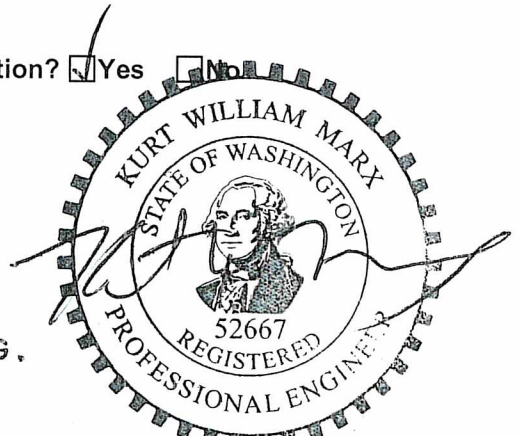
Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☒ Yes ☐ No

If Yes:

- Type of Corrective Action?: ☐ Level 1 ☒ Level 2 ☒ Level 3
- Date SWPPP update/revision completed: 8/20/18

Briefly describe SWPPP Update (use backside, if necessary):

Addition of secondary treatment media for metals and turbidity at all 3 outfall basins.



\*Note: For Level 3 Corrective Actions, a *Qualified Industrial Stormwater Professional* must review the revised SWPPP, and sign and certify below, in accordance with Condition S8.D.2.: "The Permittee has made appropriate revisions to the SWPPP to include additional Treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges. Based on my review of the SWPPP, discharges from the facility are reasonably expected to meet the ISGP benchmarks upon implementation."

KURT W. MARX, P.E.  
Qualified Industrial Stormwater Professional's Printed Name \*  
[Signature]  
Qualified Industrial Stormwater Professional's Signature \*

Engineer  
Title  
20 Sept 2018  
Date

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Dale King  
Operator's Printed Name \*  
[Signature]  
Operator's Signature \*

Superintendent  
Title  
9/20/18  
Date

\*Federal regulations require this document to be signed in accordance with Condition G2.



*Oil Spill Contingency Plan*  
*Field Guide*

*2601 SR 509 North Frontage Road  
Tacoma, Washington 98421*

*August 7, 2018*

Return this document to the Terminal Superintendent following any emergency requiring field documentation.

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## **Tacoma Rail Field Guide**

Copies of the Field Guide are available at the following locations:

- Tacoma Rail Headquarters on the SharePoint home page
- Operations Tower
- Spill Management Team

### **Initial Response Actions and Notifications**

The first Company employee on scene will function as the Person-in-Charge until relieved by a person who has been assigned to assume the role of the Incident Commander. The Person-in-Charge shall initiate the initial response actions as follows in this Field Guide.

### **Initial Response Actions**

#### **First Person to Observe Spill**

- Immediately upon discovery of a spill, responding personnel are to notify the 24-hour Operations Tower (253-396-3161) with the location and estimated size of the spill.
- Account for all personnel in the vicinity.
- Identify and assess fire/safety hazards.
- Deploy air monitoring.
- If safe to do so,
  - Approach the area from upwind.
  - Secure the area and assure the safety of people and the environment. Keep people outside the safety perimeter.
  - Stop the flow.
  - Contain the spill.
  - Assess and document the spill as described below and in Step 1.

Product Type and Potential Spill Volume	
Product Type	Information on cargo type is located on Tacoma Rail's on-line "Transportation Management System." The type of cargo can be identified with the STCC or placard number.
Potential Spill Volume	For crude oil unit trains, determine the number of cars affected and estimate the product volume based on a capacity of 29,988 gallons per car (714 bbls/car x 42 gallons/bbl) assuming a maximum of 10 cars.

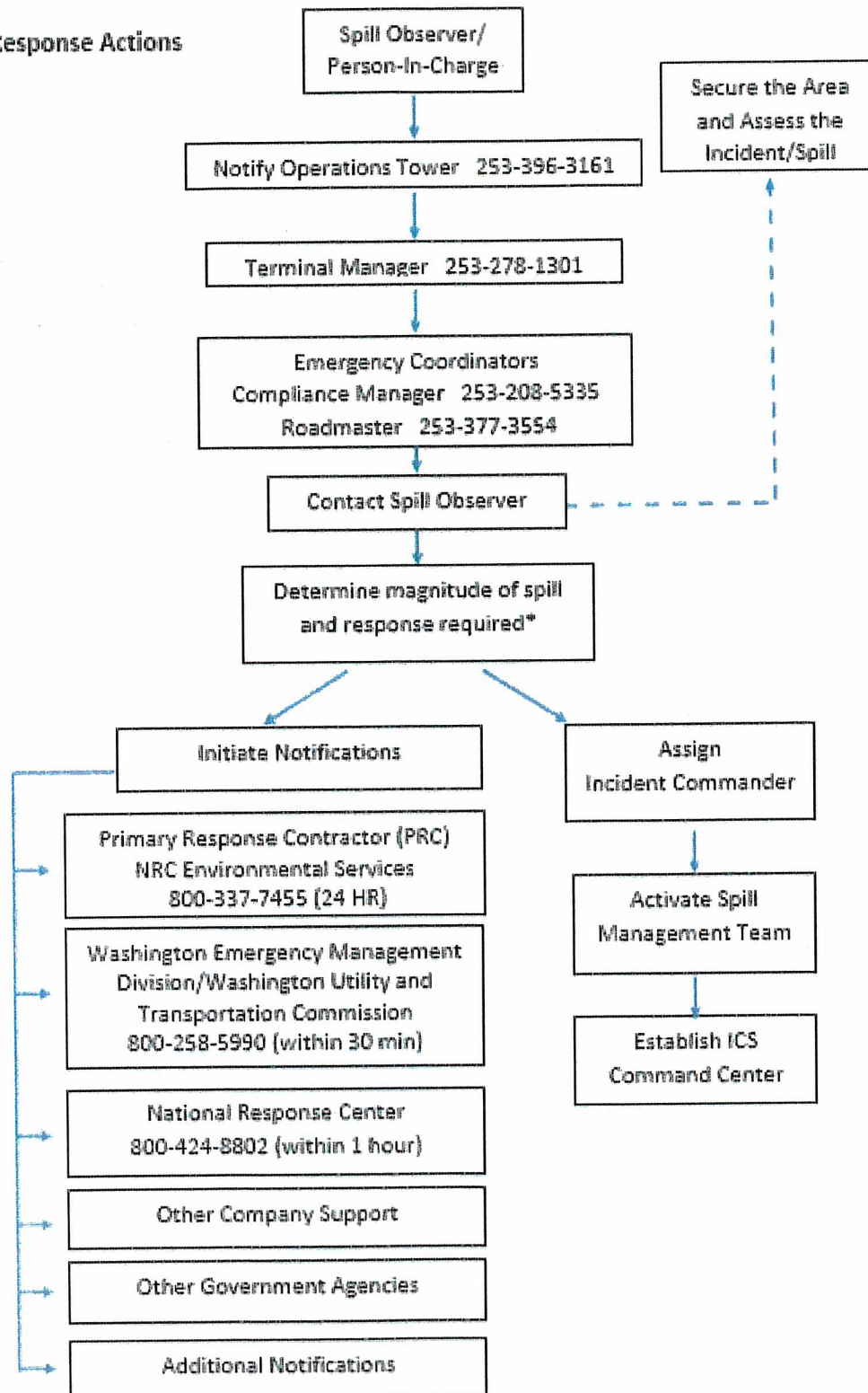


	<p>For non-unit train cargo, assume 10% of the total cars which will default to 1 car with a capacity of 29,988 gallons.</p> <p>For spills to water, refer to methods described in Ecology publication No. 96-250 "Guidelines for Determining Oil Spill Volume in the Field" to estimate volume and spill dimensions.</p>
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### Tacoma Rail Management

- Immediately on receiving notice from the first person observing a spill, the Operations Tower will notify the Terminal Manager (Todd Vincent).
- The Terminal Manager will notify the Compliance Manager (Josh Banks) and Roadmaster (Kyle Kellem) who serve as the initial Emergency Coordinators.
- The Emergency Coordinators establish contact with the first person observing the spill and make a decision on the level of notifications required.
  - Petroleum spills estimated to be less than 42 gallons (1 bbl), do not pose a threat to waters of the state, and the source is known do not require notification under this plan.
  - All spills to waters of the state or in a location which it is likely to escape into waters of the state require notification under this plan.
- Initiate notifications as described below in Steps 2 through 5. Record notifications on the "Documentation of all Notifications" form in this Field Guide.
- Assign an Incident Commander (IC).
- Activate all or a portion of the Spill Management Team and establish the ICS process.
- Scale the ICS response action as necessary to manage the spill.
- Begin preparation of the ICS 201 Incident Briefing document
- Assure documentation has been completed from initial discovery of spill to finish.
  - Update the "Spill Assessment Checklist" in this Field Guide as site conditions change
  - Update the "Environmental Conditions Worksheet" in this Field Guide each operations cycle.
- Provide a final spill report to Ecology.

Initial Response Actions



\*Scale the response action as necessary to manage the spill

### **Step 1: Assess the Incident/Spill**

Information about the spill should be as clear, concise, accurate and timely as possible. The minimum information reported, for initial report and update reports, should be:

1. Name and Telephone Number of the Caller
2. Date and Time of the call
3. Specific location of the Spill
4. Type of oil or product(s) Spilled
5. Estimated Quantity
6. Actions Taken To-Date
7. Assistance Required
8. Injuries
9. Weather Conditions
10. Reason for discharge (if known)

Complete the Oil Spill Information and Notification Report Form located in this Field Guide and return it to the Terminal Superintendent.

### **Step 2: Notify Central Reporting Office/Emergency Coordinator/Qualified Individual (QI)**

The Emergency Coordinators shall initiate notifications of response contractors, government agencies, spill management personnel and other notifications identified in this plan. The Emergency Coordinators shall ensure there is an IC appointed to manage the incident. One of the Emergency Coordinators may also function as the IC. Once an IC has been assigned Steps 3 through 5 below shall be initiated as soon as possible. All notifications shall be documented on a spill notification report form located in Appendix E and this Field Guide.

### **Step 3: Notify Primary Response Contractor**

The PRC will dispatch initial response resources within 30 minutes of receiving notification and will arrive within a maximum of six hours.

Primary Response Contractor Notifications	
Response Contractor Name	Contractor Contact Number (24 hours)
NRC Environmental Services	(800) 337-7455 (24-Hour)

### **Step 4: Notify National Response Center and Washington Emergency Management Division (WEMD)/Washington Utility and Transportation Commission (WUTC) Hazmat Notification**



All spills of oil or hazardous substance into navigable waters and/or groundwater as defined by the Clean Water Act (CWA) and all spills of a reportable quantity of hazardous substances (40 CFR Part 302) must be immediately reported by the spiller to the National Response Center, Washington Emergency Management Division (WEMD) and Washington Utility and Transportation Commission (WUTC) Hazmat Notification. Pursuant to WAC 480-62-310 the WEMD serves as the WUTC's designee for reporting spills of oil or hazardous substances. The National Response Center will contact appropriate local US Coast Guard (USCG) or Environmental Protection Agency (EPA) offices. WEMD will notify appropriate Department of Ecology Responders.

**REPORT THE FOLLOWING SPILLS TO the National Response Center AND WEMD IMMEDIATELY UPON DISCOVERY:**

- ALL SPILLS OF ANY SIZE TO WATERS OF THE STATE
- SPILLS THAT THREATEN TO ENTER WATERS OF THE STATE
- SPILLS OF UNKNOWN QUANTITY
- SPILLS TO GROUND

**Washington Emergency Management Division (WEMD) (within 30 minutes)**  
**1-800-258-5990**

**National Response Center (within 1 hour)**  
**1-800-424-8802**

### **Step 5: Make all other notifications directed under this plan**

The following Company and Spill Management Team personnel shall be notified.

Company Management and Spill Management Team Members	
Name	Contact Number
Dale King, Superintendent/COO • TPU Director	(253) 961-2485
Alan Matheson, Asst. Superintendent	(253) 405-6782
Tim Flood, Terminal Superintendent • Duty Trainmaster	(253) 377-1017 (253) 396-3161
Kyle Kellern, Roadmaster	(253) 377-3554



Dan McCabe, CIO/CFO	(253) 405-9559
Lori Daniels, Chief Administrative Officer	(253) 405-0814
Jeromy Adams, TPU Environmental Compliance Manager	(253) 365-5570
TPU Community and Media Services Manager (CMS)	(253) 223-2293
TPU Emergency Manager <ul style="list-style-type: none"> <li>Pierce County EOC (As necessary)</li> <li>City of Tacoma ECC (As necessary)</li> </ul>	(253) 878-2332
Josh Banks, Compliance Manager (Safety Officer)	(253) 208-5335
Todd Vincent, Terminal Manager	(253) 278-1301
Nora Doyle	(253) 370-6489

The following government agencies shall be notified.

Notifications to Government Agencies	
Government Agency Name	Contact Number
Tacoma Department of Emergency Management	(253) 594-7980
City of Tacoma Stormwater Catch Basin Dispatch	(253) 502-2222
Pierce County Emergency Management	(253)-798-6595
Port of Tacoma (Port Security)	1-800-258-5990

The following shall be notified.

Additional Notifications	
Name	Contact Number
Robinson Noble, Inc. (NRC Environmental Services Subcontractor)	(253) 475-7711
CTEH (NRC Environmental Services Subcontractor)	(253) 336-5957
Puyallup Tribe <ul style="list-style-type: none"> <li>Char Naylor</li> <li>Russ Ladley</li> <li>Rory Laducer</li> </ul>	(253) 680-5520, <a href="mailto:char.naylor@puyalluptribe.com">char.naylor@puyalluptribe.com</a> (253) 680-5560, <a href="mailto:russ.ladley@puyalluptribe.com">russ.ladley@puyalluptribe.com</a> (253) 573-5670, <a href="mailto:rory.laducer@puyalluptribe.com">rory.laducer@puyalluptribe.com</a>

Spill Assessment Checklist		
Completed	Task	Initials
	Ensure health and safety of responders and the public as necessary. Conduct site safety health assessment and safety briefing prior to operations in the field.	
	Determine Source and Location	
	Determine if the source is controlled or if it is an ongoing release. If continuous, determine release rate.	
	Estimate volume and size of spill (dimensions of sheen or pooled oil) and type of product – see section 4.3.1	
	Determine receiving environment – land, water, or land with potential for waterway impact	
	Implement site safety assessment and air monitoring procedures – see section 4.3.4 and 4.3.5	
	Consider immediate impacts to workers and public and action evacuation and continuous air monitoring, as needed.	
	Assess direction and rate of movement of spill, and implement spill tracking procedures and equipment – see section 4.3	
	Evaluate environmental conditions (topography, wind, currents, tides, flow rate, etc.) for influence on spill trajectory and response actions – see section 4.3.2	
	If spill to land, evaluate potential for groundwater impact – see section 4.3.6	
	Make all required notifications	
	Ensure Incident Commander is assigned and ICS is implemented. If large spill ensure unified command is initiated.	

Environmental Conditions Worksheet	
General	
Date	
Time	
Personnel	
Product Type	
Potential Spill Volume	
Rate of Release	
Flow direction of Release	
Air Temperature	
Water Temperature	
Wind Speed and Direction	
Precipitation	
Potentially impacted sensitive resources	
Marine Waters	
Tidal data	
Current speed and direction	
Sea state	
Freshwater	
Flow Rate/Discharge	
River Gradient	
River Stage/Seasonal Water Level	
Tidal Influence	



<b>Oil Spill Information and Notification Report Form</b>	
<i>Used to document initial spill information and notifications conducted as part of the response</i>	
<i>Initial Information and Notification to Company Reporting Office or QI by Person-In-Charge. Person in Charge is the person initially observing and reporting the spill. This form shall be maintained as part of on-going assessments.</i>	
<b>Contact or Information Type</b>	<b>Information</b>
Name and telephone number of person reporting the spill	
Date and time of the call	
Name of person contacted (Specify if Management or QI)	
Specific location of the Spill	
Type of oil or product(s) Spilled	
Estimated Quantity	
Actions Taken To-Date	
Assistance Required	
Injuries	
Weather Conditions	
Reason for discharge (if known)	

Documentation of all Notifications	
Notification	Contact Information
National Response Center at 800-424-8802	Contact Name:  Date/Time of Contact:  Report # given by National Response Center
WA Emergency Management at 800-258-5590	Contact Name:  Date/Time of Contact:  Report # given by WEMD
	Contact Name:  Date/Time of Contact:
	Contact Name:  Date/Time of Contact:
	Contact Name:  Date/Time of Contact:
	Contact Name:  Date/Time of Contact:
	Contact Name:  Date/Time of Contact:
	Contact Name:  Date/Time of Contact:

*Tacoma Rail Oil Spill Contingency Plan*  
*2601 SR 509 North Frontage Road, Tacoma, Washington 98421*  
*August 7, 2018*  
*Page H-12*

## **ICS 201 Form**

1. Incident Name	2. Prepared by: (name) Date: _____ Time: _____	INCIDENT BRIEFING ICS 201-CG
3. Map/sketch (include sketch, showing the total area of operations, the incident site/area, overlaid routes, trajectories, impacted shorelines, or other graphics depicting situational and response status)		
4. Current situation: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		





1. Incident Name	2. Prepared by: (name)  Date: _____ Time: _____	<b>INCIDENT BRIEFING</b> <b>ICS 201-CG</b>
3. Current Organization (fill in additional appropriate organization)		
<div style="margin-left: 400px;"> <hr style="border: 0; border-top: 1px solid black; width: 200px;"/> <hr style="border: 0; border-top: 1px solid black; width: 200px;"/> <hr style="border: 0; border-top: 1px solid black; width: 200px;"/> <hr style="border: 0; border-top: 1px solid black; width: 200px;"/> <hr style="border: 0; border-top: 1px solid black; width: 200px;"/> </div> <div style="margin-left: 150px; margin-top: 100px;"> <div style="display: flex; align-items: center;"> <div style="width: 10px; height: 100px; border-left: 1px solid black; margin-right: 5px;"></div> <div style="display: flex; flex-direction: column; gap: 10px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>Safety Officer</div> <div style="flex-grow: 1; border-bottom: 1px solid black; margin-left: 10px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>Liaison Officer</div> <div style="flex-grow: 1; border-bottom: 1px solid black; margin-left: 10px;"></div> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; border: 1px solid black; margin-right: 5px;"></div> <div>Public Information Officer</div> <div style="flex-grow: 1; border-bottom: 1px solid black; margin-left: 10px;"></div> </div> </div> </div> </div> <div style="margin-left: 150px; margin-top: 100px;"> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="width: 100%; height: 10px; border: 1px solid black; margin-bottom: 5px;"></div> <div style="width: 20%; height: 20px; border: 1px solid black; margin: 0 auto;"></div> <div style="width: 20%; height: 20px; border: 1px solid black; margin: 0 auto;"></div> <div style="width: 20%; height: 20px; border: 1px solid black; margin: 0 auto;"></div> <div style="width: 20%; height: 20px; border: 1px solid black; margin: 0 auto;"></div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="width: 20%; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;">Operations Section</div> <div style="border: 1px solid black; height: 30px; margin-top: 2px;"></div> </div> <div style="width: 20%; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;">Planning Section</div> <div style="border: 1px solid black; height: 30px; margin-top: 2px;"></div> </div> <div style="width: 20%; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;">Logistics Section</div> <div style="border: 1px solid black; height: 30px; margin-top: 2px;"></div> </div> <div style="width: 20%; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;">Finance Section</div> <div style="border: 1px solid black; height: 30px; margin-top: 2px;"></div> </div> </div> </div> </div>		



## INCIDENT BRIEFING (ICS 201-CG)

**Purpose.** The Incident Briefing form provides the Unified Command (and the Command and General Staffs assuming command of the incident) with basic information regarding the response situation and the resources allocated to the incident. It is also a permanent record of the initial incident response.

**Preparation.** This briefing form is prepared under the direction of the initial Incident Commander for presentation to the Unified Command. This form can be used for managing the response during the initial period until the beginning of the first operational period for which an Incident Action Plan (IAP) is prepared. The information from the ICS form 201-CG can be used as the starting point for other ICS forms or documents.

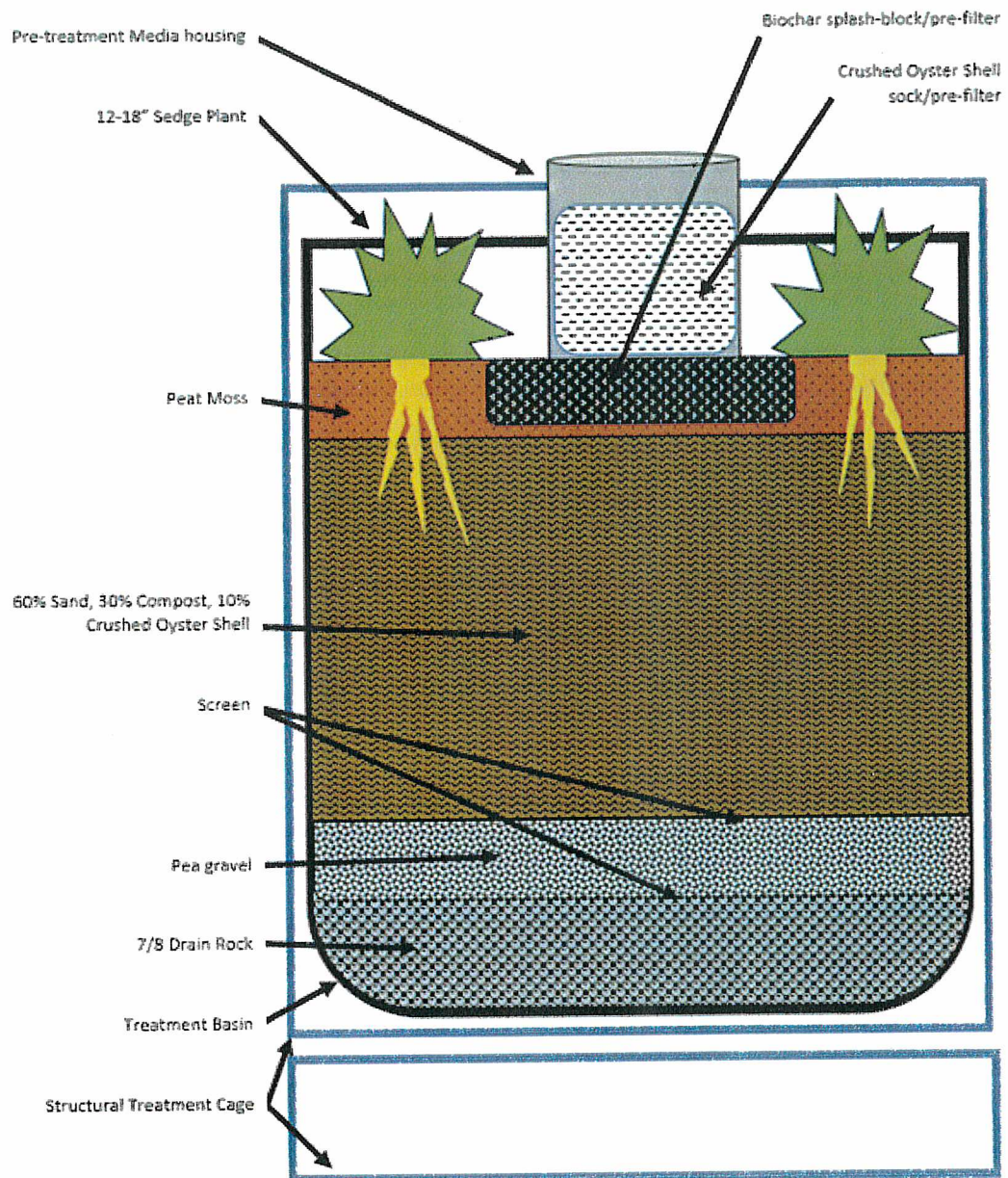
- Page 1 (Map/Sketch) may transition immediately to the Situation Map.
- Page 2 (Summary of Current Actions) may be used to continue tracking the response actions and as the initial input to the ICS form 215-CG and the ICS form 232-CG.
- Page 3 (Current Organization) may transition immediately to the Organization List (ICS form 203-CG) and/or Organization Chart (ICS form 207-CG).
- Page 4 (Resources Summary) may be used to continue tracking resources assigned to the incident and as input to Individual T-Cards (ICS form 216) or other resource tracking system.

**Distribution.** After the initial briefing of the Unified Command and General Staff members, the Incident Briefing form is duplicated and distributed to the Command Staff, Section Chiefs, Branch Directors, Division/Group Supervisors, and appropriate Planning and Logistics Section Unit Leaders. The sketch map and summary of current action portions of the briefing form are given to the Situation Unit while the Current Organization and Resources Summary portion are given to the Resources Unit. All completed original forms **MUST** be given to the Documentation Unit.

Item #	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Prepared By	Enter the name and position of the person completing the form.
	Date	Enter date prepared (month, day, year).
	Time	Enter time prepared (24-hour clock).
3.	Map/Sketch	Show the total Area of Operations, the incident site, overflight results, trajectories, impacted shorelines, or other graphics depicting situation and response status on a sketch or attached map.
4.	Current Situation	Enter short, clear, concise summary of the actions taken in managing the initial response.
5.	Initial Response, Objectives, Current & Planned Actions	Enter short, clear, concise statements of the objectives for managing the initial response, any actions taken in response to the incident, including the time, and note any significant events or specific problem areas as well as planned actions for the future.
6.	Current Organization	Enter, on the organization chart, the names of the individuals assigned to each position. Modify the chart as necessary, using additional boxes in the space provided under the Sections. Blank lines are provided in the Unified Command section for adding other agencies or groups participating in the Unified Command and/or for multiple Responsible Parties.
7.	Resources Summary	Enter the following information about the resources allocated to the incident:
	Resource	Description of the resource (e.g., open water boom, skimmer, vac truck, etc.).
	Resource Identifier	Identifier for the resource (e.g., radio call-sign, vessel name, vendor name, license plate, etc.).
	Date/Time Ordered	Date and time ordered (24-hour clock).
	ETA	Estimated date and time for the resource to arrive at the staging area.
	On-Scene	"X" upon the resource's arrival.
	Notes	Location of the resource, the actual assignment, and the status of the resource (if other than working).

NOTE: Additional pages may be added to ICS 201-CG if needed

## Appendix F Secondary Media Treatment (Specifications/Cut sheet)



## Secondary Media Treatment

### Media Treatment (Specifications/Cut sheet)

#### Media Treatment Filter (Key)



Biochar splash-block/pre-filter



Peat Moss



60% Sand, 30% Compost, 10% Crushed Oyster Shell



Pea gravel



Crushed Oyster Shell sock/pre-filter



7/8 Drain Rock



12-18" Sedge Plant



Structural Treatment Cage



Treatment Basin

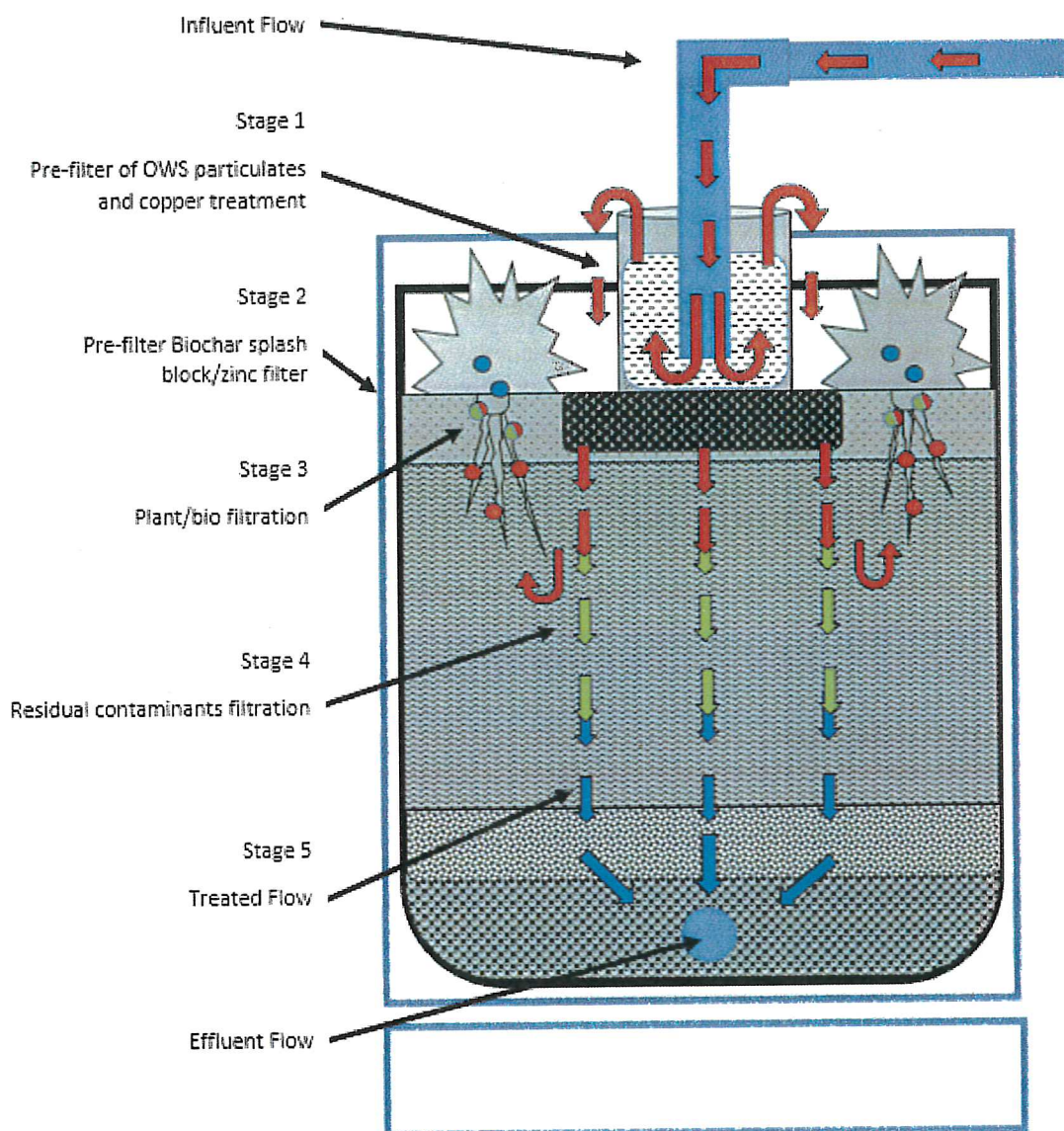


Pre-treatment Media housing



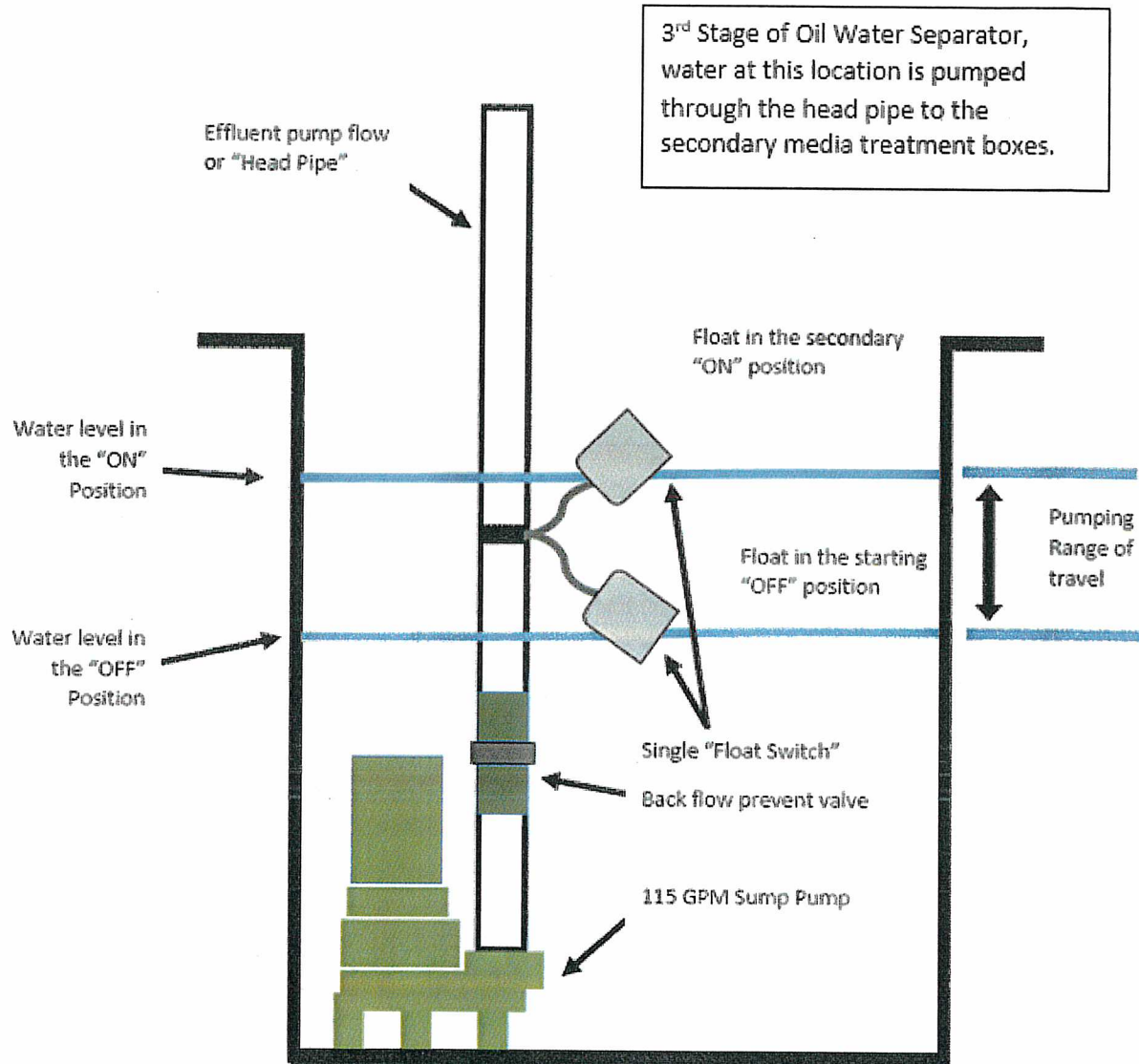
## Secondary Media Treatment

### Treatment Box Flow Diagram



## Secondary Media Treatment

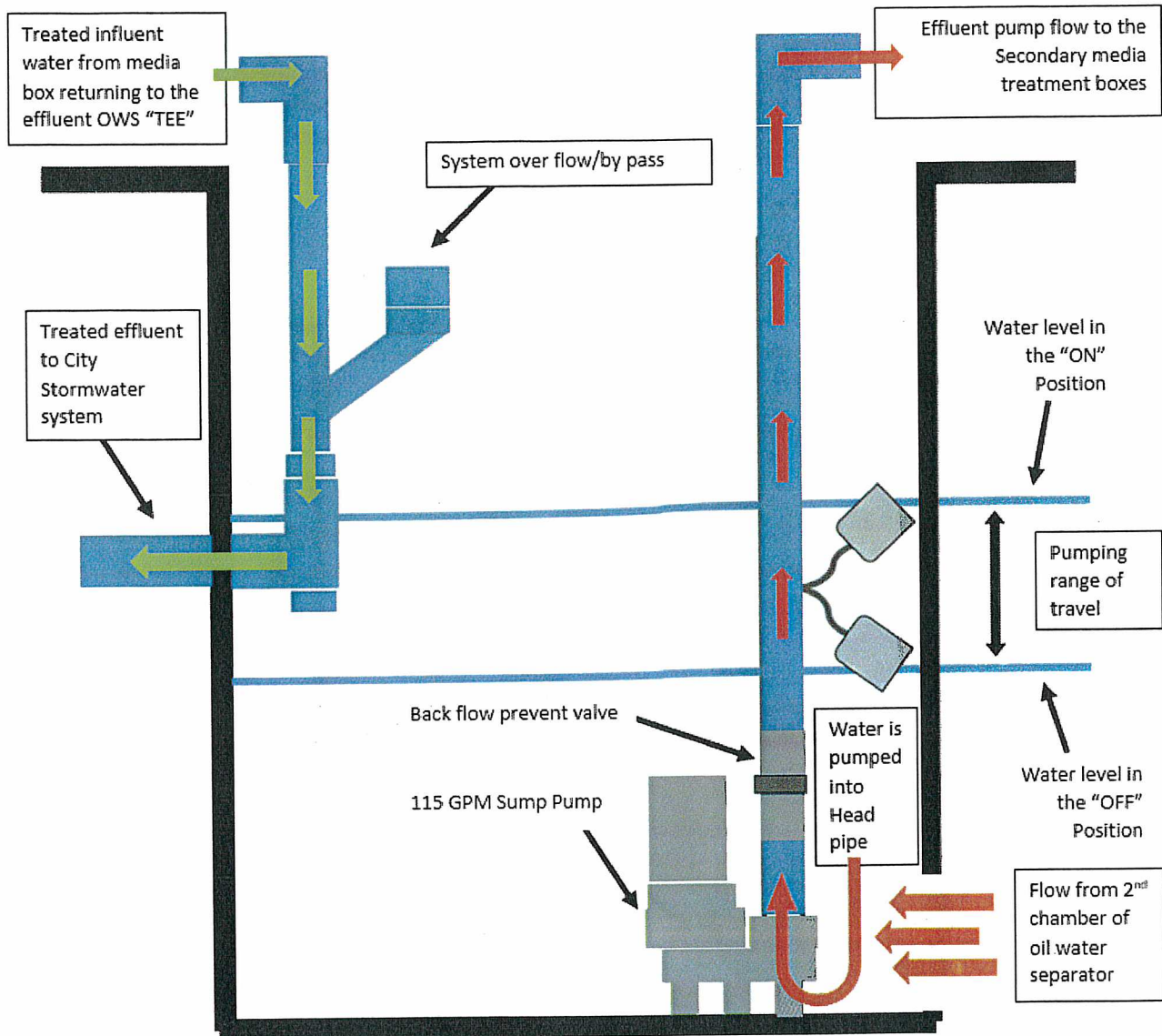
### Pump chamber diagram





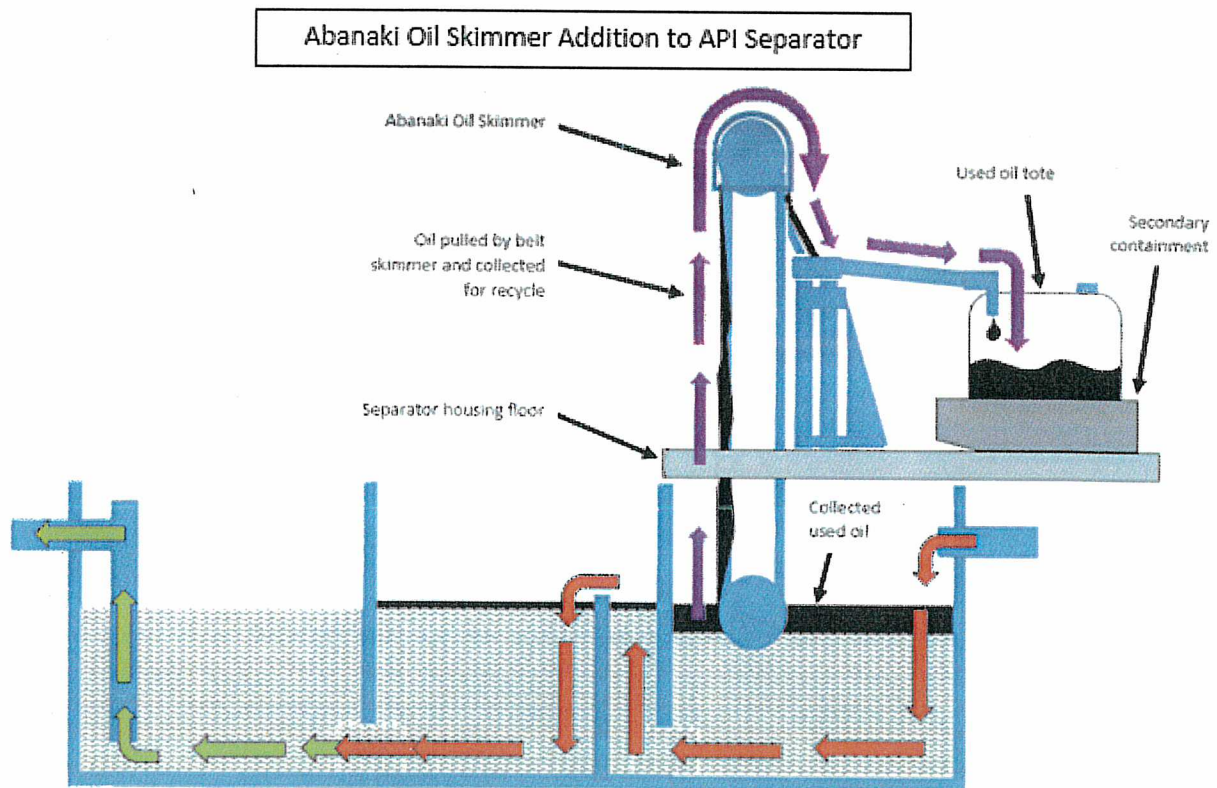
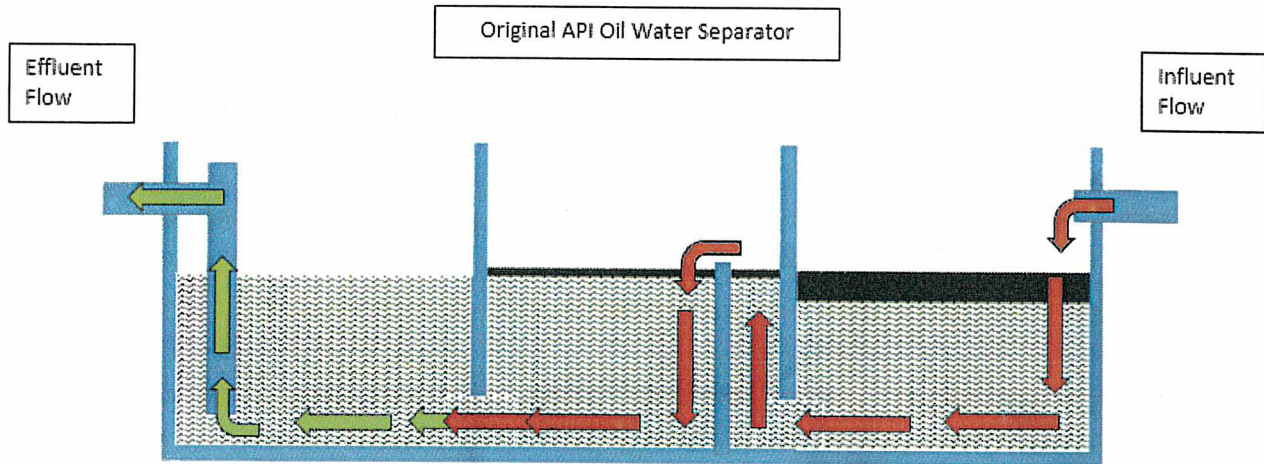
## Secondary Media Treatment

### Flow detail, pump chamber



## Secondary Media Treatment

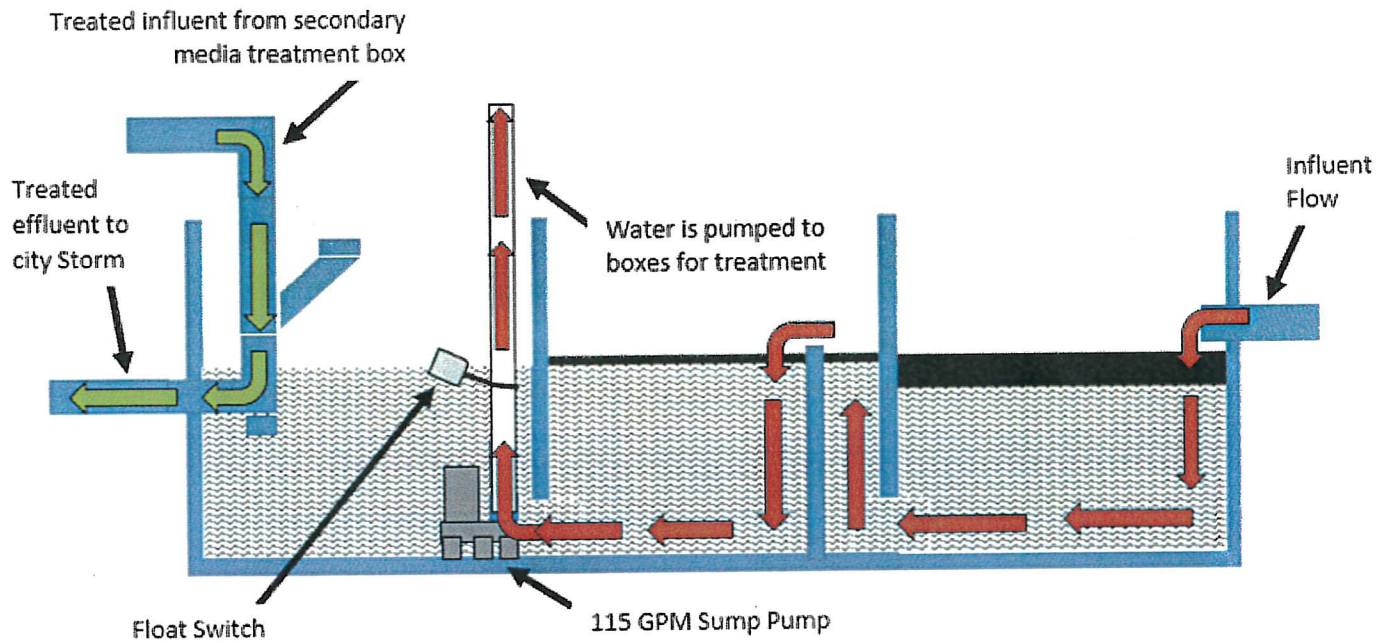
### Oil Water Separator - BMP progression



## Secondary Media Treatment

### Oil Water Separator - BMP progression

Secondary Media treatment Pump System  
Addition to API Separator



# APPENDIX E

## SOIL SAMPLE ANALYTICAL REPORT

FEB 26, 2020

## DANGEROUS WASTE DESIGNATION FORM

A. WASTE STREAM NAME AND GENERATION INFORMATION									
Hazardous Waste Location: <b>Tacoma Rail</b>									
Generation Process: <b>Drilling Spoils</b>									
RCRA ID Number that waste will be managed under: <input checked="" type="checkbox"/> <b>Tacoma Rail – WAD988467080</b> <b>WAD988467080</b>					Total Quantity and/or Estimated Generation rate: • <b>2 55-Gallon Drums</b>				
Other Descriptions (e.g., Shop, Project, Etc.): • <b>Located in gravel parking lot</b>									
B. WASTE PROPERTIES, CHARACTERISTICS, and CONSTITUENTS:									
<b>Physical State:</b>		<input type="checkbox"/> Solid (pass paint filter)			<b>pH:</b>		<input type="checkbox"/> ≤ 2 <b>[D0002]</b>		
		<input checked="" type="checkbox"/> Solid w/freestanding or absorbed liquid					<input checked="" type="checkbox"/> > 2 but < 12.5		
		<input type="checkbox"/> Liquid (If liquid, indicated if the liquid is:			<input type="checkbox"/> Not Applicable		<input type="checkbox"/> ≥ 12.5 <b>[D0002]</b>		
		<input type="checkbox"/> Single Layer					<input type="checkbox"/> < 140 °F <b>[D001]</b>		
		<input type="checkbox"/> Multi-layer			<b>Flashpoint:</b>		<input type="checkbox"/> > 140 °F but < 200 °F		
		<input type="checkbox"/> Gas					<input type="checkbox"/> > 200 °F		
<b>Characteristic</b>		<b>PCB Content</b>		<b>TCLP Metals</b>		<b>Total Metals</b>			
<b>Type</b>	<b>D-Code</b>	<b>Quantity</b>	<b>Notes</b>	<b>Analyte</b>	<b>D-Code</b>	<b>Analyte</b>	<b>Quantity</b>	<b>Unit</b>	<b>Non-Detect</b>
<input type="checkbox"/> Ignitable	<b>[D001]</b>	<input type="checkbox"/> Not Sampled		<input type="checkbox"/> Arsenic ≥ 5.0 mg/L	<b>[D004]</b>	Arsenic:	<b>&lt;2.5</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
<input type="checkbox"/> Corrosive	<b>[D002]</b>	<input checked="" type="checkbox"/> Not Detected	<b>Non TSCA or State Regulated</b>	<input type="checkbox"/> Barium ≥ 100.0 mg/L	<b>[D005]</b>	Barium:	<b>17.4</b>	<b>mg/Kg</b>	<input type="checkbox"/> Not Detected
<input type="checkbox"/> Reactive	<b>[D003]</b>			<input type="checkbox"/> Cadmium ≥ 1.0 mg/L	<b>[D006]</b>	Cadmium:	<b>&lt;0.8</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
<input type="checkbox"/> Toxic	<b>[D004 – D043]</b>			<input type="checkbox"/> Chromium ≥ 5.0 mg/L	<b>[D007]</b>	Chromium:	<b>12.1</b>	<b>mg/Kg</b>	<input type="checkbox"/> Not Detected
		<input type="checkbox"/> ≥ 2 ppm and < 50 ppm	<b>Potentially TSCA Regulated/State PCB Waste (WPCB)</b>	<input type="checkbox"/> Lead ≥ 5.0 mg/L	<b>[D008]</b>	Lead:	<b>&lt;2.5</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
		<input type="checkbox"/> ≥ 50 ppm	<b>[TSCA Regulated]</b>	<input type="checkbox"/> Mercury ≥ 0.2 mg/L	<b>[D009]</b>	Mercury:	<b>&lt;0.05</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
				<input type="checkbox"/> Selenium ≥ 1.0 mg/L	<b>[D010]</b>	Selenium:	<b>&lt;2.5</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
				<input type="checkbox"/> Silver ≥ 5.0 mg/L	<b>[D011]</b>	Silver:	<b>&lt;0.7</b>	<b>mg/Kg</b>	<input checked="" type="checkbox"/> Not Detected
				Check if:	<input type="checkbox"/> Assumed	Copper:	<b>5.6</b>	<b>mg/Kg</b>	<input type="checkbox"/> Not Detected
					<input type="checkbox"/> TCLP Conducted	Nickel:	<b>5.6</b>	<b>mg/Kg</b>	<input type="checkbox"/> Not Detected
					<input checked="" type="checkbox"/> TCLP Not Conducted	Zinc:	<b>20.2</b>	<b>mg/Kg</b>	<input type="checkbox"/> Not Detected
<b>List Here:</b> • Lab data does not indicate that material is toxic		<b>Note:</b> IF WASTE STREAM IS BEING MANAGED AS TSCA WASTE, DO NOT USE WPCB STATE CODE PER WAC 173-303-071(3)(k)		<b>Comments:</b> • Lab data does not necessitate TCLP		<b>Comments:</b> • No total concentrations of metals necessitated TCLP or disposal considerations.			
Composition (list all constituents, including debris, any absorbents, liquid range, etc.).									
• <b>Soils, Water, Sludges</b>									
<b>Constituent</b>					<b>Volume (Range %)</b>				
Soils					50% - 90%				
Water					10% -50%				



C. LISTED WASTE		
Is the Waste:		
<input type="checkbox"/> A Discarded Listed Chemical Product (U or P List):		
<input type="checkbox"/> A Listed Source Waste (F or K List):		
<input checked="" type="checkbox"/> Not Applicable:		
D: WA STATE CRITERIA WASTE		
<input type="checkbox"/> Not applicable per WAC 173-303-070(5): Further designation will not change the generator status or change the way the must be managed.		
WA Toxic Criteria	WA Persistent Criteria	WA Persistent Criteria
Equivalent Concentration (E.C)	Total Halogenated Organic Compounds	Total Polycyclic Aromatic Hydrocarbons
<input checked="" type="checkbox"/> <0.001 [not a Toxic Criteria DW*]	<input checked="" type="checkbox"/> <0.01 [Not Applicable]	<input checked="" type="checkbox"/> ≤ 1.0% [Not Applicable]
<input type="checkbox"/> 0.001 ≥ 1.0 % [WT02 – DW]	<input type="checkbox"/> 0.01 to 1.0% [WP02 – DW]	<input type="checkbox"/> > 1.0% [WP03 – EHW]
<input type="checkbox"/> ≥ 1.0% [WT01 – EHW**]	<input type="checkbox"/> > 1.0% [WP01 – EHW]	
*DW: Dangerous Waste **EHW: Extremely Hazardous Waste		
E: ADDITIONAL INFORMATION		
(Describe any additional information about the waste (e.g. process knowledge statement, regulatory exemptions, assumptions made, etc.)		
<p>Waste is comprised of drilling spoils generated during the installation of a steel monopole structure at the Tacoma Rail Headquarters Facility.</p> <p>The material was evaluated for the following analytes:</p> <ul style="list-style-type: none"> <li>Petroleum Hydrocarbons <ul style="list-style-type: none"> <li>Gasoline Range (NWTPH-G)</li> <li>Diesel Range (NWTPH-D)</li> </ul> </li> <li>BTEX</li> <li>Chlorinated Solvents (8260/624 VOA)</li> <li>Total Metals (RCRA 8 + Nickel, Copper, and Zinc)</li> <li>pH (9040/9045)</li> <li>PCBs (8082/608)</li> </ul> <p>Upon receipt of the analytical results, the information was utilized to conduct a book designation on the monopole drilling spoils generated at the Tacoma Rail Headquarters Facility. As a part of this effort the following toxicity categories were determined:</p> <p>Toxicity Categories:</p> <ul style="list-style-type: none"> <li>X = 0.000000</li> <li>A = 0.002100</li> <li>B = 0.002020</li> <li>C = 0.001210</li> <li>D = 0.000000</li> </ul> <p>The corresponding Equivalent Concentration is 0.0000366. This Equivalent Concentration qualifies as non-dangerous waste. The equivalent concentration calculation is shown below:</p> $EC = \frac{\sum X}{1} + \frac{\sum A}{10} + \frac{\sum B}{100} + \frac{\sum C}{1,000} + \frac{\sum D}{10,000} = \frac{0}{1} + \frac{0.0021}{10} + \frac{0.00202}{100} + \frac{0.00121}{1,000} + \frac{0}{10,000} = 0.0002314$ <p>Given the information above, and based upon the analytical results prepared by Spectra Laboratories, the Tacoma Rail Monopole Drilling Spoils were determined to be non-hazardous, and will be disposed of at an appropriate facility</p>		
Attachments:		
<input type="checkbox"/> Field Report <input checked="" type="checkbox"/> Laboratory Data <input type="checkbox"/> Other:		
F. WASTE DESIGNATION SUMMARY		
<input type="checkbox"/> Dangerous Waste	USDOT Proper Shipping Name:	Non-DOT Regulated Material    Waste Codes: Not Applicable
<input type="checkbox"/> TSCA Regulated Waste	TSCA Description:	Not Applicable
<input type="checkbox"/> Non Hazardous Solid Waste	Solid Waste Description:	Non-Dangerous Waste (Drilling Spoils)
Designation Performed by:		James Bozic
Title:	Senior Environmental Specialist	Date: April 3, 2020

Analyte					CAS					Concentration*					Toxicity <sup>Source</sup>					Toxic Category					Concentration (mass %)																													
TOTAL METALS by 6010C/7471B																				X					A					B					C					D														
Arsenic					7440-38-2					0					LC50 Oncorhynchus mykiss (Rainbow Trout) >170 - <15,610 ug/L/96hr <sup>3</sup>					B															0.00E+00																			
Barium					7440-39-3					17.4					LC50 Lepomis macrochirus (Bluegill) 198000 ug/L/96hr <sup>3</sup>					NOT APPLICABLE																																		
Cadmium					7440-43-9					0					LC50 Oncorhynchus mykiss (Rainbow Trout) 0.003 mg/L/96 hr <sup>3</sup>					X					0.00E+00																													
Chromium					7440-47-3					12.1					LC50 Danio rerio (Zebra Danio) 3.9 mg/kg/24 hr <sup>3</sup>					C																				1.21E-03														
Copper					7440-50-8					15.4					LC50 Pimephales promelas (fathead minnow) 0.02 mg/l/96 hr <sup>3</sup>					A										1.54E-03																								
Lead					7439-92-1					0					LC50 Oncorhynchus mykiss (Rainbow Trout) 0.14 mg/L/336 hr <sup>3</sup>					B															0.00E+00																			
Manganese					7439-96-5										LC50 Oncorhynchus mykiss (Rainbow Trout) 7.89 mg/kg <sup>3</sup>					C																				0.00E+00														
Mercury					7439-97-6					0					LC50 Oncorhynchus mykiss (Rainbow Trout) 5 ug/L/192 hr <sup>3</sup>					X					0.00E+00																													
Nickel					7440-02-0					5.6					LC50 Oncorhynchus mykiss (Rainbow Trout) 50 ug/L/672 hr <sup>3</sup>					A										5.60E-04																								
Selenium					7782-49-2					0					LC50 Oncorhynchus mykiss (Rainbow Trout) 5000 ug/L/672 hr <sup>3</sup>					C																				0.00E+00														
Silver					7440-22-4					0					LC50 Oncorhynchus mykiss (Rainbow Trout) 6.2 ug/L/ 96hr <sup>3</sup>					X					0.00E+00																													
Zinc					7440-66-6					20.2					LC50 Oncorhynchus tshawytscha (Chinook Salmon) 0.182 mg/L/96 hr <sup>3</sup>					B															2.02E-03																			
VOLATILES by EPA 8260C																																																						
Dichlorodifluoromethane					75-71-8										LD 50 Rat Inhalation >800,000 mg/L <sup>2</sup>					NOT APPLICABLE																																		
Chloromethane					74-87-3										LD50 Oral Rat 1800 mg/kg <sup>2</sup>					D																														0.00E+00				
Vinyl Chloride					75-01-4										LD50 Oral Rat 500 mg/kg <sup>2</sup>					C																									0.00E+00									
Bromomethane					74-83-9										LD50 Oral Rat 214 mg/kg <sup>2</sup>					C																									0.00E+00									
Chloroethane					79-34-5										LD50 Oral Rat 200 mg/kg <sup>3</sup>					C																									0.00E+00									
Trichlorofluoromethane					75-69-4										LD50 Oral Rat 352 mg/kg <sup>1</sup>					C																									0.00E+00									
1,1-Dichloroethene					75-35-4										LD50 Oral Rat 200 mg/kg <sup>2</sup>					C																									0.00E+00									
Acetone					67-64-1										LC Rat Inhalation 50.10 mg/kg <sup>1</sup>					D																									0.00E+00									
Iodomethane					74-88-4										LD50 Oral Rat 76 mg/kg <sup>2</sup>					C																									0.00E+00									
Carbon Disulfide					75-15-0										LD50 Oral Rat 1200 mg/kg <sup>1</sup>					D																									0.00E+00									
Methylene Chloride					75-09-2										LD50 Oral Rat 985 mg/kg <sup>1</sup>					D																									0.00E+00									
trans-1,2-Dichloroethene					156-60-5										LD50 Rat oral 1235 mg/kg <sup>2</sup>					D																									0.00E+00									
Methyl t-Butyl Ether					1634-04-4										LD50 Rat Oral 4000 mg/kg <sup>2</sup>					D																									0.00E+00									
1,1-Dichloroethane					75-34-3										LD50 Rat Oral 725 mg/kg <sup>2</sup>					D																									0.00E+00									
Vinyl Acetate					108-05-4										LC50 Rat Inhalation 11.4 mg/kg <sup>1</sup>					C																				0.00E+00														
2,2-Dichloropropane					594-20-7										NO TOXICITY DATA AVAILABLE-DATA TAKEN FROM 1,2-DICHLOROPROPANE LD50 Rat Oral 1947 mg/kg <sup>2</sup>					D																									0.00E+00									
cis-1,2-Dichloroethene					156-59-2										LC50 Lepomis machrochirus (bluegill) 135,000 ug/l/96 hr <sup>2</sup>					NOT APPLICABLE																																		
2-Butanone					78-93-3										LD50 Oral Rat 2737 mg/kg <sup>1</sup>					D																									0.00E+00									
Bromochloromethane					74-97-5										LD50 Oral Rat 5000 mg/kg <sup>2</sup>					D																									0.00E+00									
Chloroform					67-66-3										LD50 Rabbit Dermal 20 mg/kg <sup>3</sup>					B															0.00E+00																			
1,1,1-Trichloroethane					71-55-6										LC50 Oncorhynchus mykiss (Rainbow Trout) 42.3 mg/L/96hr <sup>3</sup>					D																									0.00E+00									
Carbon Tetrachloride					56-23-5										LD50 Oral Rat 2350 mg/kg <sup>3</sup>					D																									0.00E+00									
1,1-Dichloropropene					563-58-6										NO TOXICITY DATA AVAILABLE-DATA TAKEN FROM 1,3-DICHLOROPROPENE LD50 Rat oral 127mg/kg <sup>2</sup>					C																				0.00E+00														
Benzene					71-43-2										LC50 Oncorhynchus mykiss (Rainbow Trout) 9.2 mg/L/96hr <sup>3</sup>					C																				0.00E+00														
1,2-Dichloroethane					107-06-2										LD50 Rat oral 670-890 mg/kg <sup>2</sup>					D																									0.00E+00									
Trichloroethene					79-01-6										LC50 Pimephales promelas (fathead minnow) 40.7 mg/l/96 hr <sup>2</sup>					D																									0.00E+00									
1,2-Dichloropropane					78-87-5										LD50 Rat oral 1947 mg/kg <sup>2</sup>					D																									0.00E+00									
Dibromomethane					74-95-3										LD50 Rat oral 108 mg/kg <sup>1</sup>					C																				0.00E+00														
Bromodichloromethane					75-27-4										LD50 Rat Male oral 916 mg/kg <sup>2</sup>					D																									0.00E+00									



2-Chloroethyl Vinyl Ether	110-75-8		LD50 Rat oral 250 mg/kg <sup>2</sup>	C				0.00E+00	
(cis) 1,3-Dichloropropene	10061-01-5		LD50 Rat (CD) oral 127 mg/kg <sup>2</sup>	C				0.00E+00	
Methyl Isobutyl Ketone	108-10-1		LD50 Rat oral 4600 mg/kg <sup>2</sup>	D					0.00E+00
Toluene	108-88-3		LC50 Oncorhynchus mykiss (Rainbow Trout) 6.78 mg/L/96hr <sup>3</sup>	C				0.00E+00	
(trans) 1,3-Dichloropropene	10061-02-6		NO TOXICITY DATA AVAILABLE-DATA TAKEN FROM (cis) 1,3-Dichloropropene LD50 Rat oral 127mg/kg <sup>2</sup>	C				0.00E+00	
1,1,2-Trichloroethane	79-00-5		LD50 Rat oral 837 mg/kg <sup>2</sup>	D					0.00E+00
Tetrachloroethene	127-18-4		LC50 Salmo gairdneri (Oncorhynchus mykiss - rainbow trout) 5 mg/l/96 hr <sup>2</sup>	C				0.00E+00	
1,3-Dichloropropane	142-28-9		LC50 Poecilia reticulata (guppy) 84 ppm/7 days <sup>2</sup>	D					0.00E+00
2-Hexanone	591-78-6		LD50 Rat oral 2590 mg/kg <sup>2</sup>	D					0.00E+00
Dibromochloromethane	124-48-1		LD50 Rat oral 370 mg/kg <sup>2</sup>	C				0.00E+00	
1,2-Dibromoethane	106-93-4		LD50 Rat oral 108 mg/kg <sup>2</sup>	C				0.00E+00	
Chlorobenzene	108-90-7		LC50 Rat Inhalation 13.65 mg/kg <sup>3</sup>	C				0.00E+00	
1,1,1,2-Tetrachloroethane	630-20-6		LD50 Rat oral 670 mg/kg <sup>2</sup>	D					0.00E+00
Ethylbenzene	100-41-4		Oncorhynchus mykiss (Rainbow Trout) 4.2 mg/L/96 hr <sup>3</sup>	C				0.00E+00	
m,p-Xylene	108-38-3, 106-42-3		LC50 Oncorhynchus mykiss (Rainbow Trout) 2.6 mg/L/96hr <sup>3</sup>	C				0.00E+00	
o-Xylene	95-47-6		LC50 Oncorhynchus mykiss (Rainbow Trout) 7.6 mg/L/96hr <sup>3</sup>	C				0.00E+00	
Styrene	100-42-5		LC50 Rat Inhalation 0.18 mg/kg <sup>3</sup>	A					
Bromoform	75-25-2		LD50 Rat 414 mg/kg <sup>2</sup>	C				0.00E+00	
Isopropylbenzene	98-82-8		1400 mg/kg Oral Rat LD50 <sup>2</sup>	D					0.00E+00
Bromobenzene	108-86-1		LD50 Oral Rat 2699 mg/kg	D					0.00E+00
1,1,2,2-Tetrachloroethane	79-34-5		LD50 Rat oral 250 mg/kg <sup>2</sup>	C				0.00E+00	
1,2,3-Trichloropropane	96-18-4		LD50 Rat oral 450 mg/kg <sup>2</sup>	C				0.00E+00	
n-propyl benzene	103-65-1		6040 mg/kg Oral Rat LD50 <sup>2</sup>	NOT APPLICABLE					
2-Chlorotoluene	95-49-8		LD50 Oral Rat 1600 mg/kg <sup>2</sup>	D					0.00E+00
4-Chlorotoluene	106-43-4		NO TOXICITY DATA AVAILABLE TAKEN FROM 2-CHLOROTOLUENE Oral LD50 Rat1600 mg/kg <sup>2</sup>	D					0.00E+00
1,3,5-Trimethylbenzene	108-67-8		LD50 Oral Rat 5000 mg/kg <sup>1</sup>	D					0.00E+00
tert-Butylbenzene	98-06-6		NO TOXICITY DATA AVAILABLE TAKEN FROM SEC-BUTYLBENZENE LD50 Rat oral 2240 mg/kg <sup>2</sup>	D					0.00E+00
1,2,4-Trimethylbenzene	95-63-6		LC50 Pimephales promelas (fathead minnow) 7.720 mg/l/96 hr <sup>3</sup>	C				0.00E+00	
sec-Butylbenzene	135-98-8		2240 mg/kg Oral Rat LD50 <sup>2</sup>	D					0.00E+00
1,3-Dichlorobenzene	541-73-1		LD50 Rat oral 580 mg/kg <sup>2</sup>	D					0.00E+00
p-Isopropyltoluene	99-87-6		LD50 Rat oral 4750 mg/kg <sup>2</sup>	D					0.00E+00
1,4-Dichlorobenzene	106-46-7		LD50 Rat oral 500 mg/kg <sup>2</sup>	C				0.00E+00	
1,2-Dichlorobenzene	95-50-1		LD50 Oral Rat 500 mg/kg <sup>3</sup>	C				0.00E+00	
n-Butylbenzene	104-51-8		LD50 Mouse sc 1994.5 mg/kg <sup>2</sup>	D					0.00E+00
1,2-Dibromo-3-chloropropane	96-12-8		LD50 Rat oral 170 mg/kg <sup>2</sup>	C				0.00E+00	
1,2,4-Trichlorobenzene	120-82-1		LD50 Rat oral 756 mg/kg <sup>2</sup>	D					0.00E+00
Hexachlorobutadiene	87-68-3		LD50 Rat oral 90 mg/kg <sup>2</sup>	C				0.00E+00	
Naphthalene	91-20-3		LD50 Oral Rat 490 mg/kg <sup>3</sup>	C				0.00E+00	
1,2,3-Trichlorobenzene	87-61-6		LD50 Rat oral 756 mg/kg <sup>2</sup>	D					0.00E+00

PAHs by EPA 8270D/SIM									
Naphthalene	91-20-3		LC50 Oncorhynchus gorboscha (pink salmon) 1.4 mg/L/96 hr <sup>2</sup>	C				0.00E+00	
2-methylnaphthalene	91-57-6		1630 mg/kg Oral Rat LD50 <sup>2</sup>	D					0.00E+00
1-methylnaphthalene	90-12-0		1840 mg/kg Oral Rate LD50 <sup>2</sup>	D					0.00E+00
Acenaphthylene	208-96-8		NO DATA AVAILABLE: Taken as equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Acenaphthene	83-32-9		LC50 Oncorhynchus mykiss (Rainbow trout) 1570 ug/L 96hr <sup>3</sup>	C				0.00E+00	
Fluorene	86-73-7		LC50 Oncorhynchus mykiss (Rainbow trout) 820 ug/L 96hr <sup>3</sup>	B			0.00E+00		
Phenanthrene	85-01-8		LC50 Oncorhynchus mykiss (Rainbow trout, larvae) 40 ug/L 27 days <sup>2</sup>	A					
Anthracene	120-12-7		LC50 Lepomis macrochirus (bluegill) 1.27 ug/L 96hr <sup>2</sup>	X	0.00E+00				
Fluoranthene	206-44-0		LC50 Lepomis macrochirus (bluegill) 3980 ug/L 96hr <sup>2</sup>	C				0.00E+00	
Pyrene	129-00-0		LC50 Oncorhynchus mykiss (Rainbow trout) 2000 ug/L 96hr <sup>3</sup>	C				0.00E+00	
Benzo(a)anthracene	56-55-3		equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Chrysene	218-01-9		LC50 Neanthes arenaceodentata (fish) > 1 mg/L96 hr	C				0.00E+00	
Benzofluoranthenes (total)	(205-99-2) (207-08-9)		NO DATA AVAILABLE: Taken as equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Benzo(a)pyrene	50-32-8		LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Indeno(1,2,3-cd)pyrene	193-39-5		NO DATA AVAILABLE: Taken as equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Dibenz(a,h)anthracene	53-70-3		equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Benzo(g,h,i)perylene	198-55-0		NO DATA AVAILABLE: Taken as equivalent to Benzo(a)pyrene, LC50 Poeciliopsis lucida (Clearfin livebearer) 1.2-3.7 mg/l 24-hr <sup>2</sup>	C				0.00E+00	
Petroleum Hydrocarbons									
Mineral Spirits (Stoddard Solvent)	8052-41-3		LD50 Oral Rat 5000 mg/kg <sup>1</sup>	D					0.00E+00
Diesel Range	68334-30-5		TAKEN AS DIESEL: 7500 mg/kg Oral Rat LD50 <sup>1</sup>	Not Applicable					
Heavy Hydrocarbon Range (Lube Oil Range)	64742-65-0		TAKEN AS Lube Oil Range: > 5000 mg/kg Oral Rat LD50 <sup>1</sup>	Not Applicable					
GLYCOLS									
Ethylene Glycol MHE	107-21-1		LD50 Oral Rat 4700 mg/kg <sup>2</sup>	D					0.00E+00
Diethylene Glycol MBE	111-46-6		LD50 Rabbit dermal 11,890 mg/kg <sup>2</sup>	D					0.00E+00
Propylene Glycol	57-55-6		LD50 Rat oral 22,000 mg/kg <sup>2</sup>	NOT APPLICABLE					
Total (SUM)					0.0000000	0.0021000	0.0020200	0.0012100	0.0000000

Enter Category Mass % Here	$\sum X\% / 1$		$\sum A\% / 10$		$\sum B\% / 100$		$\sum C\% / 1000$		$\sum D\% / 10000$		EC	Designation
	0.00E+00		2.10E-03		2.02E-03		1.21E-03		0.00E+00			
	0.00E+00		2.10E-04		2.02E-05		1.21E-06		0.00E+00			
											0.0002314	Non-Dangerous Waste

Sources      1      RTECS: Registry of Toxic Effects of Chemical Substances  
                  2      HSDB: Hazardous Substances Data Bank, National Library of Medicine  
                  3      ECOTOX Database: United States Environmental Protection Agency

\*Concentration assumed from highest possible value from all samples



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03/31/2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

P.O.#: Auth #20-02-26-036  
Project: Monopole Spoils  
Client ID: Monopole-001  
Sample Matrix: Soil  
Date Sampled: 02/26/2020  
Date Received: 02/26/2020  
Spectra Project: 2020020766  
Spectra Number: 1

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Diesel	<10	mg/Kg	NWTPH-D	1,2,3-Trichlorobenzene	<0.08	mg/Kg	SW846 8260C
Oil	<50	mg/Kg	NWTPH-D	1,2,3-Trichloropropane	<0.08	mg/Kg	SW846 8260C
Gasoline	<5	mg/Kg	NWTPH-G	1,2,4-Trichlorobenzene	<0.08	mg/Kg	SW846 8260C
Total Arsenic	< 2.5	mg/Kg	SW846 6010D	1,2-Dibromo3Chloropropane	<0.8	mg/Kg	SW846 8260C
Total Barium	17.4	mg/Kg	SW846 6010D	1,2-Dichlorobenzene	<0.08	mg/Kg	SW846 8260C
Total Cadmium	< 0.3	mg/Kg	SW846 6010D	1,2-Dichloroethane	<0.08	mg/Kg	SW846 8260C
Total Chromium	10.6	mg/Kg	SW846 6010D	1,2-Dichloropropane	<0.08	mg/Kg	SW846 8260C
Total Copper	15.4	mg/Kg	SW846 6010D	1,3-Dichlorobenzene	<0.08	mg/Kg	SW846 8260C
Total Lead	< 2.5	mg/Kg	SW846 6010D	1,3-Dichloropropane	<0.08	mg/Kg	SW846 8260C
Total Nickel	4.8	mg/Kg	SW846 6010D	1,4-Dichlorobenzene	<0.08	mg/Kg	SW846 8260C
Total Selenium	< 2.5	mg/Kg	SW846 6010D	2,2-Dichloropropane	<0.08	mg/Kg	SW846 8260C
Total Silver	< 0.7	mg/Kg	SW846 6010D	2-Chlorotoluene	<0.08	mg/Kg	SW846 8260C
Total Zinc	19.1	mg/Kg	SW846 6010D	4-Chlorotoluene	<0.08	mg/Kg	SW846 8260C
Total Mercury	< 0.05	mg/Kg	SW846 7471B	Benzene	<0.08	mg/Kg	SW846 8260C
PCB	<0.01	mg/Kg	SW846 8082A	Bromochloromethane	<0.08	mg/Kg	SW846 8260C
1,1,1,2-Tetrachloroethane	<0.08	mg/Kg	SW846 8260C	Bromodichloromethane	<0.08	mg/Kg	SW846 8260C
1,1,1-Trichloroethane	<0.08	mg/Kg	SW846 8260C	Carbon Tetrachloride	<0.08	mg/Kg	SW846 8260C
1,1,2,2-Tetrachloroethane	<0.08	mg/Kg	SW846 8260C	Chlorobenzene	<0.08	mg/Kg	SW846 8260C
1,1,2-Trichloroethane	<0.08	mg/Kg	SW846 8260C	Chlorodibromomethane	<0.08	mg/Kg	SW846 8260C
1,1-Dichloroethane	<0.08	mg/Kg	SW846 8260C	Chloroethane	<0.08	mg/Kg	SW846 8260C
1,1-Dichloroethene	<0.08	mg/Kg	SW846 8260C	Chloroform	<0.08	mg/Kg	SW846 8260C
1,1-Dichloropropene	<0.08	mg/Kg	SW846 8260C	Chloromethane	<0.08	mg/Kg	SW846 8260C

Surrogate	Recovery	Method
Decachlorobiphenyl	116	SW846 8082A
p-Terphenyl	86	NWTPH-D
Toluene-d8	91	NWTPH-G
4-Bromofluorobenzene	106	NWTPH-G

Surrogate	Recovery	Method
Toluene-d8	91	SW846 8260C
Dibromofluoromethane	108	SW846 8260C
4-Bromofluorobenzene	106	SW846 8260C
1,2-Dichloroethane-d4	110	SW846 8260C

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Authorized by: Kristin Hintz



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03/31/2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

P.O.#: Auth #20-02-26-036  
Project: Monopole Spoils  
Client ID: Monopole-001  
Sample Matrix: Soil  
Date Sampled: 02/26/2020  
Date Received: 02/26/2020  
Spectra Project: 2020020766  
Spectra Number: 1

Analyte	Result	Units	Method
Dichlorodifluoromethane	<0.08	mg/Kg	SW846 8260C
Ethylbenzene	<0.08	mg/Kg	SW846 8260C
Hexachlorobutadiene	<0.08	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	<0.08	mg/Kg	SW846 8260C
Methylene chloride	<0.4	mg/Kg	SW846 8260C
Tetrachloroethene	<0.08	mg/Kg	SW846 8260C
Toluene	<0.08	mg/Kg	SW846 8260C
Total Xylenes	<0.15	mg/Kg	SW846 8260C
Trichloroethene	<0.08	mg/Kg	SW846 8260C
Trichlorofluoromethane	<0.08	mg/Kg	SW846 8260C
Vinyl chloride	<0.08	mg/Kg	SW846 8260C
cis-1,2-Dichloroethene	<0.08	mg/Kg	SW846 8260C
cis-1,3-Dichloropropene	<0.08	mg/Kg	SW846 8260C
trans-1,2-Dichloroethene	<0.08	mg/Kg	SW846 8260C
trans-1,3-Dichloropropene	<0.08	mg/Kg	SW846 8260C
pH	6.70	pH	SW846 9045D

Analyte	Result	Units	Method
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Surrogate	Recovery	Method
Decachlorobiphenyl	116	SW846 8082A
p-Terphenyl	86	NWTPH-D
Toluene-d8	91	NWTPH-G
4-Bromofluorobenzene	106	NWTPH-G

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz

Surrogate	Recovery	Method
Toluene-d8	91	SW846 8260C
Dibromofluoromethane	108	SW846 8260C
4-Bromofluorobenzene	106	SW846 8260C
1,2-Dichloroethane-d4	110	SW846 8260C





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03/31/2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

P.O.#: Auth #20-02-26-036  
Project: Monopole Spoils  
Client ID: Monopole-002  
Sample Matrix: Soil  
Date Sampled: 02/26/2020  
Date Received: 02/26/2020  
Spectra Project: 2020020766  
Spectra Number: 2

Analyte	Result	Units	Method	Analyte	Result	Units	Method
Diesel	<10	mg/Kg	NWTPH-D	1,2,3-Trichlorobenzene	<0.07	mg/Kg	SW846 8260C
Oil	<50	mg/Kg	NWTPH-D	1,2,3-Trichloropropane	<0.07	mg/Kg	SW846 8260C
Gasoline	<5	mg/Kg	NWTPH-G	1,2,4-Trichlorobenzene	<0.07	mg/Kg	SW846 8260C
Total Arsenic	< 2.5	mg/Kg	SW846 6010D	1,2-Dibromo3Chloropropane	<0.7	mg/Kg	SW846 8260C
Total Barium	15.1	mg/Kg	SW846 6010D	1,2-Dichlorobenzene	<0.07	mg/Kg	SW846 8260C
Total Cadmium	< 0.3	mg/Kg	SW846 6010D	1,2-Dichloroethane	<0.07	mg/Kg	SW846 8260C
Total Chromium	12.1	mg/Kg	SW846 6010D	1,2-Dichloropropane	<0.07	mg/Kg	SW846 8260C
Total Copper	15.2	mg/Kg	SW846 6010D	1,3-Dichlorobenzene	<0.07	mg/Kg	SW846 8260C
Total Lead	< 2.5	mg/Kg	SW846 6010D	1,3-Dichloropropane	<0.07	mg/Kg	SW846 8260C
Total Nickel	5.6	mg/Kg	SW846 6010D	1,4-Dichlorobenzene	<0.07	mg/Kg	SW846 8260C
Total Selenium	< 2.5	mg/Kg	SW846 6010D	2,2-Dichloropropane	<0.07	mg/Kg	SW846 8260C
Total Silver	< 0.7	mg/Kg	SW846 6010D	2-Chlorotoluene	<0.07	mg/Kg	SW846 8260C
Total Zinc	20.2	mg/Kg	SW846 6010D	4-Chlorotoluene	<0.07	mg/Kg	SW846 8260C
Total Mercury	< 0.05	mg/Kg	SW846 7471B	Benzene	<0.07	mg/Kg	SW846 8260C
PCB	<0.01	mg/Kg	SW846 8082A	Bromochloromethane	<0.07	mg/Kg	SW846 8260C
1,1,1,2-Tetrachloroethane	<0.07	mg/Kg	SW846 8260C	Bromodichloromethane	<0.07	mg/Kg	SW846 8260C
1,1,1-Trichloroethane	<0.07	mg/Kg	SW846 8260C	Carbon Tetrachloride	<0.07	mg/Kg	SW846 8260C
1,1,2,2-Tetrachloroethane	<0.07	mg/Kg	SW846 8260C	Chlorobenzene	<0.07	mg/Kg	SW846 8260C
1,1,2-Trichloroethane	<0.07	mg/Kg	SW846 8260C	Chlorodibromomethane	<0.07	mg/Kg	SW846 8260C
1,1-Dichloroethane	<0.07	mg/Kg	SW846 8260C	Chloroethane	<0.07	mg/Kg	SW846 8260C
1,1-Dichloroethene	<0.07	mg/Kg	SW846 8260C	Chloroform	<0.07	mg/Kg	SW846 8260C
1,1-Dichloropropene	<0.07	mg/Kg	SW846 8260C	Chloromethane	<0.07	mg/Kg	SW846 8260C

Surrogate	Recovery	Method
Decachlorobiphenyl	87	SW846 8082A
p-Terphenyl	86	NWTPH-D
Toluene-d8	91	NWTPH-G
4-Bromofluorobenzene	105	NWTPH-G

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Surrogate	Recovery	Method
Toluene-d8	91	SW846 8260C
Dibromofluoromethane	106	SW846 8260C
4-Bromofluorobenzene	105	SW846 8260C
1,2-Dichloroethane-d4	108	SW846 8260C



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03/31/2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

P.O.#: Auth #20-02-26-036  
Project: Monopole Spoils  
Client ID: Monopole-002  
Sample Matrix: Soil  
Date Sampled: 02/26/2020  
Date Received: 02/26/2020  
Spectra Project: 2020020766  
Spectra Number: 2

Analyte	Result	Units	Method
Dichlorodifluoromethane	<0.07	mg/Kg	SW846 8260C
Ethylbenzene	<0.07	mg/Kg	SW846 8260C
Hexachlorobutadiene	<0.07	mg/Kg	SW846 8260C
Methyl-tert-Butyl Ether	<0.07	mg/Kg	SW846 8260C
Methylene chloride	<0.45	mg/Kg	SW846 8260C
Tetrachloroethene	<0.07	mg/Kg	SW846 8260C
Toluene	<0.07	mg/Kg	SW846 8260C
Total Xylenes	<0.14	mg/Kg	SW846 8260C
Trichloroethene	<0.07	mg/Kg	SW846 8260C
Trichlorofluoromethane	<0.07	mg/Kg	SW846 8260C
Vinyl chloride	<0.07	mg/Kg	SW846 8260C
cis-1,2-Dichloroethene	<0.07	mg/Kg	SW846 8260C
cis-1,3-Dichloropropene	<0.07	mg/Kg	SW846 8260C
trans-1,2-Dichloroethene	<0.07	mg/Kg	SW846 8260C
trans-1,3-Dichloropropene	<0.07	mg/Kg	SW846 8260C
pH	6.50	pH	SW846 9045D

Analyte	Result	Units	Method
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Surrogate	Recovery	Method
Decachlorobiphenyl	87	SW846 8082A
p-Terphenyl	86	NWTPH-D
Toluene-d8	91	NWTPH-G
4-Bromofluorobenzene	105	NWTPH-G

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz

Surrogate	Recovery	Method
Toluene-d8	91	SW846 8260C
Dibromofluoromethane	106	SW846 8260C
4-Bromofluorobenzene	105	SW846 8260C
1,2-Dichloroethane-d4	108	SW846 8260C

April 1, 2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

Method: NWTPH-Dx  
Sample Matrix: Soil  
Spectra Project: 2020020766  
Applies to Spectra #: 1-2  
Units: mg/Kg

**HYDROCARBON ANALYSIS  
QUALITY CONTROL RESULTS****BLANK SPIKE (LCS)**

Date Extracted:	03/03/20	Date Analyzed:	03/03/20
<u>Compound</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>Spike Amount Found</u> <u>Percent Recovery</u>
Diesel	<10.0	125	92.3      73.8

**METHOD BLANK**

Date Extracted:	03/03/20	Date Analyzed:	03/03/20
Diesel	<10.0	mg/Kg	
Heavy Oil	<50.0	mg/Kg	
Surrogate Recovery:	p-terphenyl	93%	

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz



April 1, 2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: James Bozic

Sample Matrix: Product  
EPA Method: 8260C / NWTPH-Gx  
Spectra Project: 2020020766  
Date Analyzed: 3/2/2020  
Units: mg/Kg  
Applies to Spectra #'s: #1-2

**GCMS VOLATILE ORGANIC ANALYSIS**  
**Laboratory Control Sample (LCS) Results**

COMPOUND	SPIKE AMOUNT	SPIKE RESULT	LCS %REC
1,1-Dichloroethene	0.50	0.471	94
Benzene	0.50	0.536	107
Trichloroethene	0.50	0.520	104
Toluene	0.50	0.490	98
Chlorobenzene	0.50	0.521	104
Gasoline	12.5	11.174	89.4

Surrogate Recoveries (%)	LCS
Dibromofluoromethane	94
1,2-Dichloroethane-d4	92
Toluene-d8	99
4-Bromofluorobenzene	94



Authorized by: Kristin Hintz

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3/3/2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411

Units: mg/Kg  
Spectra Project: 202030766  
Applies to Spectra #'s 1-2  
Analyst: SCJ

## QUALITY CONTROL RESULTS ICP Metals SW846 6010D - Soil/Solid

### Method Blank

Date Digested: 3/3/2020

Date Analyzed: 3/3/2020

Element	Blank Result
Arsenic	< 2.5
Barium	< 0.2
Cadmium	< 0.3
Chromium	< 0.7
Copper	< 0.6
Lead	< 2.5
Nickel	< 1.5
Selenium	< 2.5
Silver	< 0.7
Zinc	< 0.6

### Laboratory Control Sample (LCS)

Date Digested: 3/3/2020

Date Analyzed: 3/3/2020

Element	Spike Addition	LCS Conc.	LCS %Rec
Arsenic	200.0	191.1	95.6
Barium	200.0	201.5	100.8
Cadmium	200.0	197.6	98.8
Chromium	200.0	202.6	101.3
Copper	200.0	194.9	97.5
Lead	200.0	199.6	99.8
Nickel	200.0	200.3	100.2
Selenium	200.0	188.5	94.3
Silver	200.0	209.0	104.5
Zinc	200.0	189.4	94.7

LCS Recovery limits 80-120%

### Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 3/3/2020

Date Analyzed: 3/3/2020

Sample Spiked: 2020030818-2

Element	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc.	MSD %Rec	RPD
Arsenic	0.0	200.0	180.0	90.0	187.2	93.6	3.9
Barium	76.6	200.0	277.6	100.5	273.8	98.6	1.9
Cadmium	0.0	200.0	195.0	97.5	195.7	97.9	0.4
Chromium	38.6	200.0	217.6	89.5	223.5	92.5	3.2
Copper	53.9	200.0	251.0	98.6	251.5	98.8	0.3
Lead	33.8	200.0	216.9	91.6	218.7	92.5	1.0
Nickel	44.5	200.0	232.1	93.8	228.7	92.1	1.8
Selenium	0.0	200.0	180.4	90.2	182.7	91.4	1.3
Silver	0.0	200.0	205.0	102.5	202.6	101.3	1.2
Zinc	123.9	200.0	314.4	95.3	313.7	94.9	0.4

Recovery Limits 75-125%

RPD Limit 20

Comment

Spectra Laboratories

  
Authorized by: Kristin Hintz

March 3, 2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411

Units: mg/Kg  
Spectra Project: 2020030766  
Applies to Spectra #'s: 1-2

**QUALITY CONTROL RESULTS****Mercury by Cold Vapor - SW846 7471B - Soil/Solid****Laboratory Reagent Blank (LRB)**

Date Digested: 3/3/2020 Date Analyzed: 3/3/2020

	CAS #	Result
Mercury	7439-97-6	< 0.05

**Laboratory Control Spike (LCS)**

Date Digested: 3/3/2020 Date Analyzed: 3/3/2020

	Spike Added	LCS Conc.	LCS %Rec
Mercury	5.0	5.17	103.4

LCS Recovery limits 80-120%

**Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

Date Digested: 3/3/2020 Date Analyzed: 3/3/2020

Sample Spiked: 2020030032-1

	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc	MSD %Rec	RPD
Mercury	0.13	5.0	5.21	101.6	5.15	100.4	1.2

Recovery Limits 80-120%

RPD Limit 20

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz

April 1, 2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: Jeromy Adams

Method: EPA Method 8082A  
Sample Matrix: Solid  
Units: mg/Kg  
Spectra Project: 2020020766  
Applies to Spectra # 1-2

**PCB ANALYSIS**  
**QUALITY CONTROL RESULTS**

---

**BLANK SPIKE (LCS)**

Date Extracted:	3/4/2020	Date Analyzed:	3/9/2020
	Sample	Spike	Spike
	Result	Amount	Amount
<u>Compound</u>		<u>Added</u>	<u>Found</u>
			<u>Percent</u>
			<u>Recovery</u>
AR1260	<0.01	0.025	0.0262 105%

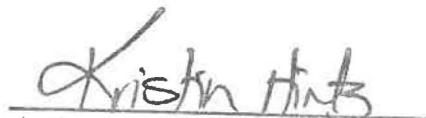
---

**METHOD BLANK**

Date Extracted:	3/4/2020	Date Analyzed:	3/9/2020
PCB's	<0.01		
Surrogate Recovery:			
Decachlorobiphenyl	84%		

---

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz



# SPECTRA Laboratories

...Where experience matters

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April 1, 2020

WestRock Tacoma  
801 Portland Ave  
Tacoma, WA 98421  
Attn: Paul Sponenburg

Sample matrix: Water

Spectra Project:  
Spectra #  
Applies to Samples

Date Analyzed: 3/20/2020  
Dilution: 1  
< = less than  
2020030412  
Method Blank  
#1-4

## VOLATILE ORGANIC ANALYSIS

## METHOD 624/8260

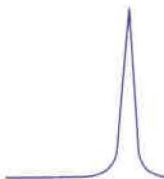
Compound	ug/L	Compound	ug/L
Acetone	< 10	1,2-Dichloropropane	< 1
Acrolein	< 10	1,3-Dichloropropane	< 1
Acrylonitrile	< 10	cis-1,3-Dichloropropene	< 1
Benzene	< 1	trans-1,3-Dichloropropene	< 1
Bromobenzene	< 1	2,2-Dichloropropane	< 1
Bromochloromethane	< 1	1,1-Dichloropropene	< 1
Bromodichloromethane	< 1	Ethylbenzene	< 1
Bromoform	< 1	2-Hexanone (MBK)	< 10
Bromomethane	< 1	Hexachlorobutadiene	< 1
2-Butanone (MEK)	< 10	Iodomethane	< 10
n-Butylbenzene	< 1	Isopropylbenzene	< 1
sec-Butylbenzene	< 1	p-Isopropyltoluene	< 1
tert-Butylbenzene	< 1	Methylene chloride	< 5
Carbon Disulfide	< 10	4-Methyl-2-pentanone (MIBK)	< 10
Carbon tetrachloride	< 1	MTBE	< 1
Chlorobenzene	< 1	Naphthalene	< 1
Chlorodibromomethane	< 1	n-Propylbenzene	< 1
Chloroethane	< 1	Styrene	< 1
2-Chloroethyl Vinyl ether	< 10	1,1,1,2-Tetrachloroethane	< 1
Chloroform	< 1	1,1,2,2-Tetrachloroethane	< 1
Chloromethane	< 1	Tetrachloroethene	< 1
2-Chlorotoluene	< 1	Toluene	< 1
4-Chlorotoluene	< 1	Total Xylenes	< 2
1,2-Dibromo-3-Chloropropane (DBCP)	< 10	1,2,3-Trichlorobenzene	< 1
1,2-Dibromoethane (EDB)	< 1	1,2,4-Trichlorobenzene	< 1
Dibromomethane	< 1	1,1,1-Trichloroethane	< 1
1,2-Dichlorobenzene	< 1	1,1,2-Trichloroethane	< 1
1,3-Dichlorobenzene	< 1	Trichloroethene	< 1
1,4-Dichlorobenzene	< 1	Trichlorofluoromethane	< 1
Dichlorodifluoromethane	< 1	1,2,3-Trichloropropane	< 1
1,1-Dichloroethane	< 1	1,2,4-Trimethylbenzene	< 1
1,2-Dichloroethane	< 1	1,3,5-Trimethylbenzene	< 1
1,1-Dichloroethene	< 1	Vinyl Acetate	< 10
cis-1,2-Dichloroethene	< 1	Vinyl chloride	< 1
trans-1,2-Dichloroethene	< 1		

## SURROGATE RECOVERIES

Dibromofluoromethane	123	%
1,2-Dichloroethane-d4	129	%
Toluene-d8	95	%
4-Bromofluorobenzene	99	%



Authorized by: Kristin Hintz



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April 1, 2020

Tacoma Public Utilities  
PO Box 11007  
Tacoma, WA 98411  
Attn: Doug Boettner

Sample Matrix: Water  
Spectra Project # 2020020766  
Applies to Spectra # 1-2

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## QUALITY CONTROL RESULTS CONVENTIONALS

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<u>Analyte</u>	<u>Method</u>	<u>Date</u>	<u>Analyst</u>	<u>Method</u> <u>Blank</u> <u>Result</u>	<u>ICV</u> <u>%</u> <u>Rec.</u>	<u>Control</u> <u>Limits</u>	<u>Batch</u> <u>Duplicate</u> <u>RPD</u>	<u>Control</u> <u>Limits</u>
pH	SM 4500-H <sup>+</sup> B	2/28/20	HDE	N/A	101.6	± 0.2 pH	0.66	≤20

SPECTRA LABORATORIES

  
Authorized by: Kristin Hintz



## SPECIAL INSTRUCTIONS/COMMENTS:

RAL-00111-04

## CHAIN of CUSTODY

SPECTRA PROJECT #

W200207u

## SPECTRA Laboratories

2221 Ross Way, Tacoma, WA 98421

(253) 272-4850 Fax (253) 572-9838

www.spectra-lab.com info@spectra-lab.com

Return Samples Y N Page 1 of 1

STANDARD ☒ RUSH ☐

CLIENT: Tacoma Power (TPU)

ADDRESS: 3628 S 35th Street, Tacoma WA 98409

ADDRESS

CHANGE ☐

PROJECT: Monopole Spoils

CONTACT: James Bozic

SAMPLED BY: James Bozic

PHONE: 253-502-8767 FAX:

e-MAIL: jbozic@cityoftacoma.org

Prefer FAX ☐  
or e-MAIL ☒

PURCHASE ORDER #: 20-02-26-036

NUMBER OF CONTAINERS

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	MATRIX		HYDROCARBONS										ORGANICS				METALS				OTHER						
					NWTPH-HCID	BTEX	BTEX/NWTPH-G	NWTPH-G	NWTPH-Dx	1664 SGT-HEM (TPH)	1664 HEM (FOG)	8260/824 VOA	8260 CHLOR SOLVENTS	8270/625 SEMI VOA	8270 PAH/PNA	8082/608 PCB	TOTAL METALS RCRA 8	TOTAL METALS (SPECIFY)	TCLP METALS RCRA 8	TCLP METALS (SPECIFY)	PH 9040/9045	TX/TOX 9076	TURBIDITY	FLASH POINT	BOD	SOLIDS (SPECIFY)	Total Ni, Cu, Zn		
1 Monopole - 001	02/26/20	1000	Soil	1			X	X					X		X		X	X			X								
2 Monopole - 002	02/26/20	1000	Soil	1			X	X					X		X		X	X			X								
3																													
4																													
5																													
6																													
7																													
8																													
9																													
0																													

## LAB USE ONLY

Shipped Via:

US Mail UPS Fed Ex Courier Client

Shipping Container:

Cooler Box Envelope None

Tracking #

Custody Seals: Y N Intact: Y N

Cooler Temp. Sample Temp.

SIGNATURE

PRINTED NAME

COMPANY

DATE

TIME

RELINQUISHED BY

James Bozic

TPU-Power

02/26/20

1607.

RECEIVED BY

SB

S. Beck

Spectra

2/26/20

1608

RELINQUISHED BY

RECEIVED BY

Payment Terms: Net 30 days. Past due accounts subject to 1 1/2 % per month interest. Customer agrees to pay all costs of collection including reasonable attorney's fees and all other costs of collection regardless of whether suit is filed in Pierce Co., WA venue. Spectra Analytical, LLC



# APPENDIX F

## SAMPLE DOCUMENTS

Payment Bond  
Performance Bond  
Contract  
General Release



## PAYMENT BOND TO THE CITY OF TACOMA

Resolution No.  
Bond No.

That we, the undersigned,

as principal, and \_\_\_\_\_  
as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of,  
\$ \_\_\_\_\_, for the payment whereof Contractor and Surety bind themselves,  
their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No. \_\_\_\_\_

Specification Title: \_\_\_\_\_

Contract No. \_\_\_\_\_

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with RCW 39.08, 39.12, and 60.28, including all workers, laborers, mechanics, subcontractors, and materialmen, and all person who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work, and all taxes incurred on said Contract under Titles 50 and 51 RCW and all taxes imposed on the Principal under Title 82 RCW; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract shall in any way affect its obligation on this bond, and waives notice of any changes, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

No suit or action shall be commenced hereunder by any claimant unless claimant shall have given the written notices to the City, and where required, the Contractor, in accordance with RCW 39.08.030.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of claims which may be properly filed in accordance with RCW 39.08 whether or not suit is commenced under and against this bond.

If any claimant shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgment and attorney fees as provided by RCW 39.08.030, shall also pay such costs and attorney fees as may be incurred by the City as a result of such suit. Venue for any action arising out of or in connection with this bond shall be in Pierce County, WA.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

Resolution No.  
Bond No.  
Specification No.  
Contract No.

One original bond shall be executed, and be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: Enter Vendor Legal Name

\_\_\_\_\_

By: \_\_\_\_\_

Surety:

\_\_\_\_\_

By: \_\_\_\_\_

Agent's Name: \_\_\_\_\_

Agent's Address: \_\_\_\_\_



## PERFORMANCE BOND TO THE CITY OF TACOMA

Resolution No.  
Bond No.

That we, the undersigned,

as principal, and

as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of

\$ \_\_\_\_\_, for the payment whereof Contractor and Surety bind themselves,

their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No. \_\_\_\_\_

Specification Title: \_\_\_\_\_

Contract No. \_\_\_\_\_

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory performance bond shall become null and void, if and when the principal, its heirs, executors, administrators, successors, or assigns shall well and faithfully perform all of the Principal's obligations under the Contract and fulfill all terms and conditions of all duly authorized modifications, additions and changes to said Contract that may hereafter be made, at the time and in the manner therein specified; and if such performance obligations have not been fulfilled, this bond shall remain in force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increase.

If the City shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgement, shall pay all costs and attorney's fees incurred by the City in enforcement of its rights hereunder. Venue for any action arising out of in connection with this bond shall be in Pierce County, Washington.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

One original bond shall be executed, and signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: Enter Vendor Legal Name

\_\_\_\_\_

By: \_\_\_\_\_

Surety:

\_\_\_\_\_

By: \_\_\_\_\_

Agent's Name: \_\_\_\_\_

Agent's Address: \_\_\_\_\_

# CONTRACT

Resolution No.  
Contract No.

This Contract is made and entered into effective this \_\_\_\_\_ day of ,20\_\_\_\_, ("Effective Date") by and between the City of Tacoma, a Municipal Corporation of the State of Washington ("City"), and legal name of Supplier including type of business entity ("Contractor").

That in consideration of the mutual promises and obligations hereinafter set forth the Parties hereto agree as follows:

- I. Contractor shall fully execute and diligently and completely perform all work and provide all services and deliverables described herein and in the items listed below each of which are fully incorporated herein and which collectively are referred to as "Contract Documents":

- 
1. Specification No. Enter Spec Number and Enter Spec Title together with all authorized addenda.
  2. Contractor's submittal (or specifically described portions thereof) dated Enter Submittal Date submitted in response to Specification No. Enter Spec Number and Enter Spec Title.
  3. Describe with specific detail and list separately any other documents that will make up the contract (fee schedule, work schedule, authorized personnel, etc.) or any other additional items mutually intended to be binding upon the parties.
- 

Delete this highlighted sentence, paragraph II and sub-bullets #1 and #2 if there are no additional attachments to the contract (attachments would be things other than a specific, contract, or bonds).

- II. In the event of a conflict or inconsistency between the terms and conditions contained in this document entitled Contract and any terms and conditions contained the above referenced Contract Documents the following order of precedence applies with the first listed item being the most controlling and the last listed item the least controlling:
1. Contract
  2. List remaining Contract Documents in applicable controlling order.
- III. The Contract terminates on xxxxx. {May remove if not applicable}
- IV. The total price to be paid by City for Contracts full and complete performance hereunder may not exceed:  
\$ \_\_\_\_\_, plus any applicable taxes.
- V. Contractor agrees to accept as full payment hereunder the amounts specified herein and in Contract Documents, and the City agrees to make payments at the times and in the manner and upon the terms and conditions specified. Except as may be otherwise provided herein or in Contract Documents Contractor shall provide and bear the expense of all equipment, work and labor of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work and providing the services and deliverables required by this Contract.
- VI. The City's preferred method of payment is by ePayables (Payment Plus), followed by credit card (aka procurement card), then Electronic Funds Transfer (EFT) by Automated Clearing House (ACH), then check or other cash equivalent. CONTRACTOR may be required to have the capability of accepting the City's ePayables or credit card methods of payment. The City of Tacoma will not accept price changes or pay additional fees when ePayables (Payment Plus) or credit card is used. The City, in its sole discretion, will determine the method of payment for this Contract.
- VII. Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- VIII. Contractor acknowledges, and by signing this Contract agrees, that the Indemnification provisions set forth in the controlling Contract Documents, including the Industrial Insurance immunity waiver (if applicable), are totally and fully part of this Contract and, within the context of the competitive bidding laws, have been mutually negotiated by the Parties hereto.

- IX. Contractor and for its heirs, executors, administrators, successors, and assigns, does hereby agree to the full performance of all the requirements contained herein and in Contract Documents.
- X. It is further provided that no liability shall attach to City by reason of entering into this Contract, except as expressly provided herein.

IN WITNESS WHEREOF, the Parties hereto have accepted and executed, as of the Effective Date stated above, which shall be Effective Date for bonding purposes as applicable.

CITY OF TACOMA:

CONTRACTOR:

By:

By:

---

**(City of Tacoma use only - blank lines are intentional)**

---

Director of Finance: \_\_\_\_\_

City Attorney (approved as to form): \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approved By: \_\_\_\_\_

## GENERAL RELEASE TO THE CITY OF TACOMA

The undersigned, named as the contractor for \_\_\_\_\_  
Project / Spec. #  
between \_\_\_\_\_ and the City of Tacoma,  
(Themselves or Itself)  
dated \_\_\_\_\_, 20\_\_\_\_, hereby releases the City of Tacoma, its  
departmental officers and agents from any and all claim or claims whatsoever in any manner  
whatsoever at any time whatsoever arising out of and/or in connection with and/or relating  
to said contract, excepting only the equity of the undersigned in the amount now retained by  
the City of Tacoma under said contract, to-wit the sum of \$ \_\_\_\_\_.

Signed at Tacoma, Washington this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
Contractor

By \_\_\_\_\_

Title \_\_\_\_\_