APPENDIX A
GEOTECHNICAL ENGINEERING SERVICES FINAL REPORT

APPENDIX B
PERMITS

APPENDIX C
PREVAILING HOURLY MINIMUM WAGE RATES
APPENDIX A
GEOTECHNICAL ENGINEERING SERVICES FINAL REPORT
Geotechnical Engineering Services
Revised Final Report

Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

for
BergerABAM

February 21, 2018
Geotechnical Engineering Services
Revised Final Report

Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

for
BergerABAM

February 21, 2018
Geotechnical Engineering Services
Revised Final Report
Interstate 5 Port of Tacoma Road Interchange
Fife, Washington
File No. 0876-015-03
February 21, 2018

Prepared for:
BergerABAM
33301 Ninth Avenue South, Suite 300
Federal Way, Washington 98003
Attention: Chris Walcott

Prepared by:
GeoEngineers, Inc.
1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Christopher R. Newton, PE
Staff Geotechnical Engineer

Lyle J. Stone, PE
Associate Geotechnical Engineer

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.
Table of Contents

1.0 INTRODUCTION AND PROJECT UNDERSTANDING .............................................................. 1

2.0 PURPOSE AND SCOPE OF SERVICES ................................................................................... 2

2.1. Geotechnical Evaluation and Report (Site Exploration and Laboratory Testing) .................. 2

3.0 SITE CONDITIONS .................................................................................................................. 3

3.1. Geologic Setting .................................................................................................................. 3

3.2. Surface Conditions ............................................................................................................. 3

3.3. Subsurface Conditions ....................................................................................................... 3

3.3.1. Subsurface Explorations ............................................................................................... 3

3.3.2. Soils .............................................................................................................................. 4

3.3.3. Groundwater ............................................................................................................... 4

4.0 CONCLUSIONS AND RECOMMENDATIONS ........................................................................ 5

4.1. Design Standards .............................................................................................................. 5

4.2. Seismic Design Recommendations .................................................................................... 5

4.2.1. AASHTO Seismic Design Parameters ......................................................................... 5

4.2.2. Liquefaction ............................................................................................................... 5

4.3. I-5 On- and Off-ramp Embankments .................................................................................. 6

4.3.1. General Recommendations .......................................................................................... 6

4.3.1. Embankment Fill Materials ......................................................................................... 7

4.3.2. Ground Improvement .................................................................................................... 7

4.3.3. Erdahl Ditch Culvert ..................................................................................................... 8

4.3.4. Reinforced Embankment Design ................................................................................ 9

4.4. Retaining Walls .................................................................................................................. 15

4.4.1. 34th Avenue East Soldier Pile Wall .............................................................................. 15

4.4.2. Cast-in-Place Retaining Walls and SEWs ................................................................. 15

4.4.3. Contractor-Designed Structural Earth Walls (SEWs) ............................................. 17

4.5. Luminaire and Signal Poles ............................................................................................... 18

4.6. Pavement Design .............................................................................................................. 23

4.6.1. Subgrade Preparation ................................................................................................. 23

4.6.2. Design Loading ........................................................................................................... 23

4.6.3. Design Sections .......................................................................................................... 24

5.0 LIMITATIONS ....................................................................................................................... 25

LIST OF FIGURES

Figure 1. Vicinity Map
Figure 2. Site Plan
Figures 3 through 12. SLOPE/W Analysis
Figure 13. Settle3D Analysis – Settlement Contour Plan
Figure 14. B-Line: Distance vs. Total Settlement
Figure 15. D-Line: Distance vs. Total Settlement
Figure 16. D-Line Cross Section: Distance vs. Total Settlement
Figure 17. Earth Pressure Diagram – Permanent Cantilever Soldier Pile Wall
Figure 18. Shallow Foundation Design

APPENDICES

Appendix A. Subsurface Exploration Program and Laboratory Testing
   Figure A-1. Key to Exploration Logs
   Figures A-2 through A-6. Logs of Borings
   Figures A-7 through A-9. Sieve Analysis Results
   Figure A-10. Atterberg Limits Results
   Figure A-11. Consolidation Test Results
   Figure A-12. Revised Groundwater Hydrograph


Appendix C. Previous Explorations by Others

Appendix D. Calculation Sheets
   Figures D-1 through D-3. Pavement Design Sheets

Appendix E. Report Limitations and Guidelines for Use
1.0 INTRODUCTION AND PROJECT UNDERSTANDING

This report presents our geotechnical analysis and recommendations in support of the Interstate 5 (I-5) Port of Tacoma Road Interchange project in Fife, Washington. The project will redirect traffic from a new I-5 Port of Tacoma Road off ramp at milepost 136.0 to a new 4-way intersection at Pacific Highway and 34th Avenue East as well as to Port of Tacoma Road. A Vicinity Map and Site Plan are provided as Figures 1 and 2, respectively. We completed a geologic review in February 2010 in support of the Interchange Justification Report (IJR) as well as a Draft Geotechnical Engineering Services Report (GTR) in February 2015 for the project. This revised report has been prepared for inclusion in project specifications. The full design report dated January 8, 2018 was provided to BergerABAM.

The proposed project includes building new I-5 on- and off ramps. The on- and off ramps will be constructed on soil embankments that rise to the elevation of the Port of Tacoma Road overcrossing. The embankments will use 2H:1V (horizontal:vertical) fill slopes or be supported by geosynthetic retaining walls. Embankments with fill slopes will be located west of and along 34th Avenue East. Embankments will be supported on fills and retaining walls east of 34th Avenue East. Based on the roadway profiles and cross sections provided by BergerABAM the embankments are envisioned to have a maximum height of 26 feet above the existing ground surface. Walls will be designed using Washington State Department of Transportation (WSDOT) Standard Plans D-3.09-00 “Permanent Geosynthetic Wall” using cast-in-place concrete fascia per WSDOT Standard Plans D-3.10-01 “Cast-in-Place Permanent Geosynthetic Wall Fascia and Facing”. A new embankment along 34th Avenue East will cross the existing Erdahl ditch. A culvert will be constructed to maintain the flow of stormwater from the ditch through the embankment.

The project will cross Pacific Highway East from the new I-5 off ramp to 34th Avenue East where a new intersection will be constructed. 34th Avenue East will be widened and connected to Port of Tacoma Road via 12th Street East. New signal poles will be installed at the intersections of Pacific Highway East and 34th Avenue East, 12th Street East and 34th Avenue East, the southbound off-ramp and Port of Tacoma Road, the southbound off-ramp and 34th Avenue East, and Port of Tacoma Road and 12th Street East. Signal poles, luminaires, and sign structure will be supported on drilled shaft foundations. The drilled shaft foundations will be designed using WSDOT standard plans, as applicable.

Retaining walls will be constructed on the north and south side of 12th Street East and east of the intersection of Port of Tacoma Road and 12th Street East. A retaining wall will also be constructed on the north side of Pacific Highway East, east of the intersection of 34th Avenue East and Pacific Highway East. The retaining wall north of 12th Street East will be a geosynthetic wall with cast-in-place fascia. The wall south of 12th Street East will be a structural earth wall (SEW) with concrete block facing. The wall north of Pacific Highway will be monolithic cast-in-place concrete together with the moment slab and traffic barrier. A cantilevered soldier pile wall will be constructed on the west side of 34th Avenue East adjacent to the southeast corner of the Love’s Travel Stops property.
2.0 PURPOSE AND SCOPE OF SERVICES

2.1. Geotechnical Evaluation and Report (Site Exploration and Laboratory Testing)

The purpose of our services is to explore subsurface conditions as a basis for developing geotechnical engineering recommendations for the design and construction of the project. Our geotechnical scope of services includes the following items:

1. Obtain WSDOT general permit for borings located on the existing I-5 southbound on ramp at milepost 136.0 and along Port of Tacoma Road overcrossing embankment (borings B-1 and B-2).
2. Coordinate clearance and location of existing underground utilities in the project area. We contacted the Washington Utilities Coordinating Council “One Call” service prior to beginning explorations.
3. Perform five exploratory borings using mud rotary and hollow-stem auger drilling techniques. Groundwater monitoring wells were installed in three borings located on 34th Avenue East.
4. Perform laboratory analysis of select soil samples including moisture content determination, fines content determination, grain-size distribution analysis and one-dimensional consolidation testing. Our laboratory program consisted of moisture content determinations, fines content determinations, grain-size distribution analyses and one-dimensional consolidation test.
5. Provide recommendations for the design of geosynthetic retaining walls based on WSDOT standard plans including lateral earth pressures, allowable soil bearing pressures, global stability analyses and settlement.
6. Provide recommendations for the design of ground improvement for the support of geosynthetic retaining wall embankments.
7. Provide recommendations for the design of sloped embankments based on the WSDOT Geotechnical Design Manual (GDM).
8. Provide estimates of soil settlements along fills and retaining walls. Estimates will include settlement expected during construction of embankments and settlement after removal of soil surcharge/preload.
10. Develop a plan for measuring soil settlements including location, number, and type of settlement measuring devices. We understand that this monitoring plan might be used for calculating volumes for payment.
11. Provide recommendations to determine when soil surcharge/preload can be removed.
12. Provide recommendations for the design of cantilever soldier pile walls.
13. Provide recommendations for the design of monolithic cast-in-place retaining walls.
14. Develop geotechnical recommendations for signal and luminaire poles and sign structure foundations. Design recommendations are based on WSDOT standard plans, where applicable.
15. Develop geotechnical recommendations for design and construction of culverts including cast-in-place concrete headwalls.
16. Develop geotechnical recommendations for asphalt concrete pavement design sections.
3.0 SITE CONDITIONS

3.1. Geologic Setting

The project is located in Pierce County in Fife, Washington, in Township 21N, Range 3E, Sections 2 and 11 (Willamette Meridian). This area is a relatively flat alluvial plain. The natural ground surface (not including artificial fill embankments or stream channels) is at about Elevation 8 to 12 feet. (All elevations referenced in this report are based on topographic data provided by BergerABAM.) Geologically, this area is known as the Puyallup Trough. The Puyallup Trough was scoured by glaciers during the last ice age, Vashon Stade. When the glaciers began to retreat a large lake formed in the trough from the glacial melt water. As the glaciers continued to melt the sea level rose slowly to its current level approximately 6,000 years ago, inundating the lake (Hart Crowser 1983). Deltaic and river deposits were progressively deposited in the project area from the Puyallup River, Wapato Creek, and Hylebos Creek as the sea level rose. The soils underlying the project area are identified as alluvium in the published geologic maps. Alluvium can be 100 to 200 feet thick in this area.

3.2. Surface Conditions

The project area is located in a commercially developed area of Fife, Washington. Surface improvements within the project area include the existing on- and off-ramps for I-5, 20th Street East, Pacific Highway East, Port of Tacoma Road, 34th Avenue East, and 12th Street East. The off-ramp infield areas bounded by I-5, Port of Tacoma Road, and the existing I-5 on- and off-ramps is undeveloped and vegetated with grass and shrubs.

3.3. Subsurface Conditions

3.3.1. Subsurface Explorations

We performed five subsurface investigations as part of this phase of the study to further characterize site soils. The explorations were drilled to depths ranging from 21.5 feet to 101.5 feet below ground surface (bgs).

One boring was performed on the I-5 on ramp, which connects Port of Tacoma Road to I-5 and one boring was performed along Port of Tacoma Road on the overcrossing embankment. These borings were performed in support of the design of the geosynthetic retaining walls and embankments. Three borings with groundwater monitoring wells were installed on 34th Avenue East. The Site Plan in Figure 2 shows the locations of the borings with respect to the proposed temporary off-ramp and permanent on- and off-ramps. Appendix A provides details regarding the subsurface exploration as well as detailed boring logs.

During a previous phase of this study in 2015, we advanced nine subsurface explorations to depths ranging between 9 feet and 71.5 feet bgs. We reviewed exploration logs from our Draft GTR in February 2015. These explorations are in Appendix B.

In addition to subsurface exploration program performed as part of this study we reviewed explorations logs from previous investigations by others contained in our geologic study for the IJR in February 2010 and in a WSDOT 1999 study. Forty-four subsurface explorations were reviewed to help characterize the site soils. These exploration logs are included in this report as Appendix C. Seven borings completed by WSDOT in 1999 were within or near the proposed on- and off-ramp embankment alignments.
3.3.2. Soils

Borings in the area completed by us and by others typically indicate approximately 5 to 10 feet of medium dense to very dense sand and gravel fill across the majority of the project area. Some exceptions include: (1) B-2 on Port of Tacoma Road where we observed about 28 feet of embankment fill; (2) a thicker unit of fill, approximately 14 feet, was reported in the Landau boring B-3 on the southbound on-ramp to I-5; (3) a medium stiff sandy silt with gravel was reported as fill material in the AMEC boring B-5; and (4) no fill was reported in the WSDOT borings H-1-99, H-2-99, H-3-99, and H-6-99 located in the undeveloped off-ramp infield areas.

Below the fill and typically below about Elevation 5 feet, we interpret the native soil to consist of alluvium. For the purposes of design, we divided the alluvium into an upper layer and a lower layer. This division is based on an observed difference in relative density as indicated by Standard Penetration Tests (SPTs). The contact between the upper and lower alluvium was observed to be between about Elevation -29 feet to Elevation -47 feet but is typically at about Elevation -40 feet.

The upper layer of alluvium generally consists of interbedded very soft to stiff silts and sandy silts and very loose to dense sands and silty sands. The upper layer of the alluvium deposit consists of soils characterized as a combination of overbank, deltaic and tidal deposits. The lower alluvium consists of medium dense to very dense sands and silty sands and is consistent with riverbed alluvium deposits.

3.3.3. Groundwater

Groundwater was reported in borings and test pits at Elevations 10 feet to -7 feet (3 to 20 feet bgs). Groundwater levels are influenced by local subsurface conditions (for example, drains or abandoned stream channels). We expect groundwater conditions at the site to vary with the seasons, local precipitation, and other factors such as surface drainage. The groundwater levels may also be tidally influenced to a slight degree, although we expect this to contribute less than other factors. We anticipate that perched groundwater could be encountered within fill layers and between the fill and the native soils, particularly where more permeable sand and gravel fill overlies less permeable soils. Larger zones of perched groundwater should be expected during the winter and spring months.

Groundwater monitoring wells were installed along 34th Avenue East. These wells included data loggers to measure groundwater fluctuations. The data loggers were installed on May 12, 2017 and the data was retrieved on February 14, 2018. A graph of the data is presented as Figure A-12. In our opinion, the groundwater fluctuations observed are consistent with a typical seasonal trend. The minor fluctuations within the data are consistent with the effect of localized precipitation.

We understand underground utility vaults and trenches are proposed along Pacific Highway East and 34th Avenue East roadway alignments and that culverts are proposed with the I-5 ROW. Due to the presence of shallow groundwater observed in our groundwater monitoring wells we anticipate construction dewatering will be required.
4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1. Design Standards

The geotechnical design recommendations provided in this report are based on the WSDOT GDM 2015, and the 2016 American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications (AASHTO LRFD).

4.2. Seismic Design Recommendations

4.2.1. AASHTO Seismic Design Parameters

Based on subsurface conditions encountered in our explorations and our understanding of the geologic conditions in the site vicinity, the site may be characterized as Site Class D in accordance with the 2016 AASHTO LRFD. Seismic design may be performed using the procedures outlined in the AASHTO LRFD using the parameters provided in Table 1, below.

<table>
<thead>
<tr>
<th>TABLE 1. DESIGN PARAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Spectra</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>PGA = 0.40</td>
</tr>
<tr>
<td>( S_1 = 0.89 )</td>
</tr>
<tr>
<td>( S_1 = 0.30 )</td>
</tr>
</tbody>
</table>

4.2.2. Liquefaction

Liquefaction refers to a condition where vibration or shaking of the ground, usually from earthquake forces, results in development of excess pore pressures in saturated soils and subsequent loss of strength in the affected soil. In general, soils that are susceptible to liquefaction include loose to medium dense “clean” to silty sands and non-plastic silts that are below the water table. We evaluated the soil profile for liquefaction potential using methods developed by Idriss and Boulanger (2008). This method compares the predicted cyclic shear stress (CSS) induced by the design earthquake to the cyclic shear resistance (CSR) determined by correlations with SPT blow counts. The ratio of the CSR to the CSS is the cyclic shear ratio and is considered the factor of safety against liquefaction.

Our liquefaction analysis of the upper alluvium indicates that some soil layers are potentially liquefiable under the design event and some are not. Layers within this unit have factors of safety against liquefaction between about 0.2 and 2.0 and an average of about 1.0. We characterized the upper alluvium as partially liquefiable. The lower alluvium, below Elevation -45 feet, generally has a factor of safety against liquefaction above 2.0 and is considered non-liquefiable.

The post-liquefaction residual shear strength of the upper alluvium was modeled using a reduced shear strength (residual strength) based on the correlations presented in Soil Liquefaction During Earthquakes by Idriss and Boulanger (2008). This method correlates SPT blow counts to a residual shear strength ratio (\( SR/\sigma'vc \)).

As a result of our liquefaction analysis, we further divided the upper alluvium into two different layers for the purposes of design. The residual strength of the upper alluvium above about Elevation -10 feet was
based on the average SPT blow counts. We calculated this layer has a $SR/\sigma'vc$ of 0.1, this corresponds to a friction angle of about 6 degrees.

The residual strength of the upper alluvium between about Elevation -10 feet and Elevation -45 feet was taken as the weighted average of the predicted residual strength for the liquefiable portions and the unliquefied strength of the non-liquefiable portions. Based on this method, we calculated this layer has an average $SR/\sigma'vc$ of 0.3, this corresponds to a friction angle of about 19 degrees.

Based on our explorations and correlations developed between SPT blow count and liquefaction-induced settlement (Ishihara and Yoshimine 1992 and Tokimatsu and Seed 1987), we calculate that liquefaction during the design earthquake could result in settlement at ground surface on the order of 6 to 24 inches. Because of the unpredictable nature of earthquakes and variability of on-site soil conditions, differential settlement under earthquake conditions could be similar to the total settlement. If timber pile rigid inclusions are installed to the minimum recommended depth (Elevation -15 feet as described in the “Reinforced Embankment Design” section), we calculate the total liquefaction-induced settlement could be on the order of 5 to 10 inches.

4.3. I-5 On- and Off-ramp Embankments

4.3.1. General Recommendations

The alluvium in and around the area of the Port of Tacoma and Puyallup River Valley is compressible under long-term loads and susceptible to liquefaction during significant seismic events. Heavy structures supported on shallow foundations underlain by liquefiable soils, such as the planned interchange embankments, will be susceptible to potential bearing failure and/or relatively large total and differential settlements. Where such bearing failures could impact adjacent structures, we recommend that ground improvement be used to mitigate the effects of liquefaction. Most of the proposed embankments will not be located near structures and, therefore, will not require seismic analysis per section 9.2.3.1 of the WSDOT GDM.

The weight of the embankment will induce significant post-construction consolidation settlement of the underlying compressible alluvium. Anything constructed on, within, or near the embankment before the alluvium has consolidated under new construction loads will settle along with the embankment. We recommend that the embankment be constructed, preloaded, and surcharged to allow for consolidation settlement to occur before settlement-sensitive portions of the project are constructed. Consideration also should be given to existing, settlement sensitive utilities which could be adversely impacted by ground improvement installation and/or consolidation-related settlement resulting from embankment construction.

Our understanding of the on- and off-ramp embankment construction sequencing is based on discussions with BergerABAM and our experience with contractors’ typical means and methods. We anticipate construction sequencing will be as follows:

1. Construct site access consisting of geotextile fabric overlain with quarry spalls,
2. Install ground settlement measurement devices,
3. Construct ground improvement for the off ramp beneath the wall along I-5 (Wall J) at the location of the future bridge abutment and walls along the maintenance access road east of 34th Avenue East (Wall G).

5. Construct temporary southbound off-ramp embankment.

6. Construct permanent southbound off-ramp embankment.

7. Place surcharge fill on the permanent and temporary southbound off-ramp east of the existing southbound off-ramp. Leave surcharge in place until defined settlements have occurred. Remove surcharge. Construct pavement and traffic barriers.

8. Move traffic to the permanent and temporary off-ramp built above and demolish the eastern portion of the existing southbound off-ramp.

9. Construct remaining embankments except where 34th Avenue East crosses the existing southbound off-ramp.

10. Place surcharge fill on embankments. Leave surcharge in place until defined settlements have occurred. Remove surcharge. Construct pavement and traffic barriers.

11. Move traffic to the completed B-Line and close the remainder of the existing southbound off-ramp.


13. Place surcharge fill on this embankment. Leave surcharge in place until defined settlements have occurred. Remove surcharge. Construct pavement and traffic barriers.

14. Move traffic onto the new southbound off-ramp.

Our analysis and recommendations are based on this construction sequence. If the contractor elects to deviate from this sequence we should be contacted so that we can evaluate the effects of this change and revise our analysis or recommendations as appropriate.

4.3.1. Embankment Fill Materials

We recommend that embankment fill material consist of a sand and gravel fill with few fines. In our opinion Gravel Borrow as described in WSDOT Section 9-03.14 of the Standard Specifications is an appropriate fill material. Embankment fill material placed in the reinforcement zone of geosynthetic walls as specified in the WSDOT Standard Plans D-3.09-00 “Permanent Geosynthetic Wall” must consist of Gravel Borrow. During periods of prolonged dry weather fill with a higher fines content may be considered for use as embankment fill material outside of the reinforced zone. Select Borrow as described in WSDOT Section 9-03.14 of the Standard Specifications allows for a fines content up to 10 percent compared to Gravel Borrow, which allows 7 percent. In our opinion, Select Borrow is appropriate for use as structural fill provided the required compaction can be achieved. As the amount of fines increases, soil becomes increasingly more sensitive to small changes in moisture content. This will increase the risk that fill will become unstable during wet weather and might not be able to be reused if it becomes wet or saturated.

4.3.2. Ground Improvement

Liquefaction-susceptible soil can be treated by ground improvement methods to reduce the potential for ground settlement and to increase available soil strength during seismic events. Based on the results of our global stability analysis, we determined that ground improvement must extend to at least Elevation -15 feet under the embankment walls in order to prevent a global bearing failure during the design earthquake. Ground improvement under embankments with sloped sides is not required provided that a seismic bearing failure will not impact adjacent structures. Based on our analysis and experience
with similar analyses, structures that are located more than one and one-half times the height of the embankment from the toe of the embankment will not be impacted by a global bearing failure.

With this level of ground improvement, some potentially liquefiable material will remain below the improved zone. We calculate that this could result in liquefaction-induced settlement on the order of 5 to 10 inches although potentially damaging differential settlements are expected to be reduced. If this seismic performance is not acceptable, the ground improvement must extend deeper, potentially down to Elevation -50 feet, to improve more of the potentially liquefiable soils and to provide some embedment into the non-liquefiable lower alluvium layer.

The site contains a mixture of liquefiable sands and silts. Densification methods of ground improvement such as vibro-float installed stone columns are effective in sands but typically cannot provide the densification required in the silt layers to consistently mitigate liquefaction and may not be appropriate for this site. Our analysis of the embankment is based on the assumption that timber pile rigid inclusions will be used.

The strength of the composite soil and ground improvement provided by driven pile rigid inclusions is based on the shear resistance of the pile (a function of the pile diameter and species of wood) the spacing of the piles, and the strength of the surrounding soil. We have based our analysis on 13-inch timber pile rigid inclusions that provide an ultimate shear resistance of 25.4 kips per pile (as provided by BergerABAM). The shearing resistance applied to the soil considers both the shear and moment resistance of the pile. Results are scalable, and different combinations of pile diameter and spacing can be used to achieve the required shear resistance. The approximate center-to-center spacing is based on a triangular pattern and has been rounded to the nearest quarter foot.

<table>
<thead>
<tr>
<th>Target Composite Shear Resistance</th>
<th>Average Diameter of Pile</th>
<th>Approximate Center-to-Center Pile Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,800 psf</td>
<td>13-inch</td>
<td>3.75 feet</td>
</tr>
<tr>
<td>1,400 psf</td>
<td>13-inch</td>
<td>4.25 feet</td>
</tr>
<tr>
<td>900 psf</td>
<td>13-inch</td>
<td>5.25 feet</td>
</tr>
</tbody>
</table>

Our analysis indicates that the full strength of the timber pile rigid inclusions are required from the ground surface to the design tip elevation in order to prevent a bearing failure under seismic conditions. Therefore, timbers must be treated to prevent deterioration of the piles where they are expected to be above the groundwater table.

4.3.3. Erdahl Ditch Culvert

4.3.3.1. GENERAL

A culvert will be installed to convey water from the Erdahl ditch through the embankment. We anticipate the culvert will be installed first and then covered with the embankment. As a result, the embankment will induce settlement of the culvert. The culvert must be designed structurally to withstand the estimated total and differential settlement. Embankment settlement estimates are provided in the “Reinforced Embankment Design” (Consolidation Settlement) section of this report. Additionally, the culvert may need
4.3.3.2. LATERAL SOIL PARAMETERS
The earth pressure design parameters provided below are based on Rankine and Mohr-Coulomb earth pressure theory. The effects of soil arching and the effects of soil reinforcement contained in the fill overlaying the culvert will likely reduce the lateral soil pressures applied to the culvert. These effects, if considered, must be evaluated on a case-by-case basis.

Lateral earth pressures against the side of the culvert can be estimated using a trapezoidal pressure distribution. For an unyielding rigid culvert, the pressure on the sides of the culvert should be taken as 56 times the vertical distance from the top of the embankment to any point on the side of the culvert, in pounds per square foot (psf). If the sides of the culvert are permitted to yield over 0.002 times the height of the culvert walls, then an active earth pressure can be used. The active pressure can be taken as 35 psf times the vertical distance from the top of the embankment to any point on the side of the culvert.

These pressures are based on the presumptive soil strength and weight parameters for Gravel Borrow provided in the WSDOT GDM; specifically, a friction angle of 36 degrees and a unit weight of 135 pounds per cubic foot (pcf). If different fill material is used for the embankment, we should be contacted for revised parameters. These pressures are based on the assumption that adequate drainage is provided from within the embankment so that no net or unbalanced hydrostatic pressures develop.

4.3.3.3. BEARING RESISTANCE
The bearing resistance and differential settlement of the planned culverts may be evaluated using the bearing pressure for the planned culvert size shown in Table 3. The table provides bearing resistances for multiple footing widths under Service, Strength and Extreme Event Limit loading states. Resistances presented for the Service and Strength Limit states have been factored with the appropriate resistance factors. The service limit state is based on limiting differential settlement due to the culvert concentrating loads from the overlaying embankment on the subgrade under the culvert foundations. Total settlement of the culvert will be controlled by weight of the overlaying embankment. The Extreme Event Limit State has not been factored. A resistance factor of 0.9 should be applied to the values in Table 3 for seismic loading cases.

<table>
<thead>
<tr>
<th>Footing Size (ft)</th>
<th>Service Limit State (ksf)</th>
<th>Strength Limit State (ksf)</th>
<th>Extreme Event Limit State (ksf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>16.6</td>
<td>36.8</td>
<td>33.1</td>
</tr>
<tr>
<td>6</td>
<td>17.3</td>
<td>38.4</td>
<td>34.6</td>
</tr>
<tr>
<td>8</td>
<td>18.0</td>
<td>40.1</td>
<td>36.1</td>
</tr>
</tbody>
</table>

4.3.4. Reinforced Embankment Design
4.3.4.1. GENERAL
We understand that the reinforced embankment will be constructed using WSDOT Standard Plan D-3.09 00 “Permanent Geosynthetic Wall”. This method will be used for both permanent and temporary embankments. Permanent embankments will be encased in a cast-in-place fascia in accordance with WSDOT Standard Plan D-3.10-01 “Cast-in-Place Permanent Geosynthetic Wall Fascia and Facing” after the
prescribed embankment settlement has occurred. It is our opinion that the site conditions are appropriate for these standard plans.

4.3.4.2. BEARING RESISTANCE

The reinforced embankment will require bearing resistance to prevent a shearing failure of the underlying soil. Bearing resistances for reinforced embankments constructed on timber pile rigid inclusions may be evaluated using the resistances for Service, Strength and Extreme Event Limit loading states presented in Table 4. Preloading will be required to achieve the Service Limit States. The reported Service Limit States have been capped at 10 ksf and the reported Strength Limit States have been capped at 15.0 ksf to account for localized effects of the timber piles. If higher bearing resistances are required, we should be contacted to evaluate the specific loading case and location. The Extreme Event Limit State includes the effects of seismic soil liquefaction between the timber pile rigid inclusions.

<table>
<thead>
<tr>
<th>Target Composite Shear Resistance</th>
<th>Minimum Footing Size (ft)</th>
<th>Service Limit State (ksf)</th>
<th>Strength Limit State (ksf)</th>
<th>Extreme Event Limit State (ksf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,800 psf</td>
<td>15</td>
<td>10.0</td>
<td>15.0</td>
<td>11.3</td>
</tr>
<tr>
<td>1,400 psf</td>
<td>11</td>
<td>10.0</td>
<td>15.0</td>
<td>8.7</td>
</tr>
<tr>
<td>900 psf</td>
<td>11</td>
<td>10.0</td>
<td>14.3</td>
<td>5.7</td>
</tr>
</tbody>
</table>

Temporary reinforced embankments do not need to be supported on improved ground. In our opinion, the unimproved alluvium is suitable for an allowable bearing resistance of 4,500 psf, provided that the near-surface soils consist of sandy silt or silty sand as observed in our explorations. Soft organic silt or peat can be present in alluvial soils. We recommend that we observe a proof-roll of the subgrade with a loaded truck or similar heavy equipment in order to evaluate the subgrade. Areas of yielding or pumping soil should be compacted or overexcavated to achieve a firm and unyielding bearing surface. Overexcavation should be backfilled with compacted granular backfill. This allowable bearing pressure is based on resisting a shearing failure. Significant post-construction settlements are anticipated as described in the “Consolidation Settlement” section of this report.

4.3.4.3. EMBANKMENT GLOBAL STABILITY AND EXTENTS OF TIMBER PILE RIGID INCLUSIONS

We evaluated the global stability of the embankment using the computer program SLOPE/W (GEO-SLOPE International, LTD., 2012). SLOPE/W evaluates the stability of multiple trial shear surfaces in a vertical slice limit-equilibrium method (Bishop). This method compares the ratio of forces and moments driving slope movement versus forces and moments resisting slope movement for each trial shear surface, and presents the results as the factor of safety. The program then sorts the trial shear surfaces and identifies the surface with the lowest factor of safety, or the “critical” shear surface.

Based on our stability model we determined that ground improvement must extend 2 feet beyond the face of the geosynthetic wall and to a depth of 25 feet bgs (Elevation -15 feet) in order to meet minimum seismic stability requirements. Figures 3 through 12 show the model configuration and the results of our analyses.

We calculated the factor of safety of the embankment under static (non-seismic) conditions using a 250 psf traffic surcharge. We also calculated the factor of safety under two seismic conditions. We performed a pseudo-static analysis using a lateral acceleration of 0.22g, one-half of the design PGA. With this method a factor of safety greater than 1 indicates that permanent seismic deformation after the design event
should be relatively small. We also calculated the factor of safety for a liquefied seismic condition where the soils are at a post-liquefaction residual strength described in the “Liquefaction” section of this report. The results of the controlling cases are summarized in Table 5.

**TABLE 5. GLOBAL SLOPE STABILITY RESULTS**

<table>
<thead>
<tr>
<th>Design Case</th>
<th>Static Case Factor of Safety</th>
<th>Seismic Case Factor of Safety (Liquefied)</th>
<th>Seismic Case Factor of Safety (Pseudo-Static)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Line Future Abutment (30-foot embankment wall with abutment; Figures 3 – 5)</td>
<td>1.64</td>
<td>1.15</td>
<td>1.23</td>
</tr>
<tr>
<td>B-Line 31+00 (20-foot embankment with 10-foot wall; Figures 6 – 8)</td>
<td>1.71</td>
<td>1.13</td>
<td>1.21</td>
</tr>
<tr>
<td>B-Line 33+00 (12-foot embankment with 10-foot wall; Figures 9 – 11)</td>
<td>1.97</td>
<td>1.13</td>
<td>1.38</td>
</tr>
<tr>
<td>B-Line 27+80 (full embankment; Figure 12)</td>
<td>1.53</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

The D-Line Future Abutment design case analyzes the section of the Wall J that will eventually become the abutment for the bridge over I-5 on D-Line. This case analyzes a 29-foot tall geosynthetic wall with a line load of 2.4 kip per linear foot (kipf) dead load and 4.08 kipf live load to simulate the abutment. In this design case, the area treated by the timber pile rigid inclusions should extend 2 feet beyond the face of the wall and 14 feet beyond the back of the geotextile reinforcing, a total of 36 feet in the analyzed case. The timber piles must provide a composite strength of 1,800 psf. This design case and extent of timber pile rigid inclusions should be applied where the geosynthetic walls are greater than 10 feet tall. Based on our current understanding of project plans this is roughly Station 0+25 to 1+60 on the Wall J alignment.

The B-Line 31+00 design case analyzes embankments that are about 20 feet tall, with a 10-foot geosynthetic wall at the toe of the slope. In this design case, the area treated by the timber pile rigid inclusions should extend 2 feet beyond the face of the wall and 8 feet beyond the back of the geotextile reinforcing, a total of 24 feet in the analyzed case. The timber piles must provide a composite strength of 1,400 psf. This design case should be applied where walls at the toe of an embankment is less than 10 feet tall. Based on our current understanding of project plans this is roughly Station 0+00 to 0+25 and 1+60 to the end (about 4+55) of the Wall J alignment and the full length of the Wall G alignment.

The B-Line 33+00 design case analyzes embankments that are about 12 feet tall, with a 10-foot geosynthetic wall at the toe of the slope. In this design case, the area treated by the timber pile rigid inclusions should extend 2 feet beyond the face of the wall and 2 feet beyond the back of the geotextile reinforcing, a total of 18 feet in the analyzed case. The timber piles must provide a composite strength of 900 psf. This design case should be applied where the wall is less than 10 feet tall and the overall embankment is less than 12 feet tall. Based on our current understanding of project plans this is roughly Station 32+00 to 36+00 on the B-Line alignment.

The B-Line 27+80 design case represents the tallest segment of the embankment and uses 2H:1V slopes. This analysis is the critical design section for all embankments that do not incorporate retaining walls or other structures. No ground improvement is required to meet minimum stability criteria in these areas.
4.3.4.4. CONSOLIDATION SETTLEMENT

We evaluated settlement of the proposed embankments using the computer program Settle3D (Rocscience Inc.). Settle3D uses three-dimensional stress distributions within soil based on Boussinesq theory to calculate one-dimensional (vertical) consolidation and pore pressures incurred from applied surface loads.

The results of the model are presented as color coded contours in Figure 13 and also as graphs along the noted query lines (Figures 14 through 16). We consolidated the data from the explorations into one generalized subsurface profile. The estimated high and low values of settlement are based on variations observed in the soil lab testing from otherwise similar soils. We present high and low settlement estimates for the proposed embankment loading including the effects of timber pile rigid inclusions extending to 25 feet below the embankments, as recommended for stability. The temporary off ramp was not included in the model but will induce settlement similar to that calculated for similar height permanent embankments.

In our settlement model we included the surcharges from existing embankments. These embankments have preloaded some parts of the alignment and have, therefore, reduced the amount of expected settlement from the new embankments. The effects of this surcharging can be seen in the B-line graph from 700 to 800 and in the D-Line graph from 260 to 340. A sharp transition can be seen in the D-line graph of the ground improvement model at about 580. In our opinion, this is an artifact of the model transitioning from the improved soil to the unimproved soil and the large difference in the two stiffnesses. The actual transition is expected to be more gradual.

The maximum settlement is likely to occur at the center of the intersection where 44 to 52 inches of settlement is predicted. Settlement is expected to taper off to zero as the new embankment height lowers to zero and transitions to existing grade. The shape of the predicted settlement profile at the D-Line cross section is typical for the settlement profile perpendicular to the alignment.

In all cases, roughly half of the calculated settlement is immediate elastic settlement, settlement that occurs almost immediately after loading or during fill placement. The remaining settlement is consolidation settlement, which takes more time and will require a preload period. This type of settlement will theoretically never fully stop. The intent of the preload is to allow enough of the consolidation settlement, usually 90 to 95 percent, to occur during construction so that post-construction settlement is limited to acceptable levels. As an example, the large settlements at the center of the embankment are predicted to be on the order of 52 inches. About half of this could occur as the embankment is being built (about 26 inches). If 90 percent of the consolidation settlement occurs during the preload (about 23.5 inches) then the predicted post-construction settlement could be on the order of 3 inches.

The time rate of consolidation settlement is dependent on the thickness of the individual compressible layers and how permeable the layers are. The thickness of these layers varies across the site. In boring H-1-99, directly east of the Port of Tacoma Road embankment, a 15-foot-thick layer of silt is reported. If we conservatively assume that there are no intermediate sand layers within this unit (i.e., no un-sampled sand layers located between SPTs), it could take as long as two to three years to achieve 90 to 95 percent consolidation. This slow rate is not common in this Port of Tacoma and Fife and would be unusual for this area. Although this slow rate of settlement is not typical, it is possible based on the data available.
In most explorations, there are no reported silt layers thicker than about 5 feet. In our experience, this is more typical of these types of alluvial soils. In this case, it could take about 14 to 18 weeks to achieve 90 to 95 percent of the consolidation settlement.

Vertical drains can sometimes be used to speed the preload period. However, vertical drains were not observed to be effective on the nearby I-5 Portland Avenue to Port of Tacoma Road Northbound HOV project. Alternatively, the project could be staged in a way to allow the project to be opened to traffic before the consolidation period is complete. Often when this staged approach is used, the roadway is paved with a reduced pavement section designed for two to five years and then releveled and overlaid after the preload period with the full design pavement section.

4.3.4.5. PRELOAD AND SURCHARGE

We recommend that settlement-sensitive structures and final pavement sections not be constructed until all the sections of the fill embankment have been constructed and allowed to settle. We also recommend that the embankment be surcharged with at least 300 psf (roughly equivalent to 2.5 feet of additional fill) to account for the weight of improvements such as pavement, sidewalks, and railing that will be added afterwards. A larger surcharge should be used in areas where permanent improvements are expected to weigh more than 300 psf. For example, the area on D-Line that will become an abutment in future phases may require additional surcharge. It is our opinion that in areas that will receive less than about 250 psf of additional load (about 2 feet of fill) the surcharge can be omitted with only minor risk of unacceptable post-construction settlements.

Surcharging to increase the rate of settlement will not likely be practical. Based on WSDOT experience, it typically requires increasing the total load by about 30 to 40 percent (i.e., adding an additional 8 feet to a 20-foot embankment) in order to make an appreciable difference in the rate of consolidation.

Groundwater levels can affect consolidation settlement and preloads. Lowering groundwater levels can induce consolidation settlement and similarly high groundwater levels can reduce the effectiveness of preloads. We suggest that preloads be scheduled for early to mid-fall when groundwater levels are historically the lowest. If preloads are scheduled for other times of the year, late winter or early spring for example, additional surcharge may be required to account for higher groundwater levels. Typically, an additional half foot of surcharge fill is required to accommodate every foot the groundwater is over the seasonal low groundwater elevation.

4.3.4.6. SETTLEMENT MONITORING DURING CONSTRUCTION

We recommend that any area where more than 4 feet of permanent fill is placed be monitored for settlement. Multiple settlement monitoring points should be established and the absolute elevation of the monitoring points should be recorded weekly or every time the embankment is raised more than 5 feet. The survey should also include a measurement of the fill height during that point in the construction. A survey of the centerline every 100 feet should provide sufficient information to track fill height during construction. The survey bench marks used to establish absolute elevation should be located at least 100 feet from the embankment and should periodically be checked against established benchmarks outside of the project area.

Settlement monitoring points can consist of targets for optical survey affixed to vertical elements (walls), hubs placed in completed fill areas, plates and rods founded at the bottom of the embankment fills, or
vibrating wire piezometric remote settlement monitoring systems. The type of monitoring system used will depend on the location of the point and the expected construction activity in that area.

We recommend that two-stage geosynthetic walls (geosynthetic walls that will be covered with a facia after settlement) have optical survey monitoring points affixed to the face of the geosynthetic wall. These monitoring points should be evenly spaced along the length of the wall with no more than about 100 feet between points.

We recommend that fill embankments (including embankments supported by walls) have remote settlement monitoring systems installed on the center line of the embankment. The monitoring points should be located at the highest fill points and evenly spaced with no more than about 250 feet between points. We recommend that monitoring points be placed below the quarry spall construction road. Monitoring points should be bedded and installed in accordance with the manufacturer’s recommendations. Signal cables and liquid lines must be protected from damage. The fluid reservoir and readout terminal must be located in a stable location away from construction traffic.

Traditional survey hubs will only be appropriate for use as monitoring points in areas where fill placement is complete and where construction traffic is limited.

We recommend that piezometers or wells be installed to monitor groundwater levels during the fill and preload period so that the need for additional surcharge fill can be assessed. We recommend that at least two wells, one at both ends of the project site, be installed.

The location of all monitoring points and instrumentation should be determined by the engineer with input from the contractor so the monitoring points can be set in critical areas but also away from heavy construction traffic to reduce the potential for monitoring points to be damaged by construction activity.

The decision to remove the preload and continue with construction must be made based on the observed and measured settlement. We recommend that the “Square Root of Time” method be used for determining when 90 percent of the consolidation has occurred. The quantity and rate of settlement is expected to vary across the site based on variations in fill thickness, differences in soil layering, and the inherent variability of soil. The determination to remove the surcharge and continue with construction must be made in coordination with the owner, the lead designer, and the geotechnical engineer. This decision should take into consideration the amount of settlement that has occurred, how much more settlement is predicted, the location where additional settlement is predicted, the risk of additional settlement causing damage to utilities or pavement sections, and the costs associated with extending or reducing the preload period both in terms of construction costs and the impact to traffic.

In areas where timing of the construction is critical and the risks of post-construction settlements are minor, a set time preload period could be considered. A set time preload is a preload period that is based on a set time rather than observation of the measured settlement. Accordingly, this approach increases the risk of unacceptable post-construction settlement. In our opinion this approach is only appropriate if the roadway improvements in the area are flexible such as beam guardrail or repairable such as asphalt pavement. We recommend a minimum preload period of five weeks be used with this approach.
4.4. Retaining Walls

4.4.1. 34th Avenue East Soldier Pile Wall

4.4.1.1. GENERAL
We understand that excavations for the proposed widening of 34th Avenue East adjacent to the southeast corner of the Love’s Travel Stops property may consist of vertical cuts retained with a permanent, cantilevered soldier pile retaining wall. Soldier pile walls include vertical steel H piles spaced about 5 to 10 feet on center, depending on the wall height. The piles are installed by drilling to the required depth, setting the pile into the hole and backfilling with concrete. The embedment depth of the pile is dependent on the height and design loads. The spaces between the piles are protected with lagging. Lagging is typically either treated timbers or precast concrete panels. We recommend that soldier pile walls be designed using the earth pressure diagram presented in Figure 10. The earth pressure diagram does not include the effects of soil liquefaction. Some lateral and vertical displacement of the wall should be expected during the design seismic event. Seismic inertial loads from the retained soil and traffic surcharge loading were included in the earth pressure diagram. If additional surcharge loads are being considered, we must be given the opportunity revise our earth pressure recommendations as appropriate.

4.4.1.2. LAGGING AND DRAINAGE
We recommend that the lagging be designed for a uniform pressure equal to at least one-half the lateral pressure. This pressure reduction is based on a maximum center-to-center pile spacing of 10 feet and the assumption that the lagging can yield relative to the soldier piles. If a wider spacing or a rigid lagging is used, we should be consulted for revised lagging pressures.

The space behind the lagging should be backfilled with free-draining material as soon as practical. The free-draining material will help reduce the risk of voids developing behind the wall and provide additional drainage of potential groundwater seepage. The free-draining material should consist of “pea-gravel” with less than 3 percent fines and/or Gravel Backfill for Drywells as described in WSDOT Section 9-03.12(5) of the Standard Specifications.

A suitable drainage discharge system should be installed to prevent the buildup of hydrostatic pressures behind the soldier pile and lagging wall. If timber lagging is used, drainage may be achieved by spacing the timbers with a vertical gap of approximately 1/8 to 1/4 inch.

Surface water should not be allowed to infiltrate immediately behind the soldier pile walls. Surface water should be directed away from the soldier pile walls using constructed berms and/or swales.

4.4.1.3. CONSTRUCTION CONSIDERATIONS
We anticipate that groundwater will be encountered during soldier pile installation. Installation of the soldier piles could require temporary casing or drilling slurry to prevent caving of loose soils, running sands, and to manage seepage.

4.4.2. Cast-in-Place Retaining Walls and SEWs

4.4.2.1. RETAINING WALL FOOTINGS AND BEARING SURFACE PREPARATION
Loose or disturbed soil at the bearing surface must be removed. Unprotected foundation bearing surfaces must not be exposed to standing water. Should water infiltrate and pool in the excavation, it must be removed before placing crushed rock fill or reinforcing steel for the footing. We recommend after the
bearing surface is prepared it is covered and protected with a 6- to 12-inch thick pad of compacted crushed rock or a 3-inch thick pad of lean mix concrete.

We recommend that a member from our firm observe foundation excavations before the crushed rock or lean mix concrete pad is placed in order to confirm that adequate bearing surfaces have been prepared or to provide recommendations for removal of unsuitable bearing soil.

Retaining wall footings bearing on a surface prepared as described above may be proportioned using the bearing resistance values with respect to footing width in Figure 18. This figure includes bearing resistances for the Extreme, Strength and Service Limit States (elastic settlement of 1 and 2 inches).

These values are appropriate for foundations bearing on flat ground with a minimum vertical embedment of 2 feet. The Extreme Limit State value does not include the effects of soil liquefaction. Some lateral and vertical displacement of the walls should be expected during the design seismic event.

**4.4.2.2. CAST-IN-PLACE RETAINING WALLS AND CULVERT HEAD WALLS**

Lateral soil pressures acting on retaining walls or culvert head walls will depend on the amount of lateral wall movement that occurs as backfill is placed. For walls free to yield at the top at least one thousandth of the wall height (i.e., wall height times 0.001), active soil pressures may be used. If walls are restrained, for example where connected to structural elements perpendicular to the wall, at-rest pressures should be used.

The culvert head walls will be submerged during high flow events. Even with proper drainage measures, a hydrostatic pressure differential will occur as water drains from behind the wall more slowly than the water level drops in the channel. We recommend that a design case be considered where the groundwater behind the culvert head wall is at the expected high-water elevation and the water level in front of the wall is 2 feet below this level.

We recommend that retaining walls and head walls backfilled with gravel borrow placed and compacted as recommended be designed using the soil parameters provided in Table 6, below.

**TABLE 6. LATERAL SOIL PRESSURE PARAMETERS FOR ABUTMENT AND WING WALLS**

<table>
<thead>
<tr>
<th>Soil Parameter</th>
<th>Structural Fill</th>
<th>Submerged Structural Fill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Unit Weight</td>
<td>Total Weight = 130 pcf</td>
<td>Total Weight = 135 pcf</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buoyant Weight = 73 pcf</td>
</tr>
<tr>
<td>Friction Angle</td>
<td>36 degrees</td>
<td>36 degrees</td>
</tr>
<tr>
<td>Cohesion</td>
<td>0 psf</td>
<td>0 psf</td>
</tr>
<tr>
<td>Active Earth Pressure (Level Backfill)</td>
<td>$K_a = 0.26$</td>
<td>$K_a = 0.26$</td>
</tr>
<tr>
<td></td>
<td>Equivalent Fluid Pressure: $K_a*Unit Weight = 33.8 pcf</td>
<td>Total Equivalent Fluid Pressure: $(K_a*Buoyant Unit Weight)+hydrostatic = 81.2 pcf</td>
</tr>
<tr>
<td>At-rest Earth Pressure (Level Backfill)</td>
<td>$K_o = 0.41$</td>
<td>$K_o = 0.41$</td>
</tr>
<tr>
<td></td>
<td>Equivalent Fluid Pressure: $K_o*Unit Weight = 53.3 pcf</td>
<td>Total Equivalent Fluid Pressure: $(K_o*Buoyant Unit Weight)+hydrostatic = 115.7 pcf</td>
</tr>
<tr>
<td>Active Earth Pressure (Sloped Backfill; 3H:1V)</td>
<td>$K_a = 0.41$</td>
<td>$K_a = 0.41$</td>
</tr>
<tr>
<td></td>
<td>Equivalent Fluid Pressure: $K_a*Unit Weight = 53.3 pcf</td>
<td>Total Equivalent Fluid Pressure: $(K_a*Buoyant Unit Weight)+hydrostatic = 115.7 pcf</td>
</tr>
</tbody>
</table>
Soil Parameter | Structural Fill | Submerged Structural Fill
--- | --- | ---
Active Earth Pressure (Sloped Backfill; 2H:1V) | $K_a = 0.50$ Equivalent Fluid Pressure: $K_a \times \text{Unit Weight} = 65.0 \text{pcf}$ | $K_a = 0.50$ Total Equivalent Fluid Pressure: $(K_a \times \text{Buoyant Unit Weight}) + \text{hydrostatic} = 127.4 \text{pcf}$

The values for sloped backfill are based on an infinite slope. For cases where the slope does not extend far above the top of the wall, the lateral pressures can be estimated by assuming a level backfill condition with the top of the wall located at the top of the slope. This can sometimes result in a lower design pressure and is still conservative.

If the abutment or wing walls are to be designed for seismic forces, we recommend that the seismic loading be approximated using a uniform lateral pressure equal to $8.9H$ pounds per square foot (psf) for a level backfill condition, where $H$ is the height (in feet) of the structure. The seismic pressure from a 2H:1V slope can be approximated using a uniform lateral pressure equal to $10.3H$ psf. Intermediate values can be interpolated. This seismic lateral pressure is in addition to the static soil load and any anticipated hydrostatic pressures. This assumes that the wall is free to yield somewhat during a seismic event.

Compaction energy should be limited when backfilling directly behind retaining walls. We recommend use of hand-operated compaction equipment and maximum 6-inch loose lift thickness when compacting fill within about 5 feet of abutment walls.

Retaining wall footings can be designed and constructed as described in “Retaining Wall Footings and Bearing Surface Preparation” section of this report.

### 4.4.2.3. DRAINAGE

In our opinion, standard WSDOT drainage details including weep holes at the base of the walls and a 2-foot thick layer of Gravel Backfill for Walls (WSDOT Standard Specification 9-03.12(2)) are appropriate for providing drainage. However, the water fluctuations in the channel will cause flows both in and out of the culvert head wall drainage, which leads to an increased risk of soil transport and of the drainage layer clogging. The gradation of the drainage fill and the wall backfill should be checked for filter criteria to confirm that fine-grained particles from the abutment backfill will not “wash” into and clog the drainage layer. If the filter criteria cannot be achieved, a non-woven geotextile designed for soil separation can be used to help prevent the drainage layer from clogging.

### 4.4.3. Contractor-Designed Structural Earth Walls (SEWs)

#### 4.4.3.1. GENERAL

We understand smaller retaining walls (up to about 12 feet exposed height) may be used to establish road grades for improvements along 12th Street East and Pacific Highway East. We understand that contractor-designed SEWs, also referred to as Mechanically Stabilized Earth (MSE) Walls, with segmental block facing will be used in these areas. We recommend that we review all contractor submitted retaining wall plans to confirm that our recommendations were interpreted as intended.

#### 4.4.3.2. STRUCTURAL EARTH WALL DESIGN PARAMETERS

We recommend that the geotechnical design parameters provided in Table 7 be used for the design of MSE walls.
TABLE 7. STRUCTURAL EARTH WALLS DESIGN PARAMETERS

<table>
<thead>
<tr>
<th>Soil Properties</th>
<th>Wall Backfill¹</th>
<th>Retained Soil²</th>
<th>Foundation Soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight (pcf)</td>
<td>130</td>
<td>120</td>
<td>54.6</td>
</tr>
<tr>
<td>Friction Angle (deg)</td>
<td>36</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>Cohesion (psf)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes:
1 Assumes Wall Backfill consists of WSDOT Standard Specification 9-03.14(4) “Gravel Borrow for Structural Earth Wall” compacted to at least 95 percent of the MDD determined by ASTM D 1557.
2 Assumes Retained Soil consists of WSDOT Standard Specification 9-03.14(3) “Common Borrow” compacted to at least 95 percent of the MDD determined by ASTM D 1557.

For the Service Limit State, the wall should be designed to accommodate differential settlement of 1 inch per 100 feet of wall length.

For the Extreme Event Limit State, the wall should be designed for a horizontal seismic acceleration coefficient $k_h$ of 0.22g and a vertical seismic acceleration coefficient $k_v$ of 0. This assumes that the wall is free to yield somewhat during a seismic event.

Footings shall be prepared and proportioned as described in “Retaining Wall Footings and Bearing Surface Preparation” section of this report. It is our opinion that the Service Limit States (elastic settlement of 1 and 2 inches) do not apply for SEWs and increased settlement is anticipated due to the greater stress distribution that the wider overlying reinforced backfill zone applies to the bearing surface soils. SEWs are considered flexible structures and can handle some settlement.

4.5. Luminaire and Signal Poles

Signal poles will be constructed at the intersection of 34th Avenue East and Pacific Highway East, the intersection of 34th Avenue East and 12th Street East, and the intersection of 12th Street East and Port of Tacoma Road. Signal pole foundations can be designed using the soil properties and design parameters provided in Tables 8 through 14 below for their respective intersections. WSDOT standard plans may be used where applicable. When standard plans are not applicable the methods described in the WSDOT GDM Chapter 17 “Foundation Design for Signals, Signs, Noise Barriers, Culverts, and Buildings” should be used for design. Allowable lateral bearing pressures listed in the tables below were referenced from the WSDOT GDM Chapter 17. The borings listed for the intersections below refer to the explorations completed as part of our February 2015 study.
### TABLE 8. INTERSECTION OF PORT OF TACOMA ROAD AND 12TH STREET EAST (B-9 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Allowable Lateral Bearing Pressure (psf)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Active Earth Pressure Coefficient (K_a)</th>
<th>Passive Earth Pressure Coefficient (K_p)</th>
<th>LPILE Model Type</th>
<th>p-y Modulus, k (pci)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>4,500</td>
<td>130</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>22 feet to 7 feet</td>
<td>120</td>
<td>36</td>
<td>4,500</td>
<td>120</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Alluvium</td>
<td>7 feet to 0.5 feet</td>
<td>54.6</td>
<td>28</td>
<td>750</td>
<td>54.6</td>
<td>28</td>
<td>0.36</td>
<td>2.77</td>
<td>Sand (Reese)</td>
<td>20</td>
</tr>
</tbody>
</table>

### TABLE 9. INTERSECTION OF 34TH AVENUE EAST AND 12TH STREET EAST (B-8 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Allowable Lateral Bearing Pressure (psf)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Active Earth Pressure Coefficient (K_a)</th>
<th>Passive Earth Pressure Coefficient (K_p)</th>
<th>LPILE Model Type</th>
<th>p-y Modulus, k (pci)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>4,500</td>
<td>130</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>13 feet to 8 feet</td>
<td>120</td>
<td>36</td>
<td>4,500</td>
<td>120</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Alluvium</td>
<td>8 feet to -8.5 feet</td>
<td>54.6</td>
<td>28</td>
<td>800</td>
<td>54.6</td>
<td>28</td>
<td>0.36</td>
<td>2.77</td>
<td>Sand (Reese)</td>
<td>20</td>
</tr>
</tbody>
</table>
### TABLE 10. INTERSECTION OF PACIFIC HIGHWAY EAST AND 34TH AVENUE EAST (B-4 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>WSDOT GDM CH. 17</th>
<th>Soldier Pile Method</th>
<th>LPILE Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unit Weight (pcf)</td>
<td>Friction Angle (deg)</td>
<td>Unit Weight (pcf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allowable Lateral Bearing Pressure (psf)</td>
<td>Active Earth Pressure Coefficient (K_a)</td>
<td>Passive Earth Pressure Coefficient (K_p)</td>
</tr>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>130</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>12 feet to 7 feet</td>
<td>120</td>
<td>32</td>
<td>120</td>
</tr>
<tr>
<td>Alluvium</td>
<td>7 feet to -9.5 feet</td>
<td>54.6</td>
<td>28</td>
<td>54.6</td>
</tr>
</tbody>
</table>

### TABLE 11. INTERSECTION OF PACIFIC HIGHWAY EAST AND 34TH AVENUE EAST (B-3 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>WSDOT GDM CH. 17</th>
<th>Soldier Pile Method</th>
<th>LPILE Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unit Weight (pcf)</td>
<td>Friction Angle (deg)</td>
<td>Unit Weight (pcf)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allowable Lateral Bearing Pressure (psf)</td>
<td>Active Earth Pressure Coefficient (K_a)</td>
<td>Passive Earth Pressure Coefficient (K_p)</td>
</tr>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>130</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>11 feet to 6 feet</td>
<td>120</td>
<td>30</td>
<td>120</td>
</tr>
<tr>
<td>Alluvium-Upper</td>
<td>6 feet to -4 feet</td>
<td>54.6</td>
<td>28</td>
<td>54.6</td>
</tr>
<tr>
<td>Alluvium-Lower</td>
<td>-4 feet to -20.5 feet</td>
<td>54.6</td>
<td>30</td>
<td>54.6</td>
</tr>
</tbody>
</table>

Unit Weight (pcf): pounds per cubic foot (pcf)
Friction Angle (deg): degrees
Active Earth Pressure Coefficient (K_a)
Passive Earth Pressure Coefficient (K_p)
LPILE Model Type: p-y Modulus, k (pci)
### TABLE 12. 34TH AVENUE SOUTHBOUND AT STATION 23+00 (B-3 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Allowable Lateral Bearing Pressure (psf)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Active Earth Pressure Coefficient (K_s)</th>
<th>Passive Earth Pressure Coefficient (K_p)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>LPILE Model Type</th>
<th>p-y Modulus, k (pci)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>4,500</td>
<td>130</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>130</td>
<td>36</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>11 feet to 6 feet</td>
<td>120</td>
<td>30</td>
<td>1,100</td>
<td>120</td>
<td>30</td>
<td>0.33</td>
<td>3.00</td>
<td>120</td>
<td>30</td>
<td>Sand (Reese)</td>
<td>25</td>
</tr>
<tr>
<td>Alluvium-Upper</td>
<td>6 feet to -4 feet</td>
<td>54.6</td>
<td>28</td>
<td>775</td>
<td>54.6</td>
<td>28</td>
<td>0.36</td>
<td>2.77</td>
<td>54.6</td>
<td>28</td>
<td>Sand (Reese)</td>
<td>20</td>
</tr>
<tr>
<td>Alluvium-Lower</td>
<td>-4 feet to -20.5 feet</td>
<td>54.6</td>
<td>30</td>
<td>1,900</td>
<td>54.6</td>
<td>30</td>
<td>0.33</td>
<td>3.00</td>
<td>54.6</td>
<td>30</td>
<td>Sand (Reese)</td>
<td>60</td>
</tr>
</tbody>
</table>

### TABLE 13. 12TH STREET SOUTHBOUND AT STATION 16+40 (B-9 [2015])

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Elevation Range</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Allowable Lateral Bearing Pressure (psf)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>Active Earth Pressure Coefficient (K_s)</th>
<th>Passive Earth Pressure Coefficient (K_p)</th>
<th>Unit Weight (pcf)</th>
<th>Friction Angle (deg)</th>
<th>LPILE Model Type</th>
<th>p-y Modulus, k (pci)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>4,500</td>
<td>130</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>130</td>
<td>36</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Existing Fill</td>
<td>22 feet to 7 feet</td>
<td>120</td>
<td>36</td>
<td>4,500</td>
<td>120</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>120</td>
<td>36</td>
<td>Sand (Reese)</td>
<td>225</td>
</tr>
<tr>
<td>Alluvium</td>
<td>7 feet to 0.5 feet</td>
<td>54.6</td>
<td>28</td>
<td>750</td>
<td>54.6</td>
<td>28</td>
<td>0.36</td>
<td>2.77</td>
<td>54.6</td>
<td>28</td>
<td>Sand (Reese)</td>
<td>20</td>
</tr>
<tr>
<td>Soil Type</td>
<td>Elevation Range</td>
<td>WSDOT GDM CH. 17</td>
<td>Soldier Pile Method</td>
<td>LPILE Parameters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------</td>
<td>------------------</td>
<td>---------------------</td>
<td>------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unit Weight</td>
<td>Friction Angle</td>
<td>Allowable</td>
<td>Active Earth</td>
<td>Passive Earth</td>
<td>Unit Weight</td>
<td>Friction Angle</td>
<td>LPILE Model</td>
<td>p-y Modulus, k</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(pcf)</td>
<td>(deg)</td>
<td>Lateral Bearing</td>
<td>Pressure Coefficient</td>
<td>Pressure Coefficient</td>
<td>(pcf)</td>
<td>(deg)</td>
<td>Type</td>
<td>(pci)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Fill</td>
<td>Varies</td>
<td>130</td>
<td>36</td>
<td>4,500</td>
<td>130</td>
<td>36</td>
<td>0.26</td>
<td>3.85</td>
<td>Sand (Reese)</td>
<td>225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Fill</td>
<td>12 feet to 7</td>
<td>120</td>
<td>30</td>
<td>1,200</td>
<td>120</td>
<td>30</td>
<td>0.33</td>
<td>3.00</td>
<td>Sand (Reese)</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alluvium-Upper</td>
<td>7 feet to -3</td>
<td>54.6</td>
<td>28</td>
<td>775</td>
<td>54.6</td>
<td>28</td>
<td>0.36</td>
<td>2.77</td>
<td>Sand (Reese)</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alluvium-Lower</td>
<td>-3 feet to -21</td>
<td>54.6</td>
<td>30</td>
<td>2,400</td>
<td>54.6</td>
<td>30</td>
<td>0.33</td>
<td>3.00</td>
<td>Sand (Reese)</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If signal poles will be located within geosynthetic retaining walls or SEW retaining walls we recommend that the signal pole foundation be constructed first and that the reinforcing be constructed around the foundation. We recommend that this detailing be based on guidance in FHWA-NHI-10-024 “Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes” Section 5.4.2 “Vertical Obstructions in Reinforced Soil Mass”. This document presents three general approaches for design: (1) fit the soil reinforcement around the obstruction, (2) sever some portion of the reinforcement and increase the strength of adjacent reinforcement, or (3) create a structural frame through the reinforcement that is capable of transferring load around the obstruction. The most practical detail will depend on the type of wall, the location of the wall, and the location of the pole foundation relative to the face of the wall.

4.6. Pavement Design

4.6.1. Subgrade Preparation

The roads constructed or reconstructed as part of this project are either on the alignment of an existing road, as in the case of 34th Avenue East and 12th Street East, or will be constructed on top of a large fill embankment, as in the case of the on and off ramps. Accordingly, we anticipate that all pavement sections (asphalt and crushed rock base) will be constructed on at least 24 inches of compacted granular fill. Prior to placement of crushed rock base, the granular fill should be compacted to a firm and unyielding condition and then proof-rolled with a heavy loaded truck to identify soft or yielding areas.

The depth of the granular fill should be confirmed visually in cut areas or with small test pits in areas that are observed to pump or deflect during a proof roll. A 24-inch thick section of granular fill should be added to the pavement section where roadways are widened or where the existing roadway does not have a sufficient thickness of granular fill. We recommend that a bid item and budget allowance for overexcavation and replacement of unsuitable subgrade material be included in the construction contract documents. As an alternate to overexcavation, the 24-inch thick granular fill section could be replaced with 24 inches of angular rock such as Quarry Spalls (WSDOT Standard Specification 9-13.1(5)) or Permeable Ballast (WSDOT Standard Specification 9-03.9(1)) placed over a biaxial geogrid designed for pavement subgrade reinforcement. This stronger subbase section can be used to create a firm surface for the crushed rock and asphalt pavement section and span over small areas of soft subgrade.

4.6.2. Design Loading

Estimated traffic volumes were provided by BergerABAM for the existing condition (2006) and for the post-construction condition projected to 2040. We converted the daily traffic estimates to Equivalent Single Axle Loads (ESALs). To do this we assumed that every automobile applies an average of 0.0011 ESALs and that the trucks would be carrying standard shipping containers. We used a typical truck weight and a standard distribution of shipping container weights (developed by Port of Long Beach) to calculate an average loading per truck. Based on this method, we estimate that every truck applies an average of 1.0 ESAL. The current data shows that trucks make up 9.4 percent of the total daily traffic, based on guidance from BergerABAM we assumed that this percentage would remain constant.

The information provided for the existing condition and the post-construction 2040 condition suggests an average annual growth rate of about 1.24 percent. We used this growth rate and the provided traffic information to estimate the total number of ESALs that would be applied after a number of years. A summary of our estimates is provided below.
4.6.3. Design Sections

Pavement subgrades and fill should be prepared and placed as previously described. The crushed rock base course should be moisture conditioned near the optimum moisture content and compacted to at least 95 percent of the maximum dry density (MDD) determined in general accordance with ASTM International (ASTM) D 1557 test procedures. An appropriate number of in-place density tests should be conducted on the compacted base course to verify whether adequate compaction has been obtained. Crushed rock base course should conform to applicable provisions of Sections 4-04 and 9-03.9(3) of the WSDOT Standard Specifications. Hot mix asphalt concrete should conform to applicable sections of 5-04, 9-02 and 9-03 of the WSDOT 2016 Standard Specifications.

Design pavement sections for three different traffic loadings or design lives are provided below. We used design methods and inputs based on AASHTO Guide for Design of Pavement Structures, 1993 design methods and WSDOT Pavement Policy, June 2011 for our calculations. Calculation sheets are provided in Appendix E.

Surface raveling caused by sublimation or other deterioration of asphalt binder may reduce the life of the pavements. The life of the pavement can be extended by promptly repairing surface cracking and otherwise preventing water from infiltrating into the subgrade.

### 4.6.3.1. 10.2 MILLION ESAL ASPHALT CONCRETE PAVEMENT
- 8 inches of hot mix asphalt.
- 10 inches of crushed surfacing base course and/or top course compacted as recommended.
- Granular fill subgrade prepared and proof-rolled as previously recommended.

### 4.6.3.2. 23.6 MILLION ESAL ASPHALT CONCRETE PAVEMENT
- 8 inches of hot mix asphalt.
- 14 inches of crushed surfacing base course and/or top course compacted as recommended.
- Granular fill subgrade prepared and proof-rolled as previously recommended.

### 4.6.3.3. 23.6 MILLION ESAL ASPHALT CONCRETE PAVEMENT ALTERNATE
- 10 inches of hot mix asphalt.
- 6 inches of crushed surfacing base course and/or top course compacted as recommended.
- Granular fill subgrade prepared and proof-rolled as previously recommended.

<table>
<thead>
<tr>
<th>Location</th>
<th>25-Year (2017 to 2042) Estimated Design Loading</th>
<th>50-Year (2017 to 2067) Estimated Design Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-5 Port of Tacoma Road Off Ramp</td>
<td>10.2 Million ESALs</td>
<td>23.6 Million ESALs</td>
</tr>
<tr>
<td>34th Avenue East</td>
<td>9.1 Million ESALs</td>
<td>21.1 Million ESALs</td>
</tr>
<tr>
<td>12th Street East</td>
<td>9.8 Million ESALs</td>
<td>22.6 Million ESALs</td>
</tr>
</tbody>
</table>
5.0 LIMITATIONS

We have prepared this report for BergerABAM for the Interstate 5 Port of Tacoma Road Interchange at Fife, Washington. BergerABAM may distribute copies of this report to authorized agents and regulatory agencies as may be required for the project.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. The conclusions, recommendations, and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix E titled “Report Limitations and Guidelines for Use” for additional information pertaining to use of this report.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2015
Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Slope/W Analysis – D-Line Future Abutment Seismic Analysis (Pseudo Static)
Interstate 5 Port of Tacoma Road Interchange Fife, Washington

Figure 5
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Slope/W Analysis – B-Line 33+00
Seismic Analysis (Pseudo Static)
Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

Figure 8
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Figure 9
Slope/W Analysis – B-Line 31+00
Static Analysis
Interstate 5 Port of Tacoma Road Interchange
Fife, Washington
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.
GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Notes:
1. Active earth pressure, traffic and seismic surcharge pressure act over the pile spacing above the base of the excavation.
2. Passive earth pressure acts over 2.5 times the concreted diameter of the vertical element, or the vertical element spacing, whichever is less.
3. This pressure diagram is appropriate for permanent cantilever vertical element walls. If additional surcharge loading (such as from soil stockpiles, excavators, dumptrucks, cranes, or concrete trucks) is anticipated, GeoEngineers should be consulted to provide revised surcharge pressures.

Legend
- H = Height of Excavation, Feet
- D = Vertical Embedment Depth, Feet
- Redesign Groundwater Elevation for Drained Walls/ Passive Resistance Design

Earth Pressure Diagram
Permanent Cantilever Soldier Pile Wall
Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

GeoEngineers

Reduction Factors Applied to Passive Pressures per AASHTO LRFD Bridge Design Specifications 2016

<table>
<thead>
<tr>
<th></th>
<th>Service</th>
<th>Strength</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.0 per 11.5.7</td>
<td>0.75 per Table 11.5.7-1</td>
<td>0.9 per 11.5.8</td>
</tr>
</tbody>
</table>

Not To Scale
APPENDIX A
FIELD EXPLORATION PROGRAM AND LABORATORY TESTING

Field Explorations

Subsurface soil and groundwater conditions at the Interstate 5 Port of Tacoma Road Interchange project site were evaluated by drilling two mud-rotary borings extending to depths ranging from about 81.5 to 101.5 feet below existing grade. These borings were drilled by Holocene Drilling, Inc., of Puyallup, Washington, on February 13 and 14, 2017 using a track-mounted, limited access drilling equipment. Three additional borings were advanced to depths of 21.5 feet below existing grade using hollow-stem auger drilling methods. These borings were drilled by Holocene Drilling, Inc. on May 11 and 12, 2017, using truck-mounted drilling equipment. A groundwater monitoring well was installed with a pressure transducer at each of the later three borings (see Figure A-12). The approximate locations of the explorations are shown in Figure 2.

The borings were continuously monitored by a representative of our firm who examined and classified the soils encountered, obtained representative soil samples observed and prepared a detailed log of each exploration. Representative soil samples were obtained from the borings at selected depths using a 2-inch-inside-diameter split-spoon sampler or a 2.4-inch-inside-diameter split barrel sampler driving into the soil using a 140-pound automatic hammer, free falling a vertical distance of 30 inches. The number of hammer blows required to drive the sampler the final 12 inches, or other indicated distance, is recorded on the boring logs. Shelby tube samples were also obtained at selected depths.

Soil encountered in the explorations was visually classified in general accordance with the classification system described in Figure A-1. Logs of the borings are presented in Figures A-2 through A-6. The boring logs are based on our interpretation of the field and laboratory data and indicate the various types of silt and groundwater conditions encountered. They also indicate the depths at which the soil types or their characteristics change, although the change may actually be gradual. If the change occurred between samples, it was interpreted. The densities noted on the mud-rotary boring logs are based on blow count data obtained in the borings and our judgment based on conditions encountered.

Groundwater conditions were inferred during drilling by observing sample moisture content and are presented on the logs.

Laboratory Testing

Soil samples obtained from the borings were transported to GeoEngineers laboratory. Representative soil samples were selected for laboratory tests to evaluate the pertinent geotechnical engineering characteristics of the site soils and to confirm our field classification. Laboratory test descriptions are provided below.

Primary Testing

MOISTURE CONTENT

The moisture content of selected samples was determined in general accordance with ASTM Test Method D 2216. The results of these tests are presented on the exploration logs at the respective sample depths.
PERCENT FINES DETERMINATION
Selected samples were “washed” through the U.S. No. 200-mesh sieve to estimate the relative percentages of coarse and fine-grained particles in the soil. The tests were conducted in general accordance with ASTM D 1140. The percent passing value represents the percentage by weight of the sample finer than the U.S. No. 200 sieve. These tests were conducted to verify field descriptions and to estimate the fines content for analysis purposes. The test results are shown on the exploration logs at the respective sample depths.

SIEVE ANALYSES
Particle-size analyses were completed on selected samples in general accordance with ASTM Test Method D 6913. This test method covers the quantitative determination of the distribution of particle sizes in soils. Typically, the distribution of particle sizes larger than 75 micrometers (μm) is determined by sieving. The results of the tests were used to verify field soil classifications and determine pertinent engineering characteristics. Figures A-7 through A-9 presents the results of our sieve analyses.

ATTERBERG LIMITS
Atterberg Limit tests were performed on selected samples in general accordance with ASTM Test Method D 4318. This test method determines the liquid limit, plastic limit and plasticity index of soil particles passing the No. 40 sieve. The results of the tests are used to assist in soil classification and determine pertinent engineering characteristics. Results for plastic soils are presented in Figure A-10. The liquid limit and plasticity index are also presented on the exploration logs at the respective sample depths.

Secondary Testing
ONE-DIMENSIONAL CONSOLIDATION
One-dimensional consolidation testing was performed to determine the settlement potential of a selected sample in accordance with ASTM D 2435. The consolidation test determines the magnitude and rate of consolidation of soil restrained laterally and drained axially while subjected to incrementally applied controlled-stress loading. The result of our consolidation test is shown on Figure A-11.
Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Distinct contact between soil strata

Approximate contact between soil strata

Contact between geologic units

---

### SOIL CLASSIFICATION CHART

<table>
<thead>
<tr>
<th>MAJOR DIVISIONS</th>
<th>SYMBOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAVEL AND GRAVELY SOILS</td>
<td>CLEAN GRAVELS</td>
</tr>
<tr>
<td>GRAVELS WITH FINES</td>
<td>GW</td>
</tr>
<tr>
<td>GRAVELS WITH FINES (APPROXIMATE AMOUNT OF FINES)</td>
<td>GP</td>
</tr>
<tr>
<td>SAND AND SANDY SOILS</td>
<td>CLEAN SANDS</td>
</tr>
<tr>
<td>SANDS WITH FINES (APPROXIMATE AMOUNT OF FINES)</td>
<td>SW</td>
</tr>
<tr>
<td>SANDS WITH FINES</td>
<td>SM</td>
</tr>
<tr>
<td>SILTY GRAVELS, GRAVEL - SAND MIXTURES</td>
<td>SC</td>
</tr>
<tr>
<td>SILTY SANDS, SAND - SILT MIXTURES</td>
<td>ML</td>
</tr>
<tr>
<td>INORGANIC SILTS, ROCK FLOUR, CLAYY SILTS WITH SLIGHT PLASTICITY</td>
<td>CL</td>
</tr>
<tr>
<td>INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELY CLAYS, SANDY CLAYS, SILT CLAYS, LEAN CLAYS</td>
<td>OL</td>
</tr>
<tr>
<td>ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY</td>
<td>MH</td>
</tr>
<tr>
<td>ORGANIC SILTS AND ORGANIC SILTY CLAYS OF MEDIUM TO HIGH PLASTICITY</td>
<td>CH</td>
</tr>
<tr>
<td>ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY</td>
<td>OH</td>
</tr>
<tr>
<td>PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS</td>
<td>PT</td>
</tr>
</tbody>
</table>

### ADDITIONAL MATERIAL SYMBOLS

<table>
<thead>
<tr>
<th>SYMBOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
</tr>
<tr>
<td>SS</td>
</tr>
<tr>
<td>MS</td>
</tr>
</tbody>
</table>

### Groundwater Contact
- Measured groundwater level in exploration, well, or piezometer

### Graphic Log Contact
- Distinct contact between soil strata
- Approximate contact between soil strata

### Material Description Contact
- Contact between geologic units

### Laboratory / Field Tests
- %F: Percent fines
- %G: Percent gravel
- AL: Atterberg limits
- CA: Chemical analysis
- CP: Laboratory compaction test
- CS: Consolidation test
- DD: Dry density
- DS: Direct shear
- HA: Hydrometer analysis
- MC: Moisture content
- MD: Moisture content and dry density
- Mohs: Mohs hardness scale
- OC: Organic content
- PM: Permeability or hydraulic conductivity
- PI: Plasticity index
- PP: Pocket penetrometer
- SA: Sieve analysis
- TX: Triaxial compression
- UC: Unconfined compression
- VS: Vane shear

### Sheen Classification
- NS: No Visible Sheen
- SS: Slight Sheen
- MS: Moderate Sheen
- HS: Heavy Sheen

---

### Sampler Symbol Descriptions

- 2.4-inch I.D. split barrel
- Standard Penetration Test (SPT)
- Shelby tube
- Piston
- Direct-Push
- Bulk or grab
- Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

---

**NOTE:** The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.
### FIELD DATA

<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Interval</th>
<th>Blows/foot</th>
<th>Collected Sample</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Graphite Log</th>
<th>MATERIAL DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>1</td>
<td>47</td>
<td>1</td>
<td>GP</td>
<td></td>
<td></td>
<td></td>
<td>Gray fine gravel with sand and trace silt (dense, moist) (fill)</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td>Gray silty fine to medium sand with gravel and occasional organic matter (roots) (loose, moist) (alluvium)</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>3</td>
<td>44</td>
<td>3</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td>Gray fine to medium sand with trace silt (dense, wet)</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>4</td>
<td>22</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to medium dense, no recovery</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>5</td>
<td>37</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to dense, no recovery</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>6</td>
<td>16</td>
<td>6</td>
<td>ML</td>
<td></td>
<td></td>
<td></td>
<td>Gray sandy silt (medium stiff, wet)</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>7</td>
<td>12</td>
<td>7</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td>Gray silty sand (loose, wet)</td>
</tr>
<tr>
<td>35</td>
<td></td>
<td>8</td>
<td>10</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gray silt with organic matter (medium stiff, wet)</td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>9</td>
<td>12</td>
<td>9</td>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td>Gray silt with organic matter (medium stiff, wet)</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>10</td>
<td>8</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gray to brown-gray silty fine sand with occasional organic matter (roots and woody debris) and includes interbedded fine to medium sand layers with silt lenses (medium dense, wet)</td>
</tr>
</tbody>
</table>

### REMARKS
- Drill chatter at 2½ to 4 feet
- Smooth drilling at 4½ feet

### Notes:
- See Figure A-1 for explanation of symbols.
- Coordinates Data Source: Horizontal approximated based on Aerial Imagery, Vertical approximated based on Google Earth

### Log of Boring B-1

**Project:** Interstate 5 Port of Tacoma Road Interchange  
**Project Location:** Fife, Washington  
**Project Number:** 0876-015-03

**Figure A-2**  
**Sheet 1 of 3**
### FIELD DATA

<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Interval</th>
<th>Blows/foot</th>
<th>Collected Sample</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Group/Classification</th>
<th>MATERIAL DESCRIPTION</th>
<th>Moisture Content (%F)</th>
<th>Fines Content (%F)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to loose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>16</td>
<td>8</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ML-gray sandy silt with occasional organic matter (woody debris) (medium stiff, wet)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>15.5</td>
<td>32</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-gM-gray fine to medium sand with silt (dense, wet)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>14.5</td>
<td>29</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to medium dense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td></td>
<td>12</td>
<td>24</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>15.5</td>
<td>29</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to occasional gravel and organic matter (woody debris)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td></td>
<td>12</td>
<td>23</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td>15</td>
<td>42</td>
<td>SP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to dense</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Log of Boring B-1 (continued)

**Project:** Interstate 5 Port of Tacoma Road Interchange  
**Project Location:** Fife, Washington  
**Project Number:** 0876-015-03
# Log of Boring B-1 (continued)

**Project:** Interstate 5 Port of Tacoma Road Interchange  
**Project Location:** Fife, Washington  
**Project Number:** 0876-015-03

<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Interval</th>
<th>Recovered (in)</th>
<th>Blown/foot</th>
<th>Collected Sample</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Group</th>
<th>Classification</th>
<th>Moisture Content (%V)</th>
<th>Fines Content (%)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>80</td>
<td>15.5</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gray silty fine to medium sand (medium dense, wet)</td>
<td>33</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grades to silty fine sand</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**REMARKS**

- [Sheet 3 of 3](#)
Gray fine gravel with sand, trace silt (medium dense, moist) (fill)

Gray fine to coarse gravel with sand and trace silt

Gray silty fine to coarse sand with gravel (medium dense, moist)

Gray fine to coarse gravel with sand and trace silt

Gray silty fine to coarse sand with gravel (dense, moist)

Gray silt with sand and occasional gravel and organic matter (black roots) and includes 1/2 to 1-inch interbedded dark brown silty fine to medium sand layers (stiff, wet) (alluvium)

Dark gray silty fine to medium sand with occasional gravel (dense, wet)

Occasional drill chatter from surface to 27½ feet

Smooth drilling at 27½ feet

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Aerial Imagery, Vertical approximated based on Google Earth
Log of Boring B-2 (continued)

Project: Interstate 5 Port of Tacoma Road Interchange
Project Location: Fife, Washington
Project Number: 0876-015-03

Figure A-3
Sheet 2 of 3
<table>
<thead>
<tr>
<th>Interval</th>
<th>Recovered (in)</th>
<th>Blown Out</th>
<th>Core Sample</th>
<th>Core Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Graphic Log</th>
<th>Group</th>
<th>Classification</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>13</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td></td>
<td>Gray silty fine to medium sand with occasional organic matter (roots) (very dense, wet)</td>
</tr>
<tr>
<td>85</td>
<td>0</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td></td>
<td>No recovery</td>
</tr>
<tr>
<td>90</td>
<td>10.5</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td></td>
<td>Gray fine to medium sand with silt (dense, wet)</td>
</tr>
<tr>
<td>95</td>
<td>14</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Includes occasional gravel and organic matter (roots, woody debris, shells)</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No recovery</td>
</tr>
</tbody>
</table>

**REMARKS**

**Fines Content (%):**

<table>
<thead>
<tr>
<th>Moisture Content (%)</th>
<th>Blows/foot</th>
<th>Recovered (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Moisture Content (%)**
- **Blows/foot**
- **Recovered (in)**

---

**Log of Boring B-2 (continued)**

- **Project:** Interstate 5 Port of Tacoma Road Interchange
- **Project Location:** Fife, Washington
- **Project Number:** 0876-015-03
### FIELD DATA

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Interval</th>
<th>Recovered (in)</th>
<th>Blows/foot</th>
<th>Collected Sample</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Moisture Content (%</th>
<th>Fines Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MATERIAL DESCRIPTION

- ** Approximately 4 inches of dark brown silty fine to medium sand with organic matter (grass, roots) (loose, moist) (topsoil)**
- **Dark brown to gray-brown silty fine to medium sand with occasional organic matter (roots) (very loose, wet) (fill)**
- **Gray silty fine sand with occasional organic matter (roots) (very loose, wet) (alluvium)**
- **Gray silt with occasional sand and organic matter (roots) (very soft, wet)**
- **Dark brown and gray organic silt and includes interbedded fibrous organic matter layers (very soft, wet)**
- **Gray silt with occasional sand and organic matter (roots) and includes interbedded brown organic silt layers (soft, wet)**
- **AL (LL=42; PI=6)**
- **Dark gray silty fine sand with occasional organic matter (roots) (medium dense, wet)**
- **Gray sandy silt with occasional organic matter (roots) (medium stiff, wet)**
- **Gray sandy silt with occasional organic matter (black carbonized staining) (medium stiff, wet)**
- **Gray silty fine sand (medium dense, wet)**

### WELL LOG

- **12-inch Steel flush-mount monument**
- **Concrete surface seal**
- **Bentonite chips 2-inch Schedule 40 PVC well casing**
- **10-20 Colorado silica sand 2-inch Schedule 40 PVC screen, 0.020-inch slot width**

### Notes:
- Auger Data: Approximate 4.25-inch, I.D.
- Coordinates Data Source: Horizontal approximated based on Locational Survey, Vertical approximated based on Locational Survey

### Log of Monitoring Well B-3

- **Project:** Interstate 5 Port of Tacoma Road Interchange
- **Project Location:** Fife, Washington
- **Project Number:** 0876-015-03

---

**Figure A-4**

Sheet 1 of 1
Approximately 6 inches fine to coarse gravel (medium dense, moist) (fill)
Gray sandy silt (medium stiff, wet) (alluvium)

Grades to very soft and includes interbedded gray silt and silty fine to medium sand layers

Gray silty fine sand with occasional organic matter (woody debris) (very soft, wet)

Gray-brown and gray organic silt (fibrous) (soft, wet)

Gray silty fine sand with sand and occasional organic matter (grass, roots and woody debris) (medium stiff, wet)

Gray sand with occasional fine to medium sand pockets and interbedded gray silty fine sand layers (medium stiff, wet)

Gray sandy silt (very soft, wet)

Gray-brown and gray organic silt (fibrous) (soft, wet)

Gray-brown to gray silt with sand and occasional organic matter (grass, roots and woody debris) (medium stiff, wet)

Gray silty fine sand (loose, wet)

Gray silty fine sand with occasional organic matter (grass and roots) (loose, wet)

Gray silty fine sand (medium stiff, wet)

Gray-brown and gray organic silt (fibrous) (soft, wet)

Gray silty fine sand with occasional organic matter (grass and roots) (loose, wet)

12-inch Steel flush-mount monument

Concrete surface seal

2-inch Schedule 40 PVC well casing

10-20 Colorado silica sand

2-inch Schedule 40 PVC screen, 0.020-inch slot width

Notes: Auger Data: Approximately 4.25-inch, I.D.
Log of Monitoring Well B-5

Project: Interstate 5 Port of Tacoma Road Interchange
Project Location: Fife, Washington
Project Number: 0876-015-03

Figure A-6
Sheet 1 of 1

Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Locational Survey, Vertical approximated based on Locational Survey
Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

The grain size analysis results were obtained in general accordance with ASTM D 6913.
INTERSTATE 5 PORT OF TACOMA ROAD INTERCHANGE
FIFE, WASHINGTON

SIEVE ANALYSIS RESULTS

NOTE: THIS REPORT MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF GEOENGINEERS, INC. TEST RESULTS ARE APPLICABLE ONLY TO THE SPECIFIC SAMPLE ON WHICH THEY WERE PERFORMED, AND SHOULD NOT BE INTERPRETED AS REPRESENTATIVE OF ANY OTHER SAMPLES OBTAINED AT OTHER TIMES, DEPTHS OR LOCATIONS, OR GENERATED BY SEPARATE OPERATIONS OR PROCESSES.

THE GRAIN SIZE ANALYSIS RESULTS WERE OBTAINED IN GENERAL ACCORDANCE WITH ASTM D 6913.
Sieve Analysis Results
Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

The grain size analysis results were obtained in general accordance with ASTM D 6913.
Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

The liquid limit and plasticity index were obtained in general accordance with ASTM D 4318.
# Consolidation Test Results

**Interstate 5 Port of Tacoma Road Interchange**  
Fife, Washington

The consolidation test results were obtained in general accordance with ASTM D 2435.

<table>
<thead>
<tr>
<th>Boring Number</th>
<th>Depth (feet)</th>
<th>Soil Description</th>
<th>Initial Moisture (%)</th>
<th>Initial Dry Density (lbs/ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>27</td>
<td>Silt with o.m. (ML)</td>
<td>43.1</td>
<td>75.5</td>
</tr>
</tbody>
</table>

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.
Note:
1. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
APPENDIX B
Phase 2 Borings (2015)
(Appendix A from February 16, 2015 Geotechnical Report)
### Soil Classification Chart

<table>
<thead>
<tr>
<th>Major Divisions</th>
<th>Symbols</th>
<th>Typical Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel and Gravelly Soils</td>
<td>GW</td>
<td>Well-graded Gravels, Gravel - Sand Mixtures</td>
</tr>
<tr>
<td>Gravelly with Fines (Appropriate Amount of Fines)</td>
<td>GP</td>
<td>Poorly-graded Gravels, Gravel - Sand Mixtures</td>
</tr>
<tr>
<td>Sand and Sandy Soils</td>
<td>GM</td>
<td>Silty Gravels, Gravel - Sand - Silt Mixtures</td>
</tr>
<tr>
<td>Sands with Fines (Appropriate Amount of Fines)</td>
<td>GC</td>
<td>Clayey Gravels, Gravel - Sand - Clay Mixtures</td>
</tr>
</tbody>
</table>

#### Additional Material Symbols

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Typical Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>Asphalt Concrete</td>
</tr>
<tr>
<td>CC</td>
<td>Cement Concrete</td>
</tr>
<tr>
<td>CR</td>
<td>Crushed Rock/Quarry Spalls</td>
</tr>
<tr>
<td>TS</td>
<td>Topsoil/Forest Duff/Sod</td>
</tr>
</tbody>
</table>

### Groundwater Contact
- Measured groundwater level in exploration, well, or piezometer
- Measured free product in well or piezometer

### Graphic Log Contact
- Distinct contact between soil strata or geologic units
- Approximate location of soil strata change within a geologic soil unit

### Material Description Contact
- Distinct contact between soil strata or geologic units
- Approximate location of soil strata change within a geologic soil unit

### Laboratory / Field Tests
- %F: Percent fines
- AL: Atterberg limits
- CA: Chemical analysis
- CP: Laboratory compaction test
- CD: Consolidation test
- DS: Direct shear
- HA: Hydrometer analysis
- MC: Moisture content
- MD: Moisture content and dry density
- OC: Organic content
- PM: Permeability or hydraulic conductivity
- PI: Plasticity index
- PP: Pocket penetrometer
- PPM: Parts per million
- SA: Sieve analysis
- TX: Triaxial compression
- UC: Unconfined compression
- VS: Vane shear

### Sheen Classification
- NS: No Visible Sheen
- SS: Slight Sheen
- MS: Moderate Sheen
- HS: Heavy Sheen
- NT: Not Tested

### Key to Exploration Logs

#### Sampler Symbol Descriptions
- 2.4-inch I.D. split barrel
- Standard Penetration Test (SPT)
- Shelby tube
- Piston
- Direct-Push
- Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

Equivalent N<sub>60</sub> blow counts presented in parentheses.

Note: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.
FIELD DATA

Depth (feet)  Elevation (feet)
0  10
5  15
10  20
15  25
20  30
25  35
30
35

Interval  Elevation (feet)
0  10
5  15
10  20
15  25
20  30
25  35
30
35

Sample Name  Testing  Water Level  Group Classification  Moisture Content, %  Dry Density (pcf)

0  10
5  15
10  20
15  25
20  30
25  35
30
35

MATERIAL DESCRIPTION

Dark brown fine to coarse sand with silt and fine to coarse gravel, trace organics (roots) (embankment fill)
Brown fine to medium sand with occasional fine gravel (loose, moist) (embankment fill)

Dark gray silt with fine sand (soft, wet) (alluvium)

Dark gray silt with fine sand and occasional fine gravel (loose, moist) (embankment fill)

Dark gray silt with fine sand and trace organics (wood) (soft, wet) (alluvium)

Dark gray silt with fine sand and trace organics (black rootlets and wood chunks) (stiff, wet) (alluvium)

With trace organics (wood)

REMARKS

%F=5

Note: See Figure A-1 for explanation of symbols.
<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Interval</th>
<th>Borehole (in)</th>
<th>Collected Sample</th>
<th>Water Level</th>
<th>Group Classification</th>
<th>MATERIAL DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>15</td>
<td>11</td>
<td>20a</td>
<td></td>
<td>SP-SM</td>
<td>Dark gray fine sand with silt (dense, wet) (alluvium)</td>
</tr>
<tr>
<td>40</td>
<td>14</td>
<td>27</td>
<td>9</td>
<td></td>
<td>ML</td>
<td>Dark gray silt with occasional fine sand and occasional fine sand lenses (stiff, wet) (alluvium)</td>
</tr>
<tr>
<td>45</td>
<td>18</td>
<td>9</td>
<td>10a 10b 10c</td>
<td>MC</td>
<td>SP-SM</td>
<td>Grades to soft</td>
</tr>
<tr>
<td>50</td>
<td>18</td>
<td>2</td>
<td>11 MC</td>
<td></td>
<td>SP-SM</td>
<td>Dark gray fine to medium sand with silt (dense, wet) (alluvium)</td>
</tr>
<tr>
<td>55</td>
<td>18</td>
<td>34</td>
<td>12</td>
<td></td>
<td>GP-GM</td>
<td>Dark gray fine gravel with fine to coarse sand and silt (dense, wet) (alluvium)</td>
</tr>
<tr>
<td>60</td>
<td>18</td>
<td>39</td>
<td>13a 13b 13c</td>
<td></td>
<td>SP</td>
<td>Dark gray fine to medium sand with trace silt (dense, wet) (alluvium)</td>
</tr>
</tbody>
</table>

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-1 (continued)

Project: Interstate 5 Port of Tacoma Road Interchange
Project Location: Fife, Washington
Project Number: 0876-015-02
### FIELD DATA

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>Interval</th>
<th>Depth (feet)</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Group</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>8 (3)</td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Light brown fine to coarse sand with silt and gravel (loose, moist) (embankment fill)</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>12 (16)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Grades to medium dense</td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>2 (3)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Dark gray silt with fine sand and trace organics (soft, wet) (alluvium)</td>
</tr>
<tr>
<td>15</td>
<td>18</td>
<td>2 (3)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Dark gray silty fine sand (loose, wet) (alluvium)</td>
</tr>
<tr>
<td>20</td>
<td>18</td>
<td>7 (9)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Dark gray silt with fine sand and trace organics (marsh grass) (soft, wet) (alluvium)</td>
</tr>
<tr>
<td>25</td>
<td>15</td>
<td>8 (11)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Grades to medium stiff</td>
</tr>
<tr>
<td>30</td>
<td>14</td>
<td>22 (29)</td>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Grades to stiff sandy silt</td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Dark gray fine sand with silt (medium dense, wet) (alluvium)</td>
</tr>
</tbody>
</table>

### MATERIAL DESCRIPTION

#### LIGHT BROWN FINE TO COARSE SAND WITH SILT AND GRAVEL (LOOSE, MOIST) (EMBANKMENT FILL)
- Moisture Content, %: 40
- Dry Density, (pcf): 72

#### GRADES TO MEDIUM DENSE

#### DARK GRAY SILT WITH FINE SAND AND TRACE ORGANICS (SOFT, WET) (ALLUVIUM)
- Moisture Content, %: 33
- Dry Density, (pcf): 30

#### DARK GRAY SILTY FINE SAND (LOOSE, WET) (ALLUVIUM)
- Moisture Content, %: 29
- Dry Density, (pcf): 29

#### DARK GRAY SILT WITH FINE SAND AND TRACE ORGANICS (MARSH GRASS) (SOFT, WET) (ALLUVIUM)
- Moisture Content, %: 29
- Dry Density, (pcf): 29

#### DARK GRAY SILT WITH OCCASIONAL ORGANICS (WOOD CHUNKS) (STIFF, WET) (ALLUVIUM)
- Moisture Content, %: 29
- Dry Density, (pcf): 29

### REMARKS

- Not Measured

---

**Log of Boring B-2**

**Project:** Interstate 5 Port of Tacoma Road Interchange

**Project Location:** Fife, Washington

**Project Number:** 0876-015-02

---

**Figure A-3**

**Sheet 1 of 2**
### Field Data

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Elevation (feet)</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Moisture Content, %</th>
<th>Dry Density, (pcf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>-25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>-35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>-40</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>-45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>-50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>-55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Log of Boring B-2 (continued)

**Project Location:** Interstate 5 Port of Tacoma Road Interchange, Fife, Washington

**Project Number:** 0876-015-02

**Project:** Interstate 5 Port of Tacoma Road Interchange

**Date:** 2/6/15

**Path:** P:\0\0876015\GINT\087601502.GPJ

**DBTemplate/LibTemplate:** GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

**Remarks:** See Figure A-1 for explanation of symbols.
Brown and gray silty sand with occasional gravel (loose, moist) (fill)

Dark gray silt with fine sand and occasional fine to medium sand lense (soft to very soft, wet) (alluvium)

Dark gray silty fine sand (loose, wet)

Dark gray fine sand with silt and organics (wood) (medium dense, wet) (alluvium)

Dark gray fine to medium sand (medium dense, wet) (alluvium)

Dark gray fine to medium sand with silt (medium dense, wet) (alluvium)

Dark gray silty fine to medium sand (medium dense, wet) (alluvium)

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-3

Project: Interstate 5 Port of Tacoma Road Interchange
Project Location: Fife, Washington
Project Number: 0876-015-02
<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Interval (feet)</th>
<th>Blows/foot (N_60)</th>
<th>Sample Name</th>
<th>Classification</th>
<th>Water Level</th>
<th>Group</th>
<th>Moisture Content, %</th>
<th>Dry Density, (pcf)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8</td>
<td>22 (29)</td>
<td>1</td>
<td>SA</td>
<td>Water</td>
<td>SM</td>
<td>8</td>
<td>%F=28</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>10 (13)</td>
<td>2</td>
<td></td>
<td></td>
<td>SP-SM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>4 (5)</td>
<td>3</td>
<td></td>
<td></td>
<td>ML</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>WOH</td>
<td>4</td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>10</td>
<td>4 (5)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>18</td>
<td>9 (12)</td>
<td>7</td>
<td>Grades to</td>
<td></td>
<td></td>
<td>18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** 4" I.D. Hollow Stem Auger

**Field Data**

- **Start Date:** 10/13/2014
- **End Date:** 10/13/2014
- **Total Depth:** 21.5 ft

**MATERIAL DESCRIPTION**

- Dark brown silty fine to coarse sand with fine to coarse gravel (medium dense, moist) (fill)
- Dark gray fine sand with silt and occasional fine sand lenses (loose, wet)
- Dark gray sandy silt, trace organics (roots) (very soft, wet)
- Grades to medium dense

**Log of Boring B-4**

**Project:** Interstate 5 Port of Tacoma Road Interchange

**Project Location:** Fife, Washington

**Project Number:** 0876-015-02
### MATERIAL DESCRIPTION

<table>
<thead>
<tr>
<th>Interval</th>
<th>Blows/foot (N₆₀)</th>
<th>Water Level</th>
<th>Group Classification</th>
<th>Moisture Content, %</th>
<th>Dry Density, (pcf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6</td>
<td>17 (24)</td>
<td></td>
<td>AC</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6 - 12</td>
<td>3 (4)</td>
<td></td>
<td>CR</td>
<td>3 to 4 inches asphalt concrete</td>
<td>4</td>
</tr>
<tr>
<td>12 - 18</td>
<td>1 (1)</td>
<td></td>
<td>SP</td>
<td>3 to 4 inches base course</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ML</td>
<td>Dark brown fine to coarse sand with fine to coarse gravel (medium dense, moist (fill))</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Dark gray silt with fine sand (soft, wet) (alluvium)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SM</td>
<td>Dark gray fine to medium sand with silt (very loose, wet) (alluvium)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dark gray silty fine sand (very loose, wet) (alluvium)</td>
<td>4</td>
</tr>
</tbody>
</table>

### REMARKS

Note: See Figure A-1 for explanation of symbols.
<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Recovery (in)</th>
<th>Blast (Blows/foot) (N&lt;sub&gt;60&lt;/sub&gt;)</th>
<th>Water Test</th>
<th>Sample Name</th>
<th>Moisture Content (%)</th>
<th>Dry Density (pcf)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>3 (4)</td>
<td>TS</td>
<td></td>
<td>Topsoil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>8 (11)</td>
<td>SP-SM</td>
<td></td>
<td>Brown fine sand with silt (loose, moist) (fill)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>10 (13)</td>
<td>Grades to medium dense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>7 (9)</td>
<td>SP-SM</td>
<td></td>
<td>Dark gray fine sand with silt (loose, wet) (alluvium)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: See Figure A-1 for explanation of symbols.

**FIELD DATA**

- **Elevation (feet)**
- **Depth (feet)**
- **Recovery (in)**
- **Blast (Blows/foot) (N<sub>60</sub>)**
- **Water Test**
- **Sample Name**
- **Moisture Content (%)**
- **Dry Density (pcf)**

**MATERIAL DESCRIPTION**

- **Group Classification**
- **TS**
- **SP-SM**

**REMARKS**

**Log of Boring B-6**

- **Project:** Interstate 5 Port of Tacoma Road Interchange
- **Project Location:** Fife, Washington
- **Project Number:** 0876-015-02
**FIELD DATA**

<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Blows/foot (N)</th>
<th>Sample Name</th>
<th>Water Level</th>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>33 (44)</td>
<td>1</td>
<td>5a</td>
<td>3 to 4 inches asphalt concrete</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>4 (5)</td>
<td>2a</td>
<td>2b</td>
<td>Brown fine to coarse gravel with silt and fine to coarse sand (dense, moist) (fill)</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>3 (4)</td>
<td>3a</td>
<td>3b</td>
<td>Dark gray silt with fine sand (medium stiff, moist) (alluvium)</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>2 (3)</td>
<td>4a</td>
<td>4b</td>
<td>Dark gray fine to medium sand with silt (very loose to loose, wet) (alluvium)</td>
</tr>
</tbody>
</table>

**REMARKS**

- Moisture Content, %: 3
- %F=6

---

**Log of Boring B-7**

**Project:** Interstate 5 Port of Tacoma Road Interchange

**Project Location:** Fife, Washington

**Project Number:** 0876-015-02

---

*Note: See Figure A-1 for explanation of symbols.*
### FIELD DATA

<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Blows/foot (N)</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Group</th>
<th>Classification</th>
<th>Water Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0-12</td>
<td>45 (60)</td>
<td>1</td>
<td>5A</td>
<td>AC</td>
<td>3 to 4 inches asphalt concrete</td>
<td>Moisture Content, %</td>
</tr>
<tr>
<td>5</td>
<td>5-10</td>
<td>4 (5)</td>
<td>3a</td>
<td>3a</td>
<td>SP-SM</td>
<td>Brown fine to coarse gravel with silt and fine to coarse sand (very dense, moist) (fill)</td>
<td>Dry Density, (pcf)</td>
</tr>
<tr>
<td>10</td>
<td>10-18</td>
<td>2 (3)</td>
<td>4a</td>
<td>4a</td>
<td>SM</td>
<td>Brown fine to medium sand with silt and occasional fine to coarse gravel (loose, moist) (fill)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15-20</td>
<td>2 (3)</td>
<td>5a</td>
<td>5a</td>
<td>ML</td>
<td>Dark gray fine sand with silt (loose, wet) (alluvium)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>20-28</td>
<td>28 (37)</td>
<td>7</td>
<td></td>
<td></td>
<td>Dark gray sandy silt (soft, wet) (alluvium)</td>
<td></td>
</tr>
</tbody>
</table>

**REMARKS**

Note: See Figure A-1 for explanation of symbols.

---

**Log of Boring B-8**

**Project:** Interstate 5 Port of Tacoma Road Interchange  
**Project Location:** Fife, Washington  
**Project Number:** 0876-015-02
### FIELD DATA

```
<table>
<thead>
<tr>
<th>Elevation (feet)</th>
<th>Depth (feet)</th>
<th>Recovered (in)</th>
<th>Blows/foot (N60)</th>
<th>Sample Name</th>
<th>Testing</th>
<th>Water Level</th>
<th>Group</th>
<th>Classification</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>11</td>
<td>14 (19)</td>
<td>1</td>
<td></td>
<td></td>
<td>GW</td>
<td>Brown fine to coarse gravel with fine to coarse sand (medium dense to very dense, moist) (fill)</td>
<td>%F=4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>9</td>
<td>53 (71)</td>
<td>2</td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Brown-orange fine to coarse sand with silt and fine to coarse gravel (very dense, moist) (fill)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>10</td>
<td>80 (60)</td>
<td>3</td>
<td></td>
<td></td>
<td>GP-GM</td>
<td>Dark gray fine to coarse gravel with fine to coarse sand and silt (medium dense, moist) (fill)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>15</td>
<td>45 (60)</td>
<td>4</td>
<td></td>
<td></td>
<td>SP-SM</td>
<td>Dark gray fine sand with silt (very loose, wet) (alluvium)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>15</td>
<td>1 (17)</td>
<td>5</td>
<td></td>
<td></td>
<td>SM</td>
<td>Dark gray silty fine sand with organics (roots) (very loose, wet) (alluvium)</td>
<td></td>
</tr>
</tbody>
</table>
```

### MATERIAL DESCRIPTION

- **GW**: Brown fine to coarse gravel with fine to coarse sand (medium dense to very dense, moist) (fill)
- **SP-SM**: Brown-orange fine to coarse sand with silt and fine to coarse gravel (very dense, moist) (fill)
- **GP-GM**: Dark gray fine to coarse gravel with fine to coarse sand and silt (medium dense, moist) (fill)
- **SP-SM**: Dark gray fine sand with silt (very loose, wet) (alluvium)
- **SM**: Dark gray silty fine sand with organics (roots) (very loose, wet) (alluvium)

### REMARKS

- %F=4

Note: See Figure A-1 for explanation of symbols.
Geology of Port of Tacoma, Hart Crowser Associates, Inc.
completed 1983
GEOLOGIC CROSS SECTION V-V'

- **Fill**
- **Upper Silt (Zone I)**
- **Middle Sand (Zone II)**
- **Lower Silt (Zone III)**
- **Deep Sand (Zone IV)**
- **Glacial Deposits**

Contacts: Dashed where inferred, queried where speculated
Geotechnical Engineering Report, Pacific Highway East
Improvements, Port of Tacoma Road to Alexander Avenue
Fife, Washington
AMEC Earth and Environmental, Inc.,
completed April 2003
<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Soil Description</th>
<th>Soil Sample</th>
<th>Penetration Resistance</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Medium-dense, damp, dark brown, gravelly SAND with some silt (Fill)</td>
<td>S-1</td>
<td>N/E</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>becomes loose</td>
<td>S-2</td>
<td>▲</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Soft, moist, brown, fine sandy SILT (Overbank Alluvium)</td>
<td>S-3</td>
<td>▲</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>Boring terminated at approximately 6.5 feet</td>
<td></td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**LEGEND**
- 2.00-inch OD split-spoon sampler
- N/E: No groundwater encountered
- Grade Size Analysis

**Amec**
11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

**Drilling Method:** 3.75 I.D. HSA  
**Hammer type:** Cathead  
**Date drilled:** November 26, 2002  
**Logged By:** FER
Soil Description

Location: Station 30+10, North shoulder
Approximate ground surface elevation: 20 feet

4-inches sod and topsoil
- Medium-dense, damp, brown, silty, gravely SAND (Fill)

Loose, damp, light-brown with mottling, silty fine SAND (Overbank Alluvium)

becomes moist

Boring terminated at approximately 6.5 feet
PROJECT: Pacific Highway E Improvements

Location: Stallion 32+50, North shoulder
Approximate ground surface elevation: 17 feet

Soil Description:
- Sod
- Medium-dense, damp to moist, brown, silty gravelly SAND (Fill)
- Loose, damp, gray and mottled, silty fine SAND with trace gravel (Overbank Alluvium)

Boring terminated at approximately 4 feet due to potential utility conflict.
**Soil Description**

**Location:** Station 21+20, North shoulder  
**Approximate ground surface elevation:** 15 feet

<table>
<thead>
<tr>
<th>Depth (feet)</th>
<th>Soil Description</th>
<th>Sample Type</th>
<th>Sample Number</th>
<th>GROUND WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Medium-dense, damp, gray-brown, gravelly SAND with trace to some silt (Fill)</td>
<td>30</td>
<td>S-1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>becomes moist</td>
<td>20</td>
<td>S-2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Loose, damp to moist, dark brown, SAND with some to trace silt (Alluvium)</td>
<td>50</td>
<td>S-3</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Very loose, wet, gray-brown and mottled, silty fine SAND (Overbank Alluvium)</td>
<td>40</td>
<td>S-4</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Soft, wet, gray, fine sandy Silt (Overbank Alluvium)</td>
<td>75</td>
<td>S-5</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Medium-dense, wet, gray, silty fine SAND (Overbank Alluvium)</td>
<td>40</td>
<td>S-6</td>
<td></td>
</tr>
</tbody>
</table>

Boring terminated at approximately 19.5 feet

**Legend**

- 2.00-inch OD split-spoon sampler
- Groundwater level at time of drilling

**Drilling Method:** 3.75 I.D. HSA  
**Hammer type:** Cathead  
**Date drilled:** November 26, 2002  
**Logged By:** FER

**Note:** The diagram and table provide detailed information about the soil layers encountered during the drilling process, including their depth, type, and characteristics. The legend explains the symbols used in the diagram.
PROJECT: Pacific Highway E Improvements

Soil Description
Station 18+50, SE corner of Pac Hwy & Port
Location: of Tacoma
Approximate ground surface elevation: 14 feet

Depth (feet)

0
5
10
15
20
25
30

Legend

DEPTH
0-5
5-10
10-15
15-20
20-25
25-30

Soil Description
Soft, moist, brown and mottled, sandy SILT with some gravel (Fill)

S-1

S-2

S-3

S-4

S-5

S-6

S-7

S-8

S-9

Boring terminated at approximately 25.5 feet

LEGEND

2.00-Inch ID
split-spoon sampler

Groundwater level at time of drilling

Penetration Resistance

Sample Number

GROUND

Sample Type
Standard
Blows per foot

- 0
- 10
- 20
- 30
- 40
- 50

Other
Blows over inches

TESTING

Drilling Method: 3.75 I.D. HSA
Hammer type: Cathead
Date drilled: November 26, 2002
Logged By: FER

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913
Soil Description

Location: Station 22+35, South shoulder
Approximate ground surface elevation: 15 feet

- Medium-dense, damp to moist, brown sandy GRAVEL with some silt (Fill)

- Loose, damp to moist, brown SAND with some gravel and silt (Fill)

- Very loose, damp to moist, light brown and mottled, silty SAND (Overbank Alluvium)

Boring terminated at approximately 6.5 feet
PROJECT: Pacific Highway E Improvements

W.O. 2-91M-14565-0 BORING No. B-7

Soil Description

Location: Station 31+60, South shoulder
Approximate ground surface elevation: 17 feet

Depth (feet)

0

Dense, moist, gray-brown sandy GRAVEL with some silt (Fill)

10

Soft, moist, gray-brown and mottled, fine sandy SILT (Overbank Alluvium)

15

Loose, moist to wet, gray-brown and mottled, silty fine SAND (Overbank Alluvium)

Boring terminated at approximately 6.5 feet

LEGEND

3.00-Inch OD
Split-spoon sampler
N/E No groundwater encountered

Grain Size Analysis

Drilling Method: 3.75 I.D. HSA
Hammer type: Cathead
Date drilled: November 26, 2002
Logged By: FER

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913
PROJECT: Pacific Highway E Improvements

W.O. 2-91M-14565-0  BORING No. B-8

Soil Description

Location: Station 39+90, South shoulder
Approximate ground surface elevation: 19 feet

1. Sod

Medium stiff, damp, light gray with motting, sandy SILT with trace gravel (Overbank Alluvium)

2. S2

Loose, damp, light gray with motting, silty fine SAND with scattered organics (Overbank Alluvium)

3. S3

Boring terminated at approximately 6.5 feet

LEGEND

- 2.00-inch OD split-spoon sampler
- NE: No groundwater encountered

Drilling Method: 3.75 I.D. HSA  Hammer type: Cathead  Date drilled: November 26, 2002  Logged By: FER

11335 N.E. 122nd Way Suite 100  Kirkland, Washington 98034-6913
Geotechnical Report, SR 5/Port of Tacoma Road, Southbound
On-Ramp Widening Project
Fife, Washington
Landau Associates
completed May 2007
B-1

SAMPLE DATA

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Elevation (ft)</th>
<th>Sample Number &amp; Interval</th>
<th>Sampler Type</th>
<th>Blown/Foot</th>
<th>Test Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>S-1</td>
<td>b2</td>
<td>45</td>
<td>W = 13</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>S-2</td>
<td>b2</td>
<td>12</td>
<td>W = 15</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>S-3</td>
<td>b2</td>
<td>21</td>
<td>W = 23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-200 = 14</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>S-4</td>
<td>b2</td>
<td>14</td>
<td>W = 27</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-200 = 11</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>S-5</td>
<td>b2</td>
<td>23</td>
<td>W = 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-200 = 4</td>
</tr>
</tbody>
</table>

SOIL PROFILE

<table>
<thead>
<tr>
<th>Graphic Symbol</th>
<th>USCS Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>SM</td>
<td>Brown, gravelly, fine to coarse SAND with silt (dense, moist to wet) (FILL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>becomes with gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>becomes gray, medium dense</td>
</tr>
<tr>
<td>SP</td>
<td>SM</td>
<td>Dark gray, fine to medium SAND with silt (medium dense, wet) (ALLUVIUM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dark gray, fine to medium SAND (medium dense, wet)</td>
</tr>
</tbody>
</table>

Groundwater

<table>
<thead>
<tr>
<th>Moisture Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

- SPT N-Value  
  - 10  | 20  | 30  | 40  |

- Fines Content (%)  
  - 10  | 20  | 30  | 40  |

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES
Port of Tacoma Road to I-5 Southbound Ramp Widening File, Washington

Log of Boring B-1

Figure A-2

Boring Completed 01/22/07
Total Depth of Boring = 19.0 ft.
### B-2

#### SAMPLE DATA

<table>
<thead>
<tr>
<th>Sample Number &amp; Interval</th>
<th>Sample Type</th>
<th>Blown Foot</th>
<th>Test Data</th>
<th>Graphic Symbol</th>
<th>USCS Symbol</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1</td>
<td>b2</td>
<td>51</td>
<td>W = 9</td>
<td>30/40</td>
<td>GM</td>
<td>Gray-brown, silty, very sandy GRAVEL (very dense, moist to wet) (FILL)</td>
</tr>
<tr>
<td>S-2</td>
<td>b2</td>
<td>50/6</td>
<td>W = 12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-3</td>
<td>b2</td>
<td>31</td>
<td>W = 26</td>
<td></td>
<td>ML</td>
<td>Gray, sandy SILT with organics (hard, well)  ALLOTTUM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>becomes stiff</td>
</tr>
<tr>
<td>S-4</td>
<td>b2</td>
<td>14</td>
<td>W = 32</td>
<td></td>
<td>LM</td>
<td>Gray, silty, fine to medium SAND (dense, well)</td>
</tr>
<tr>
<td>S-5</td>
<td>b2</td>
<td>36</td>
<td>W = 24</td>
<td>-200 = 15</td>
<td>SM</td>
<td></td>
</tr>
</tbody>
</table>

**Groundwater**
- Moisture Content (%)
  - Drilling Method: Hollow-stem Auger
  - Ground Elevation (ft): -14
  - Drilled By: Holocene Drilling
  - Logged By: KMH Date: 01/22/07
  - 

**SPT N-Value**
- Fines Content (%)
  - X

**Notes:**
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

**Figure A-3**

PORT OF TACOMA ROAD TO I-5
Southbound Ramp Widening
Fife, Washington

Log of Boring B-2
# Sample Data

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Elevation (ft)</th>
<th>Sample Number &amp; Interval</th>
<th>Sampler Type</th>
<th>Blower/Foot</th>
<th>Test Date</th>
<th>Graphic Symbol</th>
<th>USCS Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>S-1</td>
<td>b2</td>
<td>46</td>
<td>W = 7</td>
<td>GM</td>
<td>gravel, silty, sandy gravel (dense, moist) (FILL)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>S-2</td>
<td>b2</td>
<td>34</td>
<td>W = 7</td>
<td></td>
<td>becomes very sandy</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>S-3</td>
<td>b2</td>
<td>29</td>
<td>W = 7</td>
<td>GM</td>
<td>gravel, silty, gravelly, fine to coarse sand (medium dense, moist-wet) (ALLUVIUM)</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>S-4</td>
<td>b2</td>
<td>20</td>
<td>W = 14</td>
<td></td>
<td>grades wat</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Boring Completed 01/22/07**
**Total Depth of Boring = 19.0 ft**

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

**LANDAU Associates**

Port of Tacoma Road to I-5
Southbound Ramp Widening
Fife, Washington

Log of Boring B-3

Figure A-4
WSDOT Borings – Portland Avenue to Port of Tacoma Road Project
# SOIL BORING LOG

**PROJECT:** Tacoma HOV  
**LOCATION:** 22nd St E. (761445.4 N, 11706432.5 E, South State Plane)  
**ELEVATION:** 10.9 feet NAVD88  
**DRILLING CONTRACTOR:** Gregory Drilling Inc. L. Gregory - Lic. #4079  
**ORISKING METHOD AND EQUIPMENT:** Open-hole mud rotary, 140 lb auto hammer with 30” drop, CME 800 track-mounted rig  
**WATER LEVELS:** See graph in Appendix C  
**START:** 6/8/2008  
**END:** 5/9/2008  
**LOGGER:** M. Thompson

<table>
<thead>
<tr>
<th>DEPTH BELOW GROUND SURFACE (ft)</th>
<th>STANDARD PENETRATION TEST RESULTS</th>
<th>SOIL DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0</td>
<td>5.0</td>
<td>Surface is long grass.</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>0.3 SS-1</td>
<td>SILT (ML), medium brown, moist, very soft, low plasticity, estimated less than 10% sand, organics (grass, root matter).</td>
<td></td>
</tr>
</tbody>
</table>
| 10.0                             | 1.6 ST-2                           | Top: SILT (ML), same as above.  
Bottom: POORLY GRADED SAND WITH SILT (SP-SM), dark gray and black with white and red, wet, predominantly fine to medium sand, estimated 5-15% fines. |          |
| 15.0                             | 1.2 SS-3                           | 0.4” SILTY SAND (SM), similar to above except, estimated 15-30% fines.  
4-16” SILT (ML), brownish gray, wet, very soft, non-plastic, fine sand. |          |
| 20.0                             | 1.3 ST-4                           | Top: SANDY Silt (ML), medium brownish gray, moist to wet, non-plastic, estimated 15-30% sand.  
Bottom: SILTY SAND (SM), dark brownish gray, wet, predominantly fine to medium sand, estimated 10-25% fines. |          |
| 25.0                             | 1.7 ST-5                           | POORLY GRADED SAND WITH SILTSILTY SAND (SP-SP/SM), similar to above except less sand in bottom of tube than top of tube. |          |
| 30.0                             |                                   |                  |          |

**SCS INDEX TEST RESULTS**  
Gravel = 0.0%  
P200 = 91.3%  
Sand = 8.7%  
M.C. = 39.0%

Start drilling at 10:00 with hollow stem auger.  
SS-1 @ 16:10  
Sampler penetrated under weight of hammer  
Switch to open-hole mud rotary.  
SST-3 (4-14") Index Test Results

### SOIL BORING LOG

**PROJECT NUMBER:** 341541.PB.01.09.02  
**BORING NUMBER:** WR13-H-2p-08  
**SHEET 2 OF 3**

**PROJECT:** Tacoma HOV  
**LOCATION:** 29th SLE (701445.4 N, 1170412.5 E, South State Plano)  
**ELEVATION:** 10.6 feet (NAV28)  
**DRILLING CONTRACTOR:** Gregory Drilling Inc. L. Gregory - Lic. #1973  
**DRILLING METHOD AND EQUIPMENT:** Open-hold mud rotary, 140-lb auto hammer with 30-lb drop, CME 850 track-mounted rig  
**WATER LEVELS:** See graph in Appendix C  
**START:** 5/26/2008  
**END:** 6/9/2008  
**LOGGER:** M. Thompson

<table>
<thead>
<tr>
<th>INTERVAL (ft)</th>
<th>SOIL NAME (USCS GROUP SYMBOL)</th>
<th>COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY</th>
<th>DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION</th>
</tr>
</thead>
</table>
| 30.0          | POORLY GRADED SAND WITH SILT (SP-SM) | Dark gray with red and white, moist, medium dense, predominantly fine to medium sand. | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
7-8-11 (20)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 31.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
7-8-11 (20)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 35.0          | POORLY GRADED SAND WITH SILT (SP-SM) | Similar to above except, wet, dense.  
**SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
15-18-16 (34)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 36.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
14-16-18 (24)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 40.0          | POORLY GRADED SAND WITH SILT (SP-SM) | Same as above.  
**SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 41.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 45.0          | SILT (ML) | Medium brownish gray, moist to wet, very soft, non-plastic, estimated 5-10% fine to medium sand, sand in top 2".  
**SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 46.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 47.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 50.0          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
ollo = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 55.0          | POORLY GRADED SAND WITH SILT (SP-SM) | Dark gray with white and red, wet, medium dense, predominantly fine to coarse sand.  
**SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
9-15-13 (28)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 56.5          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
9-15-13 (28)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |
| 60.0          |                                |                                                                                         | **SOIL DESCRIPTION**  
**STANDARD PENETRATION TEST RESULTS**  
9-15-13 (28)  
**COMMENTS**  
Gravel = 0.1%  
P200 = 10.6%  
Sand = 62.3%  
M.C. = 20.2% |

**COMMENTS:** Sampler penetrated under weight of hammer.
# SOIL BORING LOG

**PROJECT:** Tacoma HOV  
**LOCATION:** 20th St E. (791445.4 N, 1170432.5 E, South State Plane)  
**ELEVATION:** 10.9 feet (NAVD88)  
**DRILLING CONTRACTOR:** Gregory Drilling Inc.  
**DRILLING METHOD AND EQUIPMENT:** Open-hole mud rotary, 149 lb. auto hammer with 30" drops, CME 850 track-mounted rig  
**WATER LEVELS:** See graph in Appendix C  
**START:** 5/6/2008  
**END:** 5/9/2008  
**LOGGER:** M. Thompson  

<table>
<thead>
<tr>
<th>INTERVAL below GROUND SURFACE (ft)</th>
<th>SOIL DESCRIPTION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.0</td>
<td>POORLY GRADED SAND WITH SILT (SP-SM)</td>
<td>SS-12 @ 9:15</td>
</tr>
<tr>
<td>61.5</td>
<td>same as above.</td>
<td>Bottom of hole at 61.5 ft below ground surface.</td>
</tr>
</tbody>
</table>

**DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION**

- **Phase Installation:**
  - Start Card No. RCO2279
  - Sta., Offset
  - Pierce County
  - SE 1/4 of NW 1/4 S11 R3E T20N
- **Well No.:** BAA 824
- **0-2' Flush mount**
- **2-4' Bentonite chips**
- **45-60' Colorado Sand**
- **55-60' 1" schedule 40 factory slotted PVC pipe**
### Soil Boring Log

**Project:** Tacoma HOV  
**Location:** 20th St. E., (701448.4 N, 1170240.4 E, South State Plane)  
**Elevation:** 10.7 feet (NAVD88)  
**Drilling Contractor:** Gregory Drilling Inc., L. Gregory - Lp, #1973  
**Drilling Method and Equipment:** Open-hole mud rotary, 140 lb auto hammer with 30' drop, CME 860 track-mounted rig  
**Water Levels:** See graph in Appendix C  
**Start:** 5/12/2008  
**End:** 5/12/2008  
**Logger:** M. Thompson

<table>
<thead>
<tr>
<th>Depth Below Ground Surface (ft)</th>
<th>Standard Penetration Test Results</th>
<th>Soil Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVAL (ft)</td>
<td>RECOVERY (%)</td>
<td>SOIL NAME (USCS GROUP SYMBOL)</td>
<td>COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY</td>
</tr>
<tr>
<td>5</td>
<td>5.0</td>
<td>1.5 SS-1</td>
<td>1-1-0</td>
</tr>
<tr>
<td></td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10.0</td>
<td>1.0 SS-2</td>
<td>3-1-1</td>
</tr>
<tr>
<td></td>
<td>11.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>15.0</td>
<td>0.8 SS-3</td>
<td>3-2-6</td>
</tr>
</tbody>
</table>
| | 16.5 | | | SS-2 @ 8:00  
Gravel = 0.0%  
P200 = 12.1%  
Sand = 67.9%  
M.C. = 30.0% |
| 20 | 20.0 | 1.2 SS-4 | 3-6-8 | SILT WITH SAND (ML), gray with olive, moist, firm, non-plastic, estimated 10-25% fine sand, trace of organics. |
| | 21.5 | | | SS-4 Index Test Results  
Gravel = 0.0%  
P200 = 73.0%  
Sand = 27.0%  
M.C. = 30.0% |
| 25 | 25.0 | 1.2 SS-5 | 3-2-1 | SILT, ML, gray, moist to wet, soft, non-plastic, fine sand, bottom 3' brown silt with organics. |
| | 26.5 | | | SS-5 Index Test Results  
P200 = 96.0%  
M.C. = 44.0% |
## Soil Boring Log

**Project Number:** 341541.PB.01.09.02  
**Boring Number:** WR13-H-1p-08  
**Sheet:** 2 of 3

**Location:** 20th St E. (79146.4 N, 1170240.4 E, South State Plane)

**Elevation:** 10.7 feet (NAVD88)

**Drilling Contractor:** Gregory Drilling Inc., L. Gregory, Lic. #1973

**Drilling Method and Equipment:** Open-hole mud rotary, 149 lb auto hammer with 30° drop, CME 850 track-mounted rig

**Water Levels:** See graph in Appendix C

**Start:** 5/12/2008  
**End:** 5/12/2008  
**Logger:** M. Thompson

<table>
<thead>
<tr>
<th>Depth Below Ground Surface (ft)</th>
<th>Recovery (%)</th>
<th>Penetration Test Results</th>
<th>Soil Name (USCS Group Symbol)</th>
<th>Color, Moisture Content, Relative Density or Consistency, Soil Structure, Mineralogy</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.0</td>
<td>1.7</td>
<td>SS-6</td>
<td>0-0-0 (0)</td>
<td>Silt with sand (ML), medium brownish gray, wet, very soft, non-plastic, estimated less than 15% fine sand, high organic content.</td>
<td></td>
</tr>
<tr>
<td>31.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.0</td>
<td>1.5</td>
<td>SS-7</td>
<td>1-2-6 (3)</td>
<td>Silt with sand (ML), medium brownish gray, soft, non-plastic, estimated 10-20% fine to medium sand, trace of organics, poorly graded sand from 16-16&quot;.</td>
<td>SS-7 @ 8:30</td>
</tr>
<tr>
<td>40.0</td>
<td>1.2</td>
<td>SS-8</td>
<td>7-11-12 (3)</td>
<td>Poorly graded sand with silt (SP-SM), dark brownish gray, wet, medium dense, predominantly fine to medium sand, estimated 5-15% non-plastic fines, grains more course from 10-14&quot;.</td>
<td></td>
</tr>
</tbody>
</table>
| 45.0                           | 1.3          | SS-9                     | 12-8-10 (18)                  | Poorly graded sand with silt, SP-SM, dark gray with white and red, wet, medium dense, predominantly fine to coarse sand. | SS-9 Index Test Results  
  Gravel = 0.4%  
  P200 = 8.7%  
  Sand = 90.3%  
  M.C. = 26.0% |
<p>| 50.0                           | 0.9          | SS-10                    | 8-10-13 (23)                  | Poorly graded sand with silt (SP-SM), same as above. |          |
| 55.0                           | 1.4          | SS-11                    | 11-13-20 (35)                 | Poorly graded sand with silt (SP-SM), similar to above except, dense. |          |
| 60.0                           |              |                          |                                |                                                                                  |          |</p>
<table>
<thead>
<tr>
<th>INTERVAL (ft)</th>
<th>RECOVERY (%)</th>
<th>STANDARD PENETRATION TEST RESULTS</th>
<th>SOIL NAME (IACS GROUP SYMBOL)</th>
<th>COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY</th>
<th>DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION</th>
<th>COMMENTS</th>
</tr>
</thead>
</table>
| 00.0         | 1.2          | SS-12                             | 3-3-3                          | SILTY SAND, SM, medium gray, wet, loose, fine sand, non-plastic.                 | SS-12 @ 0:15
| 61.5         | (6)          |                                   |                                |                                                                                  | P200 = 430% M.C. = 31.0%                                                        | Bottom of hole at 61.5 ft below ground surface. |

**PROJECT:** Tacoma HOV  
**LOCATION:** 20th SLE, (791446.4 N, 1170240.4 W, South State Plane)

**ELEVATION:** 19.7 feet (NAVD88)  
**DRILLING CONTRACTOR:** Gregory Drilling Inc, L. Gregory - Lic. #1973

**DRILLING METHOD AND EQUIPMENT:** Open-hole mud rotary, 140 ft auto hammer with 30" drop, CME 850 track-mounted rig

**WATER LEVELS:** See graph in Appendix C  
**START:** 5/12/2008  
**END:** 5/23/2008  
**LOGGER:** M. Thompson
WSDOT Borings – Port of Tacoma Road to King County Line Project
**LOG OF TEST BORING**

Job No. 04-193

<table>
<thead>
<tr>
<th>BLOWS PER FT.</th>
<th>PROFILE</th>
<th>SAMPLE SLEEVE NO.</th>
<th>DESCRIPTION OF MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>5</td>
<td>6</td>
<td>Sand containing pebbles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>sandy gravel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Gravelly sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>6 ′ Recovery Retained</td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>6</td>
<td>Gravelly sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>6′ Recovery Retained</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>7</td>
<td>Clayey sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Shale</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>6′ Recovery Retained</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>2</td>
<td>Clayey sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>6′ Recovery Retained</td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>5</td>
<td>Clayey sand</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>6</td>
<td>Clayey sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>6′ Recovery Retained</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>7</td>
<td>Clayey sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>6′ Recovery Retained</td>
</tr>
</tbody>
</table>

Test Drilling stopped 20′ below ground elevation.
NS-W RAMP PROFILE

FIGURE 3
### Sampler Symbols
- Standard Penetration Test
- Oversized Penetration Test (Dames & Moore, California)
- Shelby Tube
- Piston Sample
- Washington Undisturbed
- Vane Shear Test
- Core
- Becker Hammer
- Bag Sample

### Soil Density Modifiers
<table>
<thead>
<tr>
<th>Gravel, Sand &amp; Non-plastic Silt</th>
<th>Elastic Silts and Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPT Blows/ft</strong></td>
<td><strong>Density</strong></td>
</tr>
<tr>
<td>0-4</td>
<td>Very Loose</td>
</tr>
<tr>
<td>5-10</td>
<td>Loose</td>
</tr>
<tr>
<td>11-24</td>
<td>Medium Dense</td>
</tr>
<tr>
<td>25-50</td>
<td>Dense</td>
</tr>
<tr>
<td>&gt;50</td>
<td>Very Dense</td>
</tr>
<tr>
<td>&gt;60</td>
<td>Hard</td>
</tr>
</tbody>
</table>

### Angularity of Gravel & Cobbles
- **Angular**: Coarse particles have sharp edges and relatively plane sides with unpolished surfaces.
- **Subangular**: Coarse grained particles are similar to angular but have rounded edges.
- **Subrounded**: Coarse grained particles hav nearly plane sides but have well rounded corners and edges.
- **Rounded**: Coarse grained particles have smoothly curved sides and no edges.

### Soil Moisture Modifiers
- **Dry**: Absence of moisture; dusty, dry to touch
- **Moist**: Damp but no visible water
- **Wet**: Visible free water

### Soil Structure
- **Stratified**: Alternating layers of varying material or color at least 6mm thick; note thickness and inclination.
- **Laminated**: Alternating layers of varying material or color less than 6mm thick; note thickness and inclination.
- **Fissured**: Breaks along definite planes of fracture with little resistance to fracturing.
- **Slickensided**: Fracture planes appear polished or glossy, sometimes streaked.
- **Blocky**: Cohesive soil that can be broken down into smaller angular lumps which resist further breakdown.
- **Disrupted**: Soil structure is broken and mixed. Infer that material has moved substantially - landslide debris.
- **Homogeneous**: Same color and appearance throughout.

### HCL Reaction
- **No HCL Reaction**: No visible reaction.
- **Weak HCL Reaction**: Some reaction with bubbles forming slowly.
- **Strong HCL Reaction**: Violent reaction with bubbles forming immediately.

### Degree of Vesicularity of Pyroclastic Rocks
- **Slightly Vesicular**: 5 to 10 percent of total
- **Moderately Vesicular**: 10 to 25 percent of total
- **Highly Vesicular**: 25 to 50 percent of total
- **Scoriaceous**: Greater than 50 percent of total
### Grain Size

<table>
<thead>
<tr>
<th>Grain Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grained</td>
<td>Few crystal Boundaries/grains are distinguishable in the field or with hand lense.</td>
</tr>
<tr>
<td>Medium Grained</td>
<td>Most crystal Boundaries/grains are distinguishable with the aid of a hand lense.</td>
</tr>
<tr>
<td>Coarse Grained</td>
<td>Most crystal Boundaries/grains are distinguishable with the naked eye.</td>
</tr>
</tbody>
</table>

### Weathered State

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh</td>
<td>No visible sign of rock material weathering; perhaps slight discoloration in major discontinuity surfaces.</td>
<td>I</td>
</tr>
<tr>
<td>Slightly Weathered</td>
<td>Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than its fresh condition.</td>
<td>II</td>
</tr>
<tr>
<td>Moderately Weathered</td>
<td>Less than half of the rock material is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as a continuous framework or as core stones.</td>
<td>III</td>
</tr>
<tr>
<td>Highly Weathered</td>
<td>More than half of the rock material is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as discontinuous framework or as core stone.</td>
<td>IV</td>
</tr>
<tr>
<td>Completely Weathered</td>
<td>All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.</td>
<td>V</td>
</tr>
<tr>
<td>Residual Soil</td>
<td>All rock material is converted to soil. The mass structure and material fabric is destroyed. There is a large change in volume, but the soil has not been significantly transported.</td>
<td>VI</td>
</tr>
</tbody>
</table>

### Relative Rock Strength

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Field Identification</th>
<th>Uniaxial Compressive Strength approx</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Very Weak</td>
<td>Specimen crumbles under sharp blow from point of geological hammer, and can be cut with a pocket knife.</td>
<td>1 to 25 MPa</td>
</tr>
<tr>
<td>R2</td>
<td>Moderately Weak</td>
<td>Shallow cuts or scrapes can be made in a specimen with a pocket Knife. Geological hammer point indents deeply with firm blow.</td>
<td>25 to 50 MPa</td>
</tr>
<tr>
<td>R3</td>
<td>Moderately Strong</td>
<td>Specimen cannot be scraped or cut with a pocket knife, shallow indentation can be made under firm blows from a hammer.</td>
<td>50 to 100 MPa</td>
</tr>
<tr>
<td>R4</td>
<td>Strong</td>
<td>Specimen breaks with one firm blow from the hammer end of a geological hammer.</td>
<td>100 to 200 MPa</td>
</tr>
<tr>
<td>R5</td>
<td>Very Strong</td>
<td>Specimen requires many blows of a geological hammer to break intact sample.</td>
<td>Greater than 200 MPa</td>
</tr>
</tbody>
</table>

### Discontinuities

<table>
<thead>
<tr>
<th>Spacing</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Widely</td>
<td>Excellent: Very rough surfaces, no separation, hard discontinuity wall</td>
</tr>
<tr>
<td>Widely</td>
<td>Good: Slightly rough surfaces, separation less than 1 mm, hard discontinuity wall.</td>
</tr>
<tr>
<td>Moderately</td>
<td>Fair: Slightly rough surfaces, separation greater than 1 mm, soft discontinuity wall.</td>
</tr>
<tr>
<td>Closely</td>
<td>Poor: slickensides surfaces, or soft gouge less than 5 mm thick, or open discontinuities 1 to 5 mm.</td>
</tr>
<tr>
<td>Very Closely</td>
<td>Very Poor: Soft gouge greater than 5 mm thick, or open discontinuities greater than 5 mm.</td>
</tr>
</tbody>
</table>

100 (length of core in pieces > 100 mm) / Length of core run

Fracture Frequency (FF) is the average number of fractures per 300 mm of core. Does not include mechanical breaks caused by drilling or handling.
LOG OF TEST BORING:

HOLE No. H-1-99

PROJECT SR 5 Port of Tacoma Road Interchange

MP 135.53 to 136.09

Station 3+040 Offset 0

Equipment CME 850 w/ autohammer Casing HQ-75

Method of Boring wet rotary

Ground El 10.6 (3.23 m)

Start Date February 15, 1999 Completion Date February 19, 1999

Sheet 1 of 4

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/ft (N)</th>
<th>Sample No.</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>D-1</td>
<td></td>
<td></td>
<td>GS MC</td>
<td></td>
<td>1 ft = 0.3048 m.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SILT with sand, very loose, brown, wet, homogeneous. Recovered and Retained: 1.0 ft.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>D-2</td>
<td></td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=70% SILT with organics, very loose, dark brown, wet, mottled. Recovered: 1.5 ft. Retained: 1.0 ft.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No recovery</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>U-3</td>
<td></td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=50% U-4A, SILT with fibrous organic material, soft, dark olive gray, wet, mottled.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>U-4</td>
<td>A</td>
<td></td>
<td>GS CU CN</td>
<td></td>
<td>ML, MC=48% U-4C, SILT with organics</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td>B</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=45% U-4D, SILT with organics</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td>C</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=45% U-4E, SILT with organics</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td>D</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=120% Sandy SILT with wood fragments and organics, very soft, dark olive gray, wet, laminated. Recovered: 1.5 ft. Retained: 1.0 ft.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>U-5</td>
<td>A</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=25% SILT with sand, very soft, dark olive gray, wet, laminated, scattered wood.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td>B</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=42% SILT with sand, medium stiff, dark olive gray, wet, Homogeneous. Length Recovered 1.4 ft, Length Retained 1.0 ft.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td>C</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>SILT with sand, medium stiff, dark olive gray, wet, Homogeneous.</td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Meters (m)</td>
<td>Profile</td>
<td>Standard Penetration Blows/ft</td>
<td>SPT Blows/6&quot; (N)</td>
<td>Sample Type</td>
<td>Sample No. (Rule No.)</td>
<td>Lab Tests</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>---------</td>
<td>-------------------------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>----------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>4</td>
<td>1.2</td>
<td></td>
<td>10 20 30 40</td>
<td>4 (8)</td>
<td>U-10</td>
<td>A B C D</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td>D-9 GS MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td>U-10</td>
<td>A B C D</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.9</td>
<td></td>
<td></td>
<td></td>
<td>D-12 GS MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2.1</td>
<td></td>
<td></td>
<td></td>
<td>D-13 GS MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
<td>D-14 GS MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Meters (m)</td>
<td>Standard Penetration Blows/ft</td>
<td>SPT Blows/ft (N)</td>
<td>Sample Type</td>
<td>Lab Tests</td>
<td>Description of Material</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>-------------------------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>-----------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>11</td>
<td>10</td>
<td>4</td>
<td>D-15</td>
<td></td>
<td>gray, wet, Homogeneous. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>20</td>
<td>4</td>
<td>D-15</td>
<td></td>
<td>D-15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>30</td>
<td>12</td>
<td>D-16</td>
<td></td>
<td>Poorly graded SAND with silt, medium dense, very dark gray, wet, Homogeneous. Length Recovered 1.3 ft, Length Retained 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>11</td>
<td>40</td>
<td>15</td>
<td>D-16</td>
<td></td>
<td>D-16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td></td>
<td>D-16</td>
<td></td>
<td>Poorly graded SAND with silt, dense, very dark gray, wet, Homogeneous. Length Recovered 1.2 ft, Length Retained 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>12</td>
<td></td>
<td></td>
<td>D-17</td>
<td>GS, MC=25%</td>
<td>D-17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>GS, MC=25%</td>
<td>SM, MC=25% Poorly graded SAND with silt, medium dense, dark gray, moist, Stratified, 1/2&quot; seam of coarse sand. 58' lost water return. Length Recovered 1.3 ft, Length Retained 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>11</td>
<td></td>
<td></td>
<td>D-18</td>
<td>GS, MC=25%</td>
<td>D-18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>GS, MC=25%</td>
<td>Poorly graded SAND with silt, medium dense, very dark gray, moist, Homogeneous, scattered FeO, pieces of wood. 62' rods stuck, mud up water return came back. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>2</td>
<td></td>
<td></td>
<td>D-19</td>
<td>GS, MC=37%, Pl=7</td>
<td>D-19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>GS, MC=37%, Pl=7</td>
<td>GS, MC=37%, Pl=7</td>
<td>Elastic SILT, soft, dark olive, wet, Homogeneous,</td>
</tr>
</tbody>
</table>
**LOG OF TEST BORING**

**HOLE No.** H-1-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/N</th>
<th>Sample Type</th>
<th>Sample No.</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>6.7</td>
<td></td>
<td></td>
<td>1</td>
<td>(3)</td>
<td>PI</td>
<td></td>
<td>scattered clam shells.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>23</td>
<td>7.0</td>
<td></td>
<td></td>
<td>6</td>
<td>(20)</td>
<td>O-20</td>
<td>GS</td>
<td>SP-SM, MC=31%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td>MC</td>
<td></td>
<td>Silty SAND, medium dense, dark gray, wet, Homogeneous.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
</tbody>
</table>

End of test hole boring at 75.5 ft below ground elevation. Water table not determined during drilling.

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/6 in (N)</th>
<th>Sample Type</th>
<th>Lab Test</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>D-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty SAND with grass roots and fibers. loose, dark brown, wet, homogeneous. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>1</td>
<td>D-2</td>
<td>0/18 (0/18&quot;)</td>
<td></td>
<td></td>
<td></td>
<td>Organic elastic SILT with organic material, very soft, gray, wet, homogeneous. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>1</td>
<td>D-3</td>
<td>0/18 (0/18&quot;)</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=51%. Organic SILT, very soft, gray, wet, homogeneous. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>1</td>
<td>D-4</td>
<td>0/18 (0/18&quot;)</td>
<td></td>
<td></td>
<td></td>
<td>Interbedded SILT with sand, very loose, gray, wet. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>1</td>
<td>D-5</td>
<td>0/18 (0/18&quot;)</td>
<td></td>
<td>GS MC</td>
<td></td>
<td>ML, MC=42%. Sandy SILT with some laminating silt, horizontal bedding, very loose, gray, wet. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>1</td>
<td>D-6</td>
<td>0/18 (0/18&quot;)</td>
<td></td>
<td></td>
<td></td>
<td>Organic elastic SILT with fibers of wood, very soft, gray, wet. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>0</td>
<td>D-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No recovery</td>
</tr>
</tbody>
</table>

1 ft. = 0.3048 m.
HOLE No. H-2-99

PROJECT SR 5 Port of Tacoma Road Interchange

Sheet 2 of 4
Job No. OL 3463

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/6&quot; (N)</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab</th>
<th>Tests</th>
<th>Description of Material</th>
<th>Groundwater</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>0-3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sandy SILT, interbedded, very soft, gray, moist, horizontal bedding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-25</td>
<td>3.4-7.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silty SAND, interbedded laminae, horizontal bedding, medium dense, dark gray, wet. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-45</td>
<td>7.8-13.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Organic elastic SILT, very soft, gray, wet. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46-60</td>
<td>13.7-18.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gravelly SAND with rotten wood, loose, dark gray, wet. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Elastic SILT, horizontal bedding, very soft, gray, wet. Recovered: 1.5 ft.
### HOLE No. H-2-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/6&quot; (N)</th>
<th>SPT Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
<th>Groundwater</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-13</td>
<td></td>
<td>Well graded fine to coarse SAND, horizontal bedding, medium dense, reddish gray, moist. Recovered: 1.3 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-14</td>
<td></td>
<td>Fine to medium SAND, horizontal bedding, reddish gray, medium dense, wet. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-15</td>
<td></td>
<td>Fine to medium SAND, horizontal bedding, medium dense, reddish gray, wet. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-16</td>
<td></td>
<td>Gravelly SAND with fine to coarse and one mud ball, rotten wood, horizontal bedding, medium dense, reddish gray, moist. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-17</td>
<td>GS</td>
<td>SP-SM Poorly graded SAND with silt, horizontal bedding, reddish gray, medium dense, moist, homogeneous. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Log of Test Boring

**HOLE No.** H-2-99  
**PROJECT** SR 5 Port of Tacoma Road Interchange

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/ft (N)</th>
<th>Sample Type</th>
<th>Sample No. (Table No.)</th>
<th>Lab. Tests</th>
<th>Description of Material</th>
<th>Groundwater</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>D-18</td>
<td>GS</td>
<td>SM</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td>SILT with sand and horizontal bedding, laminae silt, 2&quot; silt in sampler bit, loose, reddish gray, wet. Recovered: 1.1 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td>Sandy SILT, fine sand, horizontal bedding, interbedded laminae, medium dense, dark gray, moist. Recovered: 1.5 ft.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.5</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>D-19</td>
<td></td>
<td>End of Test Hole Boring at 76.5 feet below ground elevation. Water table elevation not determined.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td>This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**LOG OF TEST BORING**

**HOLE No.** H-3-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

MP 135.53 to 136.09

**Station** 3+220  
**Offset** 0

**Equipment** CME 850 w/ autohammer  
**Casing** HQNW-50'

**Ground El** 9.3 (2.83 m)

**Method of Boring** wet rotary

**Start Date** February 24, 1999  
**Completion Date**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Metres (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT No.</th>
<th>Sample Type</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.3048</td>
<td></td>
<td></td>
<td>1</td>
<td>GS, D-1</td>
<td></td>
<td>1 ft = 0.3048 m.</td>
</tr>
</tbody>
</table>
| 2         |            |         |                             | 2      | GS, D-1     |           | ML, MC = 39%  
            |            |         |                             |        |             |           | SILT with sand, soft, mottled gray, brown, wet.  
            |            |         |                             |        |             |           | Recovered: 1.5 ft.      |
| 3         |            |         |                             | 3      | GS, D-2     |           | ML, MC = 43%  
            |            |         |                             |        |             |           | SILT with fibrous organic material, very soft, gray-black, wet.  
            |            |         |                             |        |             |           | Recovered: 1.5 ft.      |
| 5         |            |         |                             | 5      | GS, D-3     |           | ML, MC = 46%  
            |            |         |                             |        |             |           | U-3, U-3B: SILT, very soft, gray-brown, moist.  
            |            |         |                             |        |             |           | Recovered: 1.6 ft.      |
| 10        | 3.048      |         |                             | 10     | GS, D-4     |           | SILT with sand, very soft, gray-brown, moist.  
            |          |         |                             |        |             |           | Recovered: 1.5 ft.      |
| 0/18      | 0/5.48     |         |                             | 0      | GS, D-5     |           | SILT with fibrous organic material, horizontal bedding, soft, gray, wet.  
            | 0/18      |         |                             |        |             |           | Recovered: 1.5 ft.      |
| 0/18      | 0/5.48     |         |                             | 0      | GS, D-6     |           | SILT with fibrous organic material, very soft, gray, moist.  
            | 0/18      |         |                             |        |             |           | Recovered: 1.5 ft.      |
| B         | U-7        |         |                             | 1      | GS, D-7     |           | Sandy SILT with sand partings, very soft, gray, moist.  
            | C         |         |                             |        |             |           | Recovered: 1.9 ft.      |
| D         |            |         |                             | 2      | GS, D-8     |           |             |                         |

**Sheet 1 of 3**

**Job No.** OL 3463  
**S.R.** 5  
**C.S.** 2719
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/ft (N)</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-8</td>
<td></td>
<td></td>
<td>Silty SAND, horizontal bedding, very loose, gray, moist. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-9</td>
<td></td>
<td></td>
<td>Silty SAND, horizontal bedding, loose, gray, moist. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>U-10</td>
<td></td>
<td></td>
<td>Recovered: 0.5 ft. Silty SAND, interbedded, horizontal bedding, bits of organic, medium dense, gray, moist. Recovered: 1.3 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-12</td>
<td></td>
<td></td>
<td>Silty SAND, fine sand, laminae and partings, loose, gray, moist. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D-13</td>
<td></td>
<td></td>
<td>Elastic SILT with horizontal laminae fine sand and rotten wood, very soft, gray, moist. Recovered: 1.5 ft.</td>
</tr>
</tbody>
</table>
### HOLE No. H-3-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/6&quot; (N)</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>0-4.2</td>
<td></td>
<td>0/18</td>
<td>U-15</td>
<td>D-14</td>
<td></td>
<td>Elastic SILT with organic material, rotten wood, very soft, gray, wet, homogeneous. Recovered: 1.9 ft.</td>
</tr>
<tr>
<td>15</td>
<td>4.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>15.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Organic SILT, very soft, gray, moist, homogeneous. Recovered: 1.5 ft.</td>
</tr>
<tr>
<td>55</td>
<td>16.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>18.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>19.31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>21.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of Test Hole Boring at 51.5 feet below ground elevation. Water table elevation not determined. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.</td>
</tr>
</tbody>
</table>
**LOG OF TEST BORING**

**HOLE No.** H-4-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

**MP** 135.53 to 136.09

**Station** 3 + 300

**Offset** 18.8' LT. of I-5 SB West Lane S

**Equipment** BK-81 w/autohammer  
**Casing** HW X 27.0

**Method of Boring** wet rotary

**Start Date** February 16, 1999  
**Completion Date** February 16, 1999

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/N</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab. Tools</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 ft = 0.3048 m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>GRAVEL with sand</td>
</tr>
</tbody>
</table>
| 8         | 2.4        | D-1     |                               |             |             |                       |            | Well graded GRAVEL with sand and small clayey silt pockets, angular, dense, medium dark brown-gray, moist, laminated, (fill)  
| 12        | 3.6        |         |                               |             |             |                       |            | Recovered: 1.2 ft. Retained: 1.0 ft. |
| 17        | 5.1        | D-2     |                               |             |             | GS                    |            | SM                      |
| 10        | 3.0        |         |                               |             |             |                       |            | Silty SAND with silt pockets, medium dense, medium dark gray to brownish black, moist, traces of root hairs.  
| 5         | 1.5        |         |                               |             |             |                       |            | Recovered: 1.1 ft. Retained: 1.0 ft. |
| 4         | 1.2        |         |                               |             |             |                       |            | Poorly graded SAND, root hairs, loose, brownish black, moist, Laminated, Fissured, Homogeneous. Note got very soft at 6.0'. Shelby tube from 6.5' to 8.5' poorly graded fine grained SAND, laminated with very fine grained silt. Took 200 to 300 psi to push Shelby tube 2.0'.  
| 2         | 0.6        | D-3     |                               |             |             | S-3                   |            | Length Recovered 2.0 ft. Length Retained 2.0 ft.  |
| 2         | 0.6        |         |                               |             |             |                       |            | Sandy SILT, loose, brownish black to dark gray, moist, Stratified, Laminated, Fissured, Homogeneous. Changed to (ML) SILT, Note water table in casing after hole was drilled to 20.0' = 10.2' below ground level.  
| 1         | 0.3        | U-5     |                               |             |             | A                     |            | Length Recovered 1.0 ft. Length Retained 1.0 ft.  |
| 2         | 0.6        | A        |                               |             |             | B                     |            | SILT, loose, brownish black, moist, Laminated, Fissured, Homogeneous. Changed at 11.5'. Pushed undisturbed sample 2.0', took 200 to 275 psi to push sampler 2.0'. SILT laminated with very fine grained sand.  
| 3         | 0.9        | B        |                               |             |             | C                     |            | Length Recovered 2.0 ft. Length Retained 1.8 ft.  |
| 2         | 0.6        | D-4     |                               |             |             | D                     |            | ORGANIC SILT with sand and peat, medium stiff, brownish black, moist, Laminated, Fissured, Homogeneous. Changed to (OL/OH) at 13.5' Organic soil laminated with very fine grained sand.  
| 1         | 0.3        | U-6     |                               |             |             | E                     |            | Length Recovered 1.3 ft. Length Retained 1.0 ft.  |
| 2         | 0.6        | A        |                               |             |             | F                     |            | SILT, loose, dark gray, moist, Laminated, Fissured, Homogeneous. Changed at 16.5' to (ML) SILT, laminated with very fine grained sand. Took 250 to 275 psi to push Shelby tube 2.0'.  
| 2         | 0.6        | B        |                               |             |             | G                     |            | Length Recovered 2.0 ft. Length Retained 2.0 ft.  |
| 2         | 0.6        | D-8     |                               |             |             |                       |            | SILT, loose, dark grayish brown, moist, Laminated, Fissured, Homogeneous. (ML) SILT, laminated with very fine grained sand, same as above. End test hole. Ended  

**Groundwater Instrument**
HOLE No. H-4-99

PROJECT SR 5 Port of Tacoma Road Interchange

Sheet 2 of 2
Job No. OL 3463

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Measure (m)</th>
<th>Profile</th>
<th>SPT (Bowls/ft)</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 20 30 40</td>
<td>(4)</td>
<td></td>
<td></td>
<td>and abandoned test hole at 20.0' below ground level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Water level in casing =10.2', 2/16/99.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Length Recovered 1.1 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of test hole boring at 20 ft below ground elevation.</td>
</tr>
</tbody>
</table>

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.
**LOG OF TEST BORING**

**HOLE No.** H-5-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

**Job No.** OL 3463

**MP** 135.53 to 136.09

**S.R.** 5

**Station** 1 + 300

**Offset** 174.0' LT. of I-5 SB West Lanes

**Equipment** BK-81 w/ autohammer

**Casing** HW X 42.0 HQ X 82.0

**Ground El** 11.2 (3.41 m)

**Method of Boring** wet rotary

**Start Date** February 17, 1999

**Completion Date** February 18, 1999

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>Sample Type</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>10</td>
<td>D-1</td>
<td>Silty GRAVEL with sand and roots, angular, medium dense, brownish gray, wet, Homogeneous, no HCl reaction. Note water table at ground level (2/18/99). Length Recovered 0.5 ft, Length Retained 0.5 ft</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>20</td>
<td>D-2</td>
<td>ML, MC=45%, PL=2</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>30</td>
<td>D-3</td>
<td>SILT, very loose, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction. Length Recovered 0.7 ft, Length Retained 0.7 ft</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>40</td>
<td>D-4</td>
<td>ML, MC=50%</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>D-5</td>
<td>U-4B, SILT with organics</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>D-6</td>
<td>Organic SILT with organics and peat, very soft, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>D-7</td>
<td>SM, MC=36%</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>U-8</td>
<td>Sandy SILT, loose, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction, Changed at 15.5' to (ML) SILT, laminated with very fine grained sand and purple stains, none plastic. Length Recovered 1.0 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>SILT, loose, brownish gray, moist, Homogeneous, no HCl reaction. Length Recovered 1.9 ft, Length Retained 1.7 ft</td>
</tr>
</tbody>
</table>
HOLE No. H-5-99

PROJECT SR 5 Port of Tacoma Road Interchange

Sheet 2 of 4

Job No. OL 3463

LOG OF TEST BORING

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/ft</th>
<th>Sample Type</th>
<th>Description of Material</th>
</tr>
</thead>
</table>
| 3         | 9.1        | D, E    | 10 20 30 40                   | 4           | GS, MC      | SM, MC=34%
Silty SAND, loose, brownish gray, moist,
Stratified, Laminated, Fissured, Homogeneous, no HCl reaction,
Stratified with 0.6' of very fine grained sand.
Length Recovered 1.5 ft, Length Retained 1.0 ft |

| 4         | 1.2        | D-10    | 9.1 18 27 36 45               | 4           | GS, MC      | SM, MC=32%
Silty SAND with traces of organic, loose, brownish gray,
mixed, Laminated, Fissured, Homogeneous, no HCl reaction,
changed at 23.5' to (SM) silty SAND, laminated
with very fine grained silt and organic.
Length Recovered 1.5 ft, Length Retained 1.0 ft |

| U-11      | A, B, C, D, E,F | 30.5   | 10 20 30 40                   | 5           | GS, MC      | ORGANIC SOIL, peat, medium stiff, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction, Changed at 23.5' to (SM) organic SILT mixed with peat, laminated with very fine grained sand.
Length Recovered 2.0 ft, Length Retained 2.0 ft |

| 5         | 1.5        | D-13    | 30.5 39.5 48.5               | 8           | GS, MC      | Silty SAND, loose, brownish gray, moist,
Laminated, Fissured, Homogeneous, no HCl reaction.
Length Recovered 1.5 ft, Length Retained 1.0 ft |

| 5         | 1.5        | D-14    | 30.5 39.5 48.5               | 8           | GS, MC      | Poorly graded SAND with silt, medium dense, brownish black, moist, Homogeneous, no HCl reaction.
Length Recovered 1.5 ft, Length Retained 1.0 ft |

| 5         | 1.5        | S-15    | 30.5 39.5 48.5               | 10          | GS, MC      | Poorly graded SAND, medium dense, brownish black, moist, Homogeneous, no HCl reaction.
Length Recovered 1.5 ft, Length Retained 1.0 ft |

| 5         | 1.5        | S-15    | 30.5 39.5 48.5               | 10          | GS, MC      | No Recovery |
**PROJECT:** SR 5 Port of Tacoma Road Interchange  

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blow (N)</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Test</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>4.27</td>
<td></td>
<td></td>
<td>D-16</td>
<td>GS</td>
<td>MC=57% Organic SILT with organics and peat, soft, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>15</td>
<td>4.57</td>
<td></td>
<td></td>
<td>D-17</td>
<td>GS</td>
<td>ORGANIC SILT with peat, very soft, brownish gray, moist, Laminated, Fissured, Homogeneous, no HCl reaction, Silt mixed with fibrous peat. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>16</td>
<td>4.88</td>
<td></td>
<td></td>
<td>D-19</td>
<td>GS</td>
<td>Poorly graded SAND, medium dense, brownish black, moist, Laminated, Fissured, Homogeneous, no HCl reaction. Changed at 53.5' to (SP) poorly graded SAND, laminated with fine grained silt as shown in tube c. Length Recovered 0.9 ft, Length Retained 0.7 ft</td>
</tr>
<tr>
<td>17</td>
<td>5.17</td>
<td></td>
<td></td>
<td>D-20</td>
<td>GS</td>
<td>SM, MC=26% Silty SAND, medium dense, brownish black, moist, Laminated, Fissured, Homogeneous, no HCl reaction, Note 0.2' of sluff in sampler at 56.5'. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>18</td>
<td>5.46</td>
<td></td>
<td></td>
<td>D-21</td>
<td>GS</td>
<td>SP-SM, MC=31% Poorly graded SAND with silt, decayed wood particles, medium dense, brownish black, moist, Laminated, Fissured, Homogeneous, no HCl reaction, Changed at 58.5' to (SP) poorly graded SAND fine grained, traces of black small decayed wood particles and traces of light gray and dark red very fine grains of sand. Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>19</td>
<td>5.76</td>
<td></td>
<td></td>
<td>D-22</td>
<td>GS</td>
<td>Poorly graded SAND, medium dense, brownish black, moist, Laminated, Fissured, Homogeneous, no HCl reaction. Length Recovered 1.3 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>20</td>
<td>6.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SP-SM, MC=27% Poorly graded SAND with silt, decayed wood particles, medium dense, brownish black, moist,</td>
</tr>
<tr>
<td>Depth (ft)</td>
<td>Meters (m)</td>
<td>Profile</td>
<td>Standard Penetration Blows/ft</td>
<td>SPT Blows/6&quot; (N)</td>
<td>Sample Type</td>
<td>Sample No. (Tube No.)</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>---------</td>
<td>-------------------------------</td>
<td>------------------</td>
<td>-------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>6.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>6.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>22.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>25.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>28.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.
# LOG OF TEST BORING

**HOLE No.** H-6-99

**PROJECT** SR 5 Port of Tacoma Road Interchange

**S.R.** 5

**Jno. No.** OL 3463

**MP 135.53 to 136.09**

**Station** 100+200 **Offset** 0 **C.S.** 2719 **Ground El.** 10.6 (3.23 m)

**Equipment** CME 850 w/autohammer **Casing** 50 **Start Date** February 10, 1999 **Completion Date** February 11, 1999 **Sheet** 1 of 3

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Profile</th>
<th>Standard Penetration Blows/N</th>
<th>Sample Type</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>10</td>
<td>D-1 GS</td>
<td></td>
<td>1 ft = 0.3048 m.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>20</td>
<td>D-1 GS</td>
<td></td>
<td>ML, MC = 50% Organic SILT with sand pockets and traces surrounded gravel, very loose, dark brown, moist, lensed, bedded. Recovered and Retained: 1.0 ft.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>30</td>
<td>U-2 A GS</td>
<td></td>
<td>Organic SILT, very loose, dark brown, moist, lensed, bedded.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>40</td>
<td>U-2 A GS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>U-2 A GS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>D-3 GS</td>
<td></td>
<td>ML, MC = 34% Organic SILT, very loose, dark olive gray, wet, sand lenses. Recovered and Retained: 1.2 ft. Organic SILT with very fine sand, very loose, dark olive gray, wet, homogeneous. Bag Sample: 0.5 ft.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>U-4 GS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>D-5 GS</td>
<td></td>
<td>ML, MC = 34% Sandy SILT, very loose, dark olive gray, moist. Recovered and Retained: 1.0 ft.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>D-6 GS</td>
<td></td>
<td>ML, MC = 35% Sandy SILT, very loose, dark olive gray, wet. Recovered and Retained: 1.2 ft.</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>D-7 GS</td>
<td></td>
<td>SILT with sand, loose, dark olive gray, wet. Recovered: 1.4 ft, Retained: 1.0 ft.</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>U-8 GS</td>
<td></td>
<td>Organic SILT, loose, dark olive gray, wet. Bag Sample</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>D-8 GS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>D-9 GS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>D-10 GS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Groundwater**

02/11/1999

**Instrument**
<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
</table>
|          |            |         | 10   | 20 | 30  | 40 | D-9 | GS | MC | ML, MC=35%  
|          |            |         |      |   |    |    |     |    | SILT with some roots, medium stiff, olive gray, moist, Disrupted, no HCl reaction, mottled bluish green Length Recovered 1.5 ft, Length Retained 1.0 ft |
|          |            |         | 2    |    |    |    |     |    | U-10 A | B | C | D | E R 1 | Lean CLAY, medium stiff, bluish gray, moist, Homogeneous, no HCl reaction Length Recovered 1.8 ft, Length Retained 1.8 ft |
|          |            |         | 2    |    |    |    |     |    | D-12 | GS | MC | D R 1 | Silty SAND, medium dense, olive gray, wet, no HCl reaction Length Recovered 1.5 ft, Length Retained 1.0 ft |
|          |            |         | 0    |    |    |    |     |    | U-14 A | B | C | D | E F | Elastic SILT, very soft, very dark olive gray, wet, Homogeneous, no HCl reaction, E+F organic silt and Peat Length Recovered 2.0 ft, Length Retained 2.0 ft |
|          |            |         | 2    |    |    |    |     |    | D-15 | GS | MC | SP-SM, MC=23%  
|          |            |         |      |   |    |    |     |    | SP-SM, MC=23%  
<p>|          |            |         |      |   |    |    |     |    | Poorly graded SAND with silt and some roots, loose, dark olive gray, moist, no HCl reaction, sand lenses Length Recovered 1.5 ft, Length Retained 1.0 ft |</p>
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Blows/6&quot; (N)</th>
<th>Sample Type</th>
<th>Sample No. (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>4.25</td>
<td></td>
<td></td>
<td></td>
<td>D-16</td>
<td>GS</td>
<td></td>
<td>ML, MC=40%</td>
</tr>
<tr>
<td>15</td>
<td>4.57</td>
<td></td>
<td></td>
<td>4</td>
<td>MC</td>
<td></td>
<td></td>
<td>SILT, loose, very dark gray, moist, Homogeneous, no HCl reaction</td>
</tr>
<tr>
<td>50</td>
<td>15.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
</tbody>
</table>

End of test hole boring at 50.5 ft below ground elevation.

This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.
HOLE No. H-7-99

PROJECT SR 5 Port of Tacoma Road Interchange

MP 135.53 to 135.09

Station 100+020 Offset 0

Equipment CME 850 w/ autohammer Casing 20

Method of Boring auger

Start Date February 10, 1999 Completion Date February 10, 1999

Sheet 1 of 2

## SPT

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.3048 m</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Description of Material

1. **1 ft. = 0.3048 m.**

   - **9**: D-1
     - SP-SM, MC=7%
     - Poorly graded SAND with silt and gravel and roots, subangular, medium dense, dark brown, moist, Homogeneous, no HCl reaction
     - Length Recovered 0.9 ft, Length Retained 0.9 ft

   - **10**: D-2
     - Silty clay with some roots and decomposed wood, loose, dark grey, moist, Stratified, no HCl reaction, organic
     - Length Recovered 1.3 ft, Length Retained 1.0 ft

   - **17**: D-3
     - Poorly graded SAND, loose, dark grey, wet, Homogeneous, no HCl reaction, with silt
     - Length Recovered 1.4 ft, Length Retained 1.4 ft

   - **1**: D-4
     - Poorly graded SAND with silt and presence of mica, medium dense, dark grey, wet, Homogeneous, no HCl reaction.
     - Length Recovered 1.5 ft, Length Retained 1.0 ft

   - **13**: D-5
     - Poorly graded SAND with some rounded gravel, medium dense, dark grey, wet, Homogeneous, no HCl reaction
     - Length Recovered 1.5 ft, Length Retained 1.0 ft

   - **16**: D-6
     - Poorly graded SAND, medium dense, dark grey, wet, Homogeneous, no HCl reaction
     - Length Recovered 1.5 ft, Length Retained 1.0 ft

   - **12**: D-7
     - SP, MC=23%
     - Poorly graded SAND, medium dense, dark gray, wet, Homogeneous, no HCl reaction
     - Length Recovered 1.5 ft, Length Retained 1.0 ft

   - **8**: D-8
     - Poorly graded SAND, medium dense, dark gray, wet, Homogeneous, no HCl reaction
HOLE No. H-7-99

PROJECT SR 5 Port of Tacoma Road Interchange

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Meters (m)</th>
<th>Profile</th>
<th>Standard Penetration Blows/ft</th>
<th>SPT Bows/6&quot; (N)</th>
<th>Sample / Type</th>
<th>Sample No (Tube No.)</th>
<th>Lab Tests</th>
<th>Description of Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>(3.05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Length Recovered 1.5 ft, Length Retained 1.0 ft</td>
</tr>
<tr>
<td>20</td>
<td>(6.09)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of test hole boring at 20.5 ft below ground elevation.</td>
</tr>
<tr>
<td>30</td>
<td>(9.14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.</td>
</tr>
</tbody>
</table>
### Project Information

- **Project:** I-5 POT Interchange
- **Owner:** City of Fife
- **Job Number:** 0876-015-02
- **Analysis by:** LJS
- **Date/Time:** 29-Jan-15
- **Run Designation:** WSDOT Recommended

### Notes:

WSDOT Recommended 25-year Section Back Calculated to ESALs

### Traffic Loading

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Life (years)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Growth (%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cars per Day</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Trucks (18K Axle Load) per Day</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 2 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 2 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 3 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 3 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 4 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 4 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Total ESALs</td>
<td>10200000</td>
<td></td>
</tr>
<tr>
<td>Estimated Structural Number</td>
<td>5.08</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>1020000</td>
<td></td>
</tr>
</tbody>
</table>

### Pavement Input

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation (So)</td>
<td>0.5</td>
<td>I-62, III-51</td>
</tr>
<tr>
<td>Reliability (R)</td>
<td>95</td>
<td>II-9 (WSDOT)</td>
</tr>
<tr>
<td>Standard Normal Deviate (Zr)</td>
<td>-1.645</td>
<td>I-62</td>
</tr>
<tr>
<td>Po</td>
<td>4.5</td>
<td>II-12</td>
</tr>
<tr>
<td>Pt</td>
<td>3</td>
<td>II-12</td>
</tr>
<tr>
<td>PSI</td>
<td>1.5</td>
<td>II-12 (WSDOT)</td>
</tr>
<tr>
<td>California Bearing Ratio (CBR)</td>
<td>xx</td>
<td></td>
</tr>
<tr>
<td>Subgrade Resilient Modulus (Mr)</td>
<td>10000</td>
<td>WSDOT</td>
</tr>
<tr>
<td>Drainage Coefficient (mBase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Drainage Coef. (mSubbase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Layer Coef. (aAC)</td>
<td>0.50</td>
<td>II-19 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aBase)</td>
<td>0.13</td>
<td>II-20 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aSubbase)</td>
<td>0.08</td>
<td>II-20</td>
</tr>
</tbody>
</table>

### Individual Minimum Thickness

#### Asphalt Concrete Pavement

<table>
<thead>
<tr>
<th>Base Resilient Modulus (Mr1) (psi)</th>
<th>30000</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Number 1</td>
<td>3.90</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>24139591</td>
<td>7.8 Inches</td>
</tr>
</tbody>
</table>

#### Base Course

<table>
<thead>
<tr>
<th>Subbase Resilient Modulus (Mr2) (psi)</th>
<th>10000</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Number 2</td>
<td>4.99</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>9008527</td>
<td>8.4 Inches</td>
</tr>
</tbody>
</table>

#### Subbase

| Minimum Thickness | 0.0 Inches |

### Design Section

<table>
<thead>
<tr>
<th>Structural Number</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Concrete Pavement</td>
<td>7.8 Inches</td>
</tr>
<tr>
<td>Crushed Rock Surfacing</td>
<td>9.6 Inches</td>
</tr>
<tr>
<td>Gravel Base Structural Number</td>
<td>0.00 Inches</td>
</tr>
</tbody>
</table>

### Pavement Design Calculations

Interstate 5 Port of Tacoma Road Interchange
Fife, Washington
# AASHTO 93 FLEXIBLE PAVEMENT DESIGN

## Project Information

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>I-5/PoT Interchange</td>
<td></td>
</tr>
<tr>
<td>Owner</td>
<td>City of Fife</td>
<td></td>
</tr>
<tr>
<td>Job Number</td>
<td>0876-015-02</td>
<td></td>
</tr>
<tr>
<td>Analysis by</td>
<td>LJS</td>
<td></td>
</tr>
<tr>
<td>Date/Time</td>
<td>29-Jan-15</td>
<td></td>
</tr>
<tr>
<td>Run Designation</td>
<td>23.6M Alt</td>
<td></td>
</tr>
</tbody>
</table>

## Traffic Loading

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Life (years)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Growth (%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cars per Day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Truck (18K Axle Load) per Day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 2 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 2 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 3 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 3 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 4 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 4 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Total ESALs</td>
<td>23600000</td>
<td></td>
</tr>
<tr>
<td>Estimated Structural Number</td>
<td>5.72</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>23600000</td>
<td></td>
</tr>
</tbody>
</table>

## Pavement Input

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation (So)</td>
<td>0.5</td>
<td>I-62, III-51</td>
</tr>
<tr>
<td>Reliability (R)</td>
<td>95</td>
<td>II-9 (WSDOT)</td>
</tr>
<tr>
<td>Standard Normal Deviate (Zr)</td>
<td>-1.645</td>
<td>I-62</td>
</tr>
<tr>
<td>Po</td>
<td>4.5</td>
<td>II-12</td>
</tr>
<tr>
<td>Pt</td>
<td>3</td>
<td>II-12</td>
</tr>
<tr>
<td>PSI</td>
<td>1.5</td>
<td>II-12 (WSDOT)</td>
</tr>
<tr>
<td>California Bearing Ratio (CBR)</td>
<td>xx</td>
<td></td>
</tr>
<tr>
<td>Subgrade Resilient Modulus (Mr)</td>
<td>10000</td>
<td>WSDOT</td>
</tr>
<tr>
<td>Drainage Coefficient (mBase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Drainage Coef. (mSubbase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Layer Coef. (aAC)</td>
<td>0.50</td>
<td>II-19 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aBase)</td>
<td>0.13</td>
<td>II-20 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aSubbase)</td>
<td>0.08</td>
<td>II-20</td>
</tr>
</tbody>
</table>

## Individual Minimum Thickness

### Asphalt Concrete Pavement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Resilient Modulus (Mr1)</td>
<td>30000</td>
<td></td>
</tr>
<tr>
<td>Structural Number 1</td>
<td>3.90</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>24139591</td>
<td>7.8 Inches</td>
</tr>
</tbody>
</table>

### Base Course

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subbase Resilient Modulus (Mr2)</td>
<td>10000</td>
<td></td>
</tr>
<tr>
<td>Structural Number 2</td>
<td>5.72</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>23515835</td>
<td>5.7 Inches</td>
</tr>
</tbody>
</table>

### Subbase

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.0 Inches</td>
</tr>
</tbody>
</table>

## Design Section

<table>
<thead>
<tr>
<th>Pavement</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Concrete Pavement</td>
<td>9.96 Inch</td>
</tr>
<tr>
<td>Crushed Rock Surfacing</td>
<td>6 Inch</td>
</tr>
<tr>
<td>Gravel Base</td>
<td>0 Inch</td>
</tr>
</tbody>
</table>

## Pavement Design Calculations

Interstate 5 Port of Tacoma Road Interchange
Fife, Washington

GeoEngineers
### Traffic Loading

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Life (years)</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Growth (%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Cars per Day</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Trucks (18K Axle Load) per Day</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 1 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 2 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 2 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 3 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 3 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Vehicle 4 per day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Vehicle 4 Load Equivalency Factor</td>
<td>0</td>
<td>D-3 to D-12</td>
</tr>
<tr>
<td>Total ESALs</td>
<td>23600000</td>
<td></td>
</tr>
<tr>
<td>Estimated Structural Number</td>
<td>5.72</td>
<td></td>
</tr>
<tr>
<td>Allowable ESALs</td>
<td>23600000</td>
<td></td>
</tr>
</tbody>
</table>

### Pavement Input

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation (So)</td>
<td>0.5</td>
<td>I-62, III-51</td>
</tr>
<tr>
<td>Reliability (R)</td>
<td>95</td>
<td>II-9 (WSDOT)</td>
</tr>
<tr>
<td>Standard Normal Deviate (Zr)</td>
<td>-1.645</td>
<td>I-62</td>
</tr>
<tr>
<td>Po</td>
<td>4.5</td>
<td>II-12</td>
</tr>
<tr>
<td>Pt</td>
<td>3</td>
<td>II-12</td>
</tr>
<tr>
<td>PSI</td>
<td>1.5</td>
<td>II-12 (WSDOT)</td>
</tr>
<tr>
<td>California Bearing Ratio (CBR)</td>
<td>xx</td>
<td></td>
</tr>
<tr>
<td>Subgrade Resilient Modulus (Mr)</td>
<td>10000</td>
<td>WSDOT</td>
</tr>
<tr>
<td>Drainage Coefficient (mBase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Drainage Coef. (mSubbase)</td>
<td>1.00</td>
<td>II-26</td>
</tr>
<tr>
<td>Layer Coef. (aAC)</td>
<td>0.50</td>
<td>II-19 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aBase)</td>
<td>0.13</td>
<td>II-20 (WSDOT)</td>
</tr>
<tr>
<td>Layer Coef. (aSubbase)</td>
<td>0.08</td>
<td>II-20</td>
</tr>
</tbody>
</table>

#### Individual Minimum Thickness

**Asphalt Concrete Pavement**

| Base Resilient Modulus (Mr1) (psi)  | 30000 | Minimum Thickness |
| Structural Number 1                  | 3.90  |                   |
| Allowable ESALs                      | 24139591 | 7.8 Inches |

**Base Course**

| Subbase Resilient Modulus (Mr2) (psi) | 10000 | Minimum Thickness |
| Structural Number 2                  | 5.72  |                   |
| Allowable ESALs                      | 23515835 | 13.1 Inches |

**Subbase**

| Minimum Thickness | 0.0 Inches |

### Design Section

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>Structural Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Concrete Pavement</td>
<td>4.02</td>
</tr>
<tr>
<td>Crushed Rock Surfacing</td>
<td>1.81</td>
</tr>
<tr>
<td>Gravel Base</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Structural Number</td>
<td>5.83</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Concrete Pavement</td>
<td>8.04 Inches</td>
</tr>
<tr>
<td>Crushed Rock Surfacing</td>
<td>13.92 Inches</td>
</tr>
<tr>
<td>Gravel Subbase</td>
<td>0 Inches</td>
</tr>
</tbody>
</table>

### Pavement Design Calculations

Interstate 5 Port of Tacoma Road Interchange
Fife, Washington
APPENDIX E

Report Limitations and Guidelines for Use
REPORT LIMITATIONS AND GUIDELINES FOR USE

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) rely on professional judgment and opinion to a greater extent than other engineering and natural science disciplines, where more precise and/or readily observable data may exist. To help clients better understand how this difference pertains to our services, GeoEngineers includes the following explanatory “limitations” provisions in its reports. Please confer with GeoEngineers if you need to know more how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for BergerABAM and for the project specifically identified in the report. The information contained herein is not applicable to other sites or projects.

GeoEngineers structures its services to meet the specific needs of its clients. No party other than the party to whom this report is addressed may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed scope of services for the Project, and its schedule and budget, our services have been executed in accordance with our Agreement with BergerABAM dated February 9, 2009 and most recent agreement supplement dated December 9, 2016, and generally accepted geotechnical practices in this area at the time this report was prepared. We do not authorize, and will not be responsible for, the use of this report for any purposes or projects other than those identified in the report.

A Geotechnical Engineering or Geologic Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the Interstate 5 Port of Tacoma Road Interchange, Fife, Washington project. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

1 Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.
For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

If changes occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

**Subsurface Conditions Can Change**

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, new information or technology that becomes available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

**Topsoil**

For the purposes of this report, we consider topsoil to consist of generally fine-grained soil with an appreciable amount of organic matter based on visual examination, and to be unsuitable for direct support of the proposed improvements. However, the organic content and other mineralogical and gradational characteristics used to evaluate the suitability of soil for use in landscaping and agricultural purposes was not determined, nor considered in our analyses. Therefore, the information and recommendations in this report, and our logs and descriptions should not be used as a basis for estimating the volume of topsoil available for such purposes.

**Geotechnical and Geologic Findings Are Professional Opinions**

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions at other locations. Actual subsurface conditions may differ, sometimes significantly, from the opinions presented in this report. Our report, conclusions and interpretations are not a warranty of the actual subsurface conditions.
Geotechnical Engineering Report Recommendations Are Not Final

The construction recommendations included in this report are preliminary and should not be considered final. GeoEngineers’ recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for the recommendations in this report if we do not perform construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective means of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team’s plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable, but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help reduce the risk of problems associated with unanticipated subsurface conditions, GeoEngineers recommends giving contractors the complete geotechnical engineering or geologic report, including these “Report Limitations and Guidelines for Use.” When providing the report, you should preface it with a clearly written letter of transmittal that:

■ advises contractors that the report was not prepared for purposes of bid development and that its accuracy is limited; and

■ encourages contractors to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors Are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor’s procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.
Biological Pollutants

GeoEngineers’ Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term “Biological Pollutants” includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.
APPENDIX B

PERMITS
Regulatory Branch

January 11, 2018

City of Fife
Mr. Ken Gill
3725 Pacific Highway East
Fife, Washington 98424

Reference: NWS-2014-610-DOT
City of Fife
Port of Tacoma Interchange

Dear Mr. Gill:

We have received your request to modify the approved plans for the above-referenced Department of the Army permit. The original plans dated April 3, 2015 were to reconfigure the existing I-5/Port of Tacoma Road Interchange and reconfiguring of local roads to facilitate better traffic flow to the Port of Tacoma from I-5. The work would occur in wetlands at the City of Fife, Pierce County, Washington. The modification consists of increasing permanent fill impacts in wetlands by 0.45 acre, from 8.94 to 9.39 acres, and a reduction in temporary fill impact totals by 0.20 acre, from 0.57 to 0.37. Your request for a permit modification is approved. Enclosed are the approved modified plans dated October 3, 2017, which supersede plans authorized by the Secretary of the Army on March 9, 2016.

Due to the changes in the project fill footprint, a modification of Special Conditions “b” and “j” are necessary to revise the required mitigation for the additional impacts.

Special Conditions “b” and “j” of the permit require mitigation for the project impacts, and a ledger of the mitigation sites to document the credit debits and remaining potential credits. The modifications of Special Conditions “b” and “j” consists of including amendments to the mitigation plan, and revising the credit debits to address the increased impact of 0.45 acres. You are authorized to perform work in accordance with the approved modified Special Conditions “b” and “j” as listed below:

b. The permittee shall implement and abide by the mitigation plan, *Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project* dated November 2015, and the amendments to the plan submitted with the initial modification request dated October 2, 2017 and the revised modification request dated December 14, 2017. Mitigation shall be constructed in advance of impacts planned for the Port of Tacoma Interchange in order to receive the reduced
ratios proposed in the plan. Advance mitigation credits were granted for the mitigation sites with the expectation that the mitigation sites would be constructed two years prior to wetland impacts. If construction of the mitigation sites are not completed two years prior to wetland impacts for the interchange construction, as documented in approved as-built reports and years 1 and 2 monitoring reports, additional mitigation may be required.

j. The City of Fife shall debit 9.39 credits from the Oxbow Mitigation Site’s available credits. The ledger provided by the City of Fife to document this debit includes documentation of 3.29 credits that may be available for future use at the Oxbow and Brookville Gardens Mitigation Sites. These credits will be evaluated for use at the time they are requested for future projects by the City of Fife. If any change to the mitigation sites’ available credits occurs due to changes in as-built conditions, results of monitoring, or other circumstances, a new ledger shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch for review and approval, and must prominently display the reference number NWS-2014-610-DOT.

All other terms and conditions contained in the original permit remain in full force and effect. A copy of this letter will be furnished to Mr. Ross Widener, Widener & Associates, 10108 32nd Ave. W. Suite D, Everett, Washington 98204. If you have any questions please contact the Project Manager, Ms. Sandra Manning at Sandra.L.Manning@usace.army.mil or at (206) 764-6911.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Mark A. Gerald
Colonel, Corps of Engineers
District Engineer

Enclosure
S. 11. T. 20N. R. 3E. W.M.

SUMMARY OF WETLAND IMPACTS

<table>
<thead>
<tr>
<th>WETLAND NUMBER</th>
<th>ECOSYSTEM CATEGORY</th>
<th>PERMANENT WETLAND IMPACT</th>
<th>TEMPORARY WETLAND IMPACT</th>
<th>TEMPORARY BUFFER IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WETLAND A</td>
<td>III</td>
<td>0.19 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
<tr>
<td>WETLAND AM</td>
<td>IV</td>
<td>0.20 ACRE</td>
<td>0.01 ACRE</td>
<td>0.01 ACRE</td>
</tr>
<tr>
<td>WETLAND B</td>
<td>III</td>
<td>0.19 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
<tr>
<td>WETLAND C1</td>
<td>III</td>
<td>0.21 ACRE</td>
<td>0.01 ACRE</td>
<td>0.01 ACRE</td>
</tr>
<tr>
<td>WETLAND C2</td>
<td>III</td>
<td>1.09 ACRE</td>
<td>0.03 ACRE</td>
<td>0.03 ACRE</td>
</tr>
<tr>
<td>WETLAND D1</td>
<td>III</td>
<td>0.23 ACRE</td>
<td>0.01 ACRE</td>
<td>0.01 ACRE</td>
</tr>
</tbody>
</table>

REFERENCE NUMBER: I-5 PORT OF TACOMA ROAD INTERCHANGE IMPROVEMENTS
APPLICANT BY: CITY OF FIFE
LOCATION ADDRESS: PIPE, PIERCE CO., WA
REV: 10/31/17
DATE: 12/15
SHEET 7 OF 21
SUMMARY OF WETLAND IMPACTS

<table>
<thead>
<tr>
<th>WETLAND NUMBER</th>
<th>ECOLOGY CATEGORY</th>
<th>PERMANENT WETLAND</th>
<th>TEMPORARY WETLAND</th>
<th>PERMANENT BUFFER IMPACT</th>
<th>TEMPORARY BUFFER IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WETLAND A</td>
<td>III</td>
<td>0.20 ACRE</td>
<td>0.00 ACRE</td>
<td>0.20 ACRE</td>
<td>0.20 ACRE</td>
</tr>
<tr>
<td>WETLAND B</td>
<td>III</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.14 ACRE</td>
<td>0.14 ACRE</td>
</tr>
<tr>
<td>WETLAND C</td>
<td>III</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
</tbody>
</table>
Dear Mr. Gill:

Enclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application. You are cautioned that any change in the location or plans of the work will require submittal of revised plans to this office for approval prior to accomplishment. Deviation from the approved plans may result in imposition of criminal or civil penalties.

Your attention is drawn to General Condition 1 of the permit which specifies the expiration date for completion of the work. Upon completing the authorized work, please fill out and return the enclosed Certificate of Compliance with Department of the Army Permit form.

The Federal Highway Administration completed a Section 7 Endangered Species Act (ESA) and Magnuson Stevens Act essential fish habitat (EFH) no effect determination for its involvement in the proposed activity for ESA species under the National Marine Fisheries Service reference and U.S. Fish and Wildlife Service (collectively called the Services). We have determined the permit action is sufficiently addressed in their consultation documents. By this letter we are advising you and the Services, in accordance with 50 CFR 402.07 and 50 CFR 600.920(b), that this agency has served as the lead Federal agency for the ESA and EFH consultation responsibilities for the activity described above. For the purpose of this Department of the Army authorization, we have determined this project will comply with the requirements of these laws provided you comply with all of the permit general and special conditions.

We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: www.nws.usace.army.mil select “Regulatory Branch, Permit Information” and then “Contact Us.”
A copy of this letter with enclosure will be furnished to Mr. Ross Widener, Widener & Associates, 10108 32nd Ave. W. Suite D, Everett, Washington 98204. If you have any questions please contact the Project Manager, Ms. Sandra Manning at Sandra.L.Manningt@usace.army.mil or at (206) 764-6911.

Sincerely,

[Signature]

Michelle Walker
Chief, Regulatory Branch

Enclosures
DEPARTMENT OF THE ARMY PERMIT

Permittee: City of Fife

Permit No: NWS-2014-610-DOT

Issuing Office: Seattle District

3725 Pacific Highway East
Fife, Washington 98424

NOTE: The term “you” and its derivatives, as used in this permit, means the permittee or any future transferee. The term “this office” refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The City of Fife will reconfigure the existing Interstate 5 (I-5)/Port of Tacoma Road Interchange (in accordance with the plans and drawings dated April 3, 2015, attached hereto which are incorporated in and made a part of this permit). Interchange improvements would result in permanent fill to 8.95 acres of wetland. These impacts will occur to 7.34 acres of Washington State Department of Ecology (Ecology) rated Category III and 1.61 acres of Category IV, depressional, palustine emergent wetlands. Short-term temporary impacts would occur to 0.54 acre of Category III and 0.03 acre of Category IV wetland. All temporary wetland impacts will be restored on-site and planted with native emergent and woody vegetation. Off-site mitigation for permanent impacts will occur at the Brookville Gardens and Oxbow Advance Mitigation Sites. The purpose of the project is to reduce congestion and improve safety on I-5, within the interchange, and to the Port of Tacoma and local streets in the City of Fife.

Project Location: In wetlands at the City of Fife, Pierce County, Washington.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on __MAR-9 2021__. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in accordance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification to this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed
necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

7. After a detailed and careful review of all the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

Special Conditions:

a. You must provide a copy of the permit transmittal letter, permit form, and drawings to all contractors performing any of the authorized work.

b. The permittee shall implement and abide by the mitigation plan, *Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project* dated November 2015. Mitigation shall be constructed in advance of impacts planned for the Port of Tacoma Interchange in order to receive the reduced ratios proposed in the plan. Advance mitigation credits were granted for the mitigation sites with the expectation that the mitigation sites would be constructed two years prior to wetland impacts. If construction of the mitigation sites are not completed two years prior to wetland impacts for the interchange construction, additional mitigation will be required.

c. The U.S. Army Corps of Engineers (Corps) shall be notified a minimum of two weeks before the start of project construction. A status report on the implementation of the authorized work and on the construction of the mitigation shall be submitted annually to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch by October 31st each year until mitigation and project construction is complete as determined by the Corps. This report must also include photographs documenting replanting of the on-site temporary impact areas. This report must prominently display the reference number NWS-2014-610-DOT.

d. An as-built mitigation construction report and as-built drawings of the mitigation areas shall be submitted upon completion of mitigation construction, in lieu of the status report described in Special Condition "c." This report shall provide documentation and photographs that the long-term site protection measures defined in the mitigation plan for the Oxbow and Brookville Gardens Sites have been completed. This report must be submitted to the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch for review and approval and must prominently display the reference number NWS-2014-610-DOT. The year mitigation construction is completed, as determined by the Corps, represents Year 0 for mitigation monitoring.

e. Mitigation monitoring shall be performed for years 1, 2, 3, 5, 7, and 10 and mitigation monitoring reports summarizing all monitoring results will be due in years 1, 3, 5, 7, and 10 from the due date of the as-built drawings of the mitigation site. All reports must be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch and must prominently display the reference number NWS-2014-610-DOT.

f. The wetland area created and enhanced for advance mitigation, shall not be made the subject of a future individual or general Department of the Army permit application for fill or other development, except for the purposes of enhancing or restoring the mitigation associated with this project. In addition, a description of the mitigation area identified in the final mitigation plan as approved, and any subsequent permit mitigation area revisions, will be recorded with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records to or interest in real property. Proof of this recorded documentation must be provided to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch within 60 days from the date of permit issuance.
g. Mitigation value for the site will be evaluated by the U.S. Army Corps of Engineers when site monitoring demonstrates the site is successfully meeting the stated performance standards and achieving a Category III or higher wetland. If a Category III or higher wetland is not achieved additional mitigation may be required for expected impacts associated with the Port of Tacoma Interchange project.

h. Your responsibility to complete the required compensatory mitigation as set forth in Special Condition "b" will not be considered fulfilled until you have demonstrated mitigation success and have received written verification from the U.S. Army Corps of Engineers.

i. Although the U.S. Army Corps of Engineers (Corps) will consider advanced mitigation for future projects at the Oxbow and Brookville Gardens Mitigation Sites, we have not, to date, evaluated the applicability of the mitigation proposal to any future projects that may propose to utilize available additional mitigation. Therefore, the Corps will not guarantee use of the site for future City of Fife projects. The evaluation of the use of extra mitigation credit will be assessed at the time a site is proposed for use. The sites can only be used by the City of Fife, and the City of Fife must demonstrate the functions achieved at the sites will compensate for functions proposed to be impacted.

j. The City of Fife shall submit a ledger documenting the debit of 1.45 credits of wetland enhancement credit, 0.37 acre of stream creation credit, and 7.13 acres of wetland creation credits from the Oxbow and Brookville Gardens Mitigation Sites. The ledger shall also document a potential 3.77 acres of wetland creation credit may be available for future use. This ledger shall be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch for review and approval within 60 days from the date of permit issuance, and must prominently display the reference number NWS-2014-610-DOT.

Further Information:

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:
   - Section 404 of the Clean Water Act (33 U.S.C. 1344).
   - Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C 1413).

2. Limits of this authorization.
   a. This permit does not obviate the need to obtain other Federal, State, or local authorization required by law.
   b. This permit does not grant any property rights or exclusive privileges.
   c. This permit does not authorize any injury to the property or rights of others.
   d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
   a. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes.
b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require include, but are not limited to, the following:

   a. You fail to comply with the terms and conditions of the permit.

   b. The information provided by you in support of your application proves to have been false, incomplete, or inaccurate (See 4 above).

   c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 Code of Federal Regulations (CFR), Part 325.7 or enforcement procedures such as those contained in 33 CFR, Parts 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR, Part 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.
Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


3-9-16

3/9/16

City of Fife

DATE

DATE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

John G. Buck
Colonel, Corps of Engineers
District Engineer

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE)

(DATE)
## PLAN

**SUMMARY OF WETLAND IMPACTS**

<table>
<thead>
<tr>
<th>WETLAND NUMBER</th>
<th>WETLAND NAME</th>
<th>WETLAND CATEGORY</th>
<th>WETLAND ACRE</th>
<th>TEMPORARY WETLAND IMPACT</th>
<th>PERMANENT WETLAND IMPACT</th>
<th>TEMPORARY BUFFER IMPACT</th>
<th>PERMANENT BUFFER IMPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WETLAND A</td>
<td></td>
<td></td>
<td>0.39 ACRE</td>
<td>0.20 ACRE</td>
<td>0.00 ACRE</td>
<td>0.14 ACRE</td>
<td>0.00 ACRE</td>
</tr>
<tr>
<td>WETLAND B</td>
<td></td>
<td></td>
<td>0.59 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
<tr>
<td>WETLAND C</td>
<td></td>
<td></td>
<td>0.64 ACRE</td>
<td>0.20 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
<tr>
<td>WETLAND D</td>
<td></td>
<td></td>
<td>0.73 ACRE</td>
<td>0.20 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
<td>0.00 ACRE</td>
</tr>
</tbody>
</table>

**REFERENCE NUMBER:** 1-5

**APPLICANT:** CITY OF FIFE

**LOCATION ADDRESS:** FIFE, PIERCE CO., WA

**DATE:** 4/345

**SHEET:** 4 OF 21

**LEGEND**
- WETLAND
- TEMPORARY WETLAND IMPACT
- PERMANENT WETLAND IMPACT
- WETLAND BUFFER
- TEMPORARY WETLAND BUFFER IMPACT
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- DITCH
- RIGHT OF WAY
- PROPOSED RETAINING WALL
- FILL
- LIMITS OF FILL
- BIOFILTRATION SWALE

**USACE REFERENCE #:** WWS-2014-610-DOT
SECTION FOR WETLAND D1
- B 21+00
SECTION FOR WETLAND C1
- A 20+97
SECTION FOR WETLAND AL

D 23+02
SECTION FOR WETLAND AL
LM 1269+00
CERTIFICATE OF COMPLIANCE
WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-2014-610-DOT (Port of Tacoma Interchange)

Name of Permittee: City of Fife

Date of Issuance: MAR 9 2016

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following address:

Department of the Army
U.S. Army Corps of Engineers
Seattle District, Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

| ☐ | The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: ________________________________ |
| ☐ | Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit). |

| ☐ | If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: ________________________________ |
| ☐ | Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit). |

Printed Name: ____________________________________________

Signature: ____________________________________________

Date: __________________________
December 28, 2017

City of Fife
Public Works Department
ATTN: Mr. Ken Gill
3725 Pacific Highway E
Fife, WA 98424


Dear Mr. Gill:

Enclosed is the First Amendment to § 401 Water Quality Certification (WQC) Order No. 13038, issued on December 29, 2015, for the above project.

On October 8, 2017, Widener and Associates submitted a request on your behalf to modify the 401 WQC to authorize a required design change that will result in an additional 0.45 acre of permanent impact to a Category III wetland. Temporary wetland impacts will be reduced from 0.57 acres to 0.37 acres. To compensate for the added wetland impacts, an additional 0.45 acres of wetland creation credits will be debited from the Oxbow Advance Mitigation Site. A revised modification request (dated December 14, 2017) was submitted to Ecology on December 15, 2017, to provide clarification and additional information.

All other conditions of 401 WQC Order No. 13038 remain in effect. In order to easily see the changes to Order No. 13038, we are providing a strikeout version of the 401 WQC for your information.

If you have any questions, please contact Lori Kingsbury at (360) 407-6926. The enclosed Amendment may be appealed by following the procedures described in the Amendment.

Sincerely,

Perry J Lund, Section Manager
Shorelands and Environmental Assistance Program
Southwest Regional Office

Enclosure

By Certified Mail 91 7199 9991 7036 9326 9159
cc: Sandra Manning, U.S. Army Corps of Engineers
    Ross Widener, Widener and Associates
    Steve Friddle, City of Fife

e-cc: Loree’ Randall, Ecology, HQ SEA
ecyrefedpermits@ecy.wa.gov
    Zach Meyer, Ecology, SWRO SEA
    Teri Granger, Ecology, HQ SEA
    Chris Montague-Breakwell, Ecology, SWRO WQ
IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO The City of Fife
In accordance with 33U.S.C. 1341 (FWPCA §401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC

ORDER NO. 13038, First Amendment Corps Reference No. 2014-0610-DOT

TO: City of Fife Public Works Department ATTN: Mr. Ken Gill 3725 Pacific Highway East Fife, Washington 98424

On December 29, 2015 the Washington Department of Ecology (Ecology) issued a §401 Water Quality Certification (WQC) to the City of Fife for the above-referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA § 401).

Ecology received a request on your behalf from Widener and Associates on October 8, 2017, to modify the §401 WQC to authorize a required design change that will result in an additional 0.45 acres of permanent impact to a Category III wetland. A revised modification request (dated December 14, 2017) was submitted to Ecology on December 15, 2017, to provide clarification and additional information. Temporary wetland impacts will be reduced from 0.57 acres to 0.37 acres. To compensate for the additional permanent wetland impacts, 0.45 acres of wetland creation credits will be debited from the Oxbow Advance Mitigation Site.

Administrative Order No. 13038, dated December 29, 2015, is hereby amended as follows:

I. Project Description

The fourth paragraph of the project description on Page 1 that reads:

The proposed project will permanently fill 7.34 acres of Category III wetlands, and 1.61 acres of Category IV depressional, palustrine emergent wetlands. There will also be temporary impacts to 0.57 acres of Category III and Category IV wetlands. All temporarily disturbed wetland areas will be restored upon the completion of adjacent roadwork.

Is replaced with:

The proposed project will permanently fill 7.78 acres of Category III wetlands, and 1.61 acres of Category IV depressional, palustrine emergent wetlands. There will also be temporary impacts to 0.37 acres of Category III and Category IV wetlands. All temporarily disturbed wetland areas will be restored upon the completion of adjacent roadwork.
II. Section E. Wetland Compensatory Mitigation Conditions  
Condition Number 1 that reads:

The Applicant shall mitigate wetland impacts as described in the *Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project, City of Fife, Pierce County, Washington* (hereafter referred to as the “Mitigation Plan”) prepared by Widener & Associates, dated November 2015, or as modified by this Order or as revised and approved by Ecology.

Is replaced with:

The Applicant shall mitigate wetland impacts as described in the *Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project, City of Fife, Pierce County, Washington* (hereafter referred to as the “Mitigation Plan”) prepared by Widener & Associates, dated November 2015, as modified by this Order, and as identified in the modification request dated October 2, 2017; received by Ecology on October 8, 2017, and as identified in the revised modification request dated December 14, 2017; received by Ecology on December 15, 2017, or as further revised and approved by Ecology.

No other conditions or requirements of the above-mentioned order are affected by this amendment.

The Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if it appears necessary to further protect the public interest.

Failure to comply with this amended Order may result in the issuance of civil penalties or other actions whether administrative or judicial, to enforce the terms of this amended Order.

**YOUR RIGHT TO APPEAL**

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.
### ADDRESS AND LOCATION INFORMATION

<table>
<thead>
<tr>
<th>Street Addresses</th>
<th>Mailing Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department of Ecology</strong></td>
<td><strong>Department of Ecology</strong></td>
</tr>
<tr>
<td>Attn: Appeals Processing Desk</td>
<td>Attn: Appeals Processing Desk</td>
</tr>
<tr>
<td>300 Desmond Drive SE</td>
<td>PO Box 47608</td>
</tr>
<tr>
<td>Lacey, WA 98503</td>
<td>Olympia, WA 98504-7608</td>
</tr>
<tr>
<td><strong>Pollution Control Hearings Board</strong></td>
<td><strong>Pollution Control Hearings Board</strong></td>
</tr>
<tr>
<td>1111 Israel RD SW</td>
<td>PO Box 40903</td>
</tr>
<tr>
<td>STE 301</td>
<td>Olympia, WA 98504-0903</td>
</tr>
<tr>
<td>Tumwater, WA 98501</td>
<td></td>
</tr>
</tbody>
</table>

---

Perry J Lund, Section Manager  
Shorelands and Environmental Assistance Program  
Southwest Regional Office  
Department of Ecology  

12/28/17  
Date
This document shows the activities and conditions that have been amended since the original Order was issued. Therefore it is not the official certification and should only be used for informational purposes.

December 28, 2017, First Amendment changes are in RED.

IN THE MATTER OF GRANTING A WATER QUALITY CERTIFICATION TO
The City of Fife
ATTN: Mr. Ken Gill
in accordance with 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW 90.48.260 and Chapter 173-201A WAC

ORDER No. 13038
Corps Reference No. NWS-2014-0610
To Construct the I-5/Port of Tacoma Road Interchange Improvement Project, within wetlands, City of Fife, Pierce County, Washington

TO: City of Fife
ATTN: Mr. Ken Gill
3725 Pacific Highway East
Fife, WA 98424

On December 4, 2014 the City of Fife submitted the initial Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification. Revisions to the JARPA were submitted on January 29, 2015 and April 3, 2015. A joint public notice regarding the request was distributed by the U.S. Army Corps of Engineers (Corps) for the above-referenced project pursuant to the provisions of Chapter 173-225 WAC on April 15, 2015.

The City of Fife is proposing to replace the existing interchange at I-5 and Port of Tacoma Road. Work will include the reconfiguration of the interchange ramps and 34th Avenue East will be extended as an overpass to connect to the new ramps. Other project activities include the installation of retaining walls, a new traffic signal at Pacific Highway East and 34th Avenue East, stormwater facilities, utility relocations, and road channelization.

The purpose of the project is to improve efficiency of truck freight traffic to and from the Port of Tacoma and reduce traffic congestion on local streets.

The proposed project will permanently fill 7.34 acres of Category III wetlands, and 1.61 acres of Category IV depressional, palustrine emergent wetlands. There will also be temporary impacts to 0.57 acres of Category III and Category IV wetlands. All temporarily disturbed wetland areas will be restored upon the completion of adjacent roadwork.

The proposed project will permanently fill 7.78 acres of Category III wetlands, and 1.61 acres of Category IV depressional, palustrine emergent wetlands. There will also be temporary impacts to 0.57 acres of Category III and Category IV wetlands. All temporarily disturbed wetland areas will be restored upon the completion of adjacent roadwork.

Mitigation to compensate for the wetland impacts will occur off-site at the Brookville Gardens and Oxbow Advance Mitigation Sites. The mitigation will be constructed at least two years in advance of the proposed project impacts and will consist of 10.9 acres of wetland creation between both of the mitigation sites and 4.36 acres of existing wetland will be enhanced at the Oxbow Site. The proposed mitigation will have 9.40 acres of designated buffer.
The project is located at the I-5 Interchange at the Port of Tacoma Road. Work will be from SR 509 to 20th Street E, Fife, Pierce County, Washington, 98424; Sections 2,11,12; Township 20; North; Range 3 East; WRIA 10, Puyallup-White Watershed.

AUTHORITIES:

In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:

1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §§1311, 1312, 1313, 1316, and 1317 (FWPCA § 301, 302, 303, 306 and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and

3. Conformance with the provision of using all known, available, and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will not violate applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC, and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC), or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments occurring as a result of project construction or operations.

A. General Conditions:

1. For purposes of this Order, the term “Applicant” shall mean the City of Fife and its agents, assignees, and contractors.

2. For purposes of this Order, all submittals required by its conditions shall be sent to Ecology’s Southwest Regional Office, Attn: Federal Permit Manager, SEA Program, P.O. Box 47775, Olympia, WA 98504-7775, or loch461@ecy.wa.gov. Any submittals shall reference Order No. 13038 and Corps No. NWS-2014-0610.

3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on April 3, 2015. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA is voided by subsequent changes to the project not authorized by this Order.
4. Within 30 days of receipt of an updated JARPA, Ecology will determine whether the revised project requires a new water quality certification and public notice or whether a modification to this Order is required.

5. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue a Section 404 permit.

6. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.

7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.

8. Nothing in this Order waives Ecology’s authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.

9. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents, and approvals. These statements shall be provided to Ecology before construction begins at the project.

10. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

11. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

B. Timing:

1. This Order shall remain in effect for a period of twelve (12) years from the date of issuance unless otherwise modified by Ecology.

C. Notification Requirements:

1. The Applicant shall provide a copy of the final Corps Permit to Ecology’s Southwest Regional Office Federal Permit Manager, in accordance with condition A.2 above, within two (2) weeks of receipt of the permit.
2. The Applicant shall provide written notification (FAX, e-mail, or mail) to Ecology’s Southwest Regional Office Federal Permit Manager in accordance with condition A.2 above for the following activities:
   a. At least ten (10) days prior to the onset of any work on site
   b. Immediately following a violation of the state water quality standards or any condition of this Order
   c. Within fourteen (14) days after completion of project construction.

3. If project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit a written construction status report. Status reports shall be submitted every 12 months thereafter until project construction is complete.

D. Construction, Equipment Staging and Maintenance:

1. The project shall obtain and comply with the conditions of the current Construction Stormwater General Permit (National Pollutant Discharge Elimination System – NPDES) issued for this project.

2. Construction stormwater, sediment, and erosion control best management practices (BMPs; e.g., filter fences, etc.) suitable to prevent exceedances of state water quality standards shall be in place before starting construction at the site.

3. Sediment and erosion control measures shall be inspected and maintained prior to and during project implementation.

4. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state, including wetlands.

5. All construction debris shall be properly disposed of in a manner to prevent it from entering wetlands and/or wetland buffers.

6. All work within the project limits shall be clearly marked/staked prior to construction. Clearing limits, travel corridors, and stockpile sites shall be clearly marked. Sensitive areas and buffers that are to be protected from disturbance shall be marked so as to be clearly visible to equipment operators. All project staff shall be trained to recognize construction fencing or flagging that identifies sensitive area boundaries. Equipment shall enter and operate within the marked clearing limits corridors and stockpile areas.

7. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in a confined area in order to prevent contamination to waters of the state. Fueling areas will be provided with adequate spill containment.

8. Appropriate BMPs shall be implemented to minimize track-out during construction.

9. Staging area will be located a minimum of 50 feet and, where practical, 200 feet from waters of the state (including wetlands), unless authorized by Ecology.

10. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working area shall be contained for proper disposal, and shall not be discharged into state waters or storm drains.
December 29, 2015
Order No. 13038
December 28, 2017, First Amendment
Corps No. NWS-2014-0610
Page 5 of 7

11. Clean Fill Criteria: The Applicant shall ensure that fill (soil) placed for the proposed project does not contain toxic materials in toxic amounts.

E. Wetland Compensatory Mitigation Conditions:

1. The Applicant shall mitigate wetland impacts as described in the Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project, City of Fife, Pierce County Washington (hereafter referred to as the “Mitigation Plan”) prepared by Widener & Associates dated November 2015, or as modified by this Order or revised and approved by Ecology.

2. The Applicant shall submit any changes to the Mitigation Plan in writing to Ecology (per Condition A.2 above) for review and approval before work begins.

3. Advance mitigation credit was granted for the mitigation sites with the expectation that the mitigation would be constructed two years prior to the wetland impacts. If construction of the mitigation sites has not been completed two years prior to the wetland impacts associated with this project, Ecology will require additional compensation.

4. Prior to impacting wetlands at the project site, the Applicant shall submit documentation to Ecology (per Condition A.2, above) that the mitigation sites are meeting the performance standards set forth in the Mitigation Plan. This documentation shall include:

   a. An as-built report, including plan sheets, documenting site conditions at Year Zero. The as-built report must:
      - Be submitted within 90 days of completion of construction and planting of the mitigation sites. Include one hard copy and one electronic file.
      - Include the information listed in Attachment B (Information Required for As-Built Reports.)

   b. A copy of the Year 1 and Year 2 Monitoring Reports. The Monitoring Reports should include the information contained in Attachment C. (Information Required for Monitoring Reports.)

   c. A copy of the Site Protection Real Estate Instrument.

5. The Applicant shall provide Ecology with a copy of each monitoring report for the remainder of the ten-year monitoring period (per Condition A.2 above.)
6. If the Applicant has not met all conditions and performance standards for the proposed project mitigation Ecology may require additional monitoring, additional mitigation, or both.

7. Until the Applicant has received written notice from Ecology that the Mitigation Plan has been fully implemented, the Applicant’s obligation under Condition E.1. to mitigate for wetlands impacts is not met.

F. Emergency/Contingency Measures:

1. The Applicant shall develop and implement a Spill Prevention and Containment Plan for all aspects of this project.

2. The Applicant shall have adequate and appropriate spill response materials on hand to respond to emergency release of petroleum products or any other material into waters of the state.

3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc. shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into waters of the state.

4. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, including wetlands, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or operator shall immediately take the following actions:
   a. Cease operations that are causing the compliance problem.
   b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
   c. In the event of finding distressed or dying fish, the applicant shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until the applicant is instructed by Ecology on what to do with them. Ecology may require analyses of these samples before allowing the work to resume.
   d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
   e. Notify Ecology of the failure to comply. All oil spills shall be reported immediately to Ecology’s 24-Hour Spill Response Team at 1-800-258-5990, and within 24 hours of spills or other events to Ecology’s Southwest Federal Project Coordinator at (360) 407-6926 or (360) 407-6300.
   f. Submit a detailed written report to Ecology’s Federal Permit Manager within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other
pertinent information.

Compliance with this condition does not relieve the Applicant from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.
December 29, 2015

City of Fife
ATTN: Mr. Ken Gill
3725 Pacific Highway East
Fife, WA  98424

RE: Water Quality Certification Order No. 13038 for Corps Public Notice No. NWS-2014-0610, to fill 8.95 acres of wetlands to construct the I-5/Port of Tacoma Road Interchange Improvement, Wetlands, Fife, Pierce County, Washington

Dear Mr. Gill:

On December 4, 2014, the City of Fife submitted a Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) for a Section 401 Water Quality Certification (401 Certification) under the federal Clean Water Act to construct the I-5/Port of Tacoma Road Interchange Improvements, in the City of Fife, Pierce County, Washington. Revised JARPA’s were submitted to Ecology on January 29, 2015, and April 3, 2015.

The proposed project will impact a total of 8.95 acres of Category III and Category IV wetlands. Mitigation to compensate for the wetland impacts will occur off-site through a combination of 10.9 acres of wetland creation and 4.36 acres of wetlands enhancement at the Brookville Gardens and Oxbow mitigation sites. The mitigation will be constructed at least two years in advance of the proposed project impacts.

On behalf of the State of Washington, Ecology certifies that the work described in the original JARPA and the public notice complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended and applicable state laws. This certification is subject to the conditions contained in the enclosed Order.

If you have any questions, please contact Lori Kingsbury at (360) 407-6926. The enclosed Order may be appealed by following the procedures described in the Order.

Sincerely,

[Signature]

Perry J Lund, Unit Manager
Shorelands and Environmental Assistance Program
Southwest Regional Office

Enclosure

By Certified Mail 7012 2920 0000 1182 2267
cc: Sandra Manning, Corps of Engineers
    David Osaki, City of Fife
    Ross Widener, Widener & Associates

e-cc: ECY RE FEDPERMITS
    Loree Randall, Ecology, HQ SEA
    Lori Kingsbury, Ecology, SWRO SEA
    Alex Callender, Ecology, SWRO SEA
    Deborah Cornett, Ecology, SWRO WQ
    Dana Mock, Ecology, HQ SEA
IN THE MATTER OF GRANTING A
WATER QUALITY
CERTIFICATION TO
The City of Fife
ATTN: Mr. Ken Gill
in accordance with 33 U.S.C. 1341
(FWPCA § 401), RCW 90.48.120, RCW
90.48.260 and Chapter 173-201A WAC

ORDER No. 13038
Corps Reference No. NWS-2014-0610
To construct the I-5/Port of Tacoma Road
Interchange Improvement Project, within
wetlands, City of Fife, Pierce County,
Washington

TO: City of Fife
ATTN: Mr. Ken Gill
3725 Pacific Highway East
Fife, WA 98424

On December 4, 2014, the City of Fife submitted the initial Joint Aquatic Resource Permit Application (JARPA) to the Department of Ecology (Ecology) requesting a Section 401 Water Quality Certification. Revisions to the JARPA were submitted on January 29, 2015, and April 3, 2015. A joint public notice regarding the request was distributed by the U.S. Army Corps of Engineers (Corps) for the above-referenced project pursuant to the provisions of Chapter 173-225 WAC on April 15, 2015.

The City of Fife is proposing to replace the existing interchange at I-5 and Port of Tacoma Road. Work will include the reconfiguration of the interchange ramps and 34th Avenue East will be extended as an overpass to connect to the new ramps. Other project activities include the installation of retaining walls, a new traffic signal at Pacific Highway East and 34th Avenue East, stormwater facilities, utility relocations, and road channelization.

The purpose of the project is to improve efficiency of truck freight traffic to and from the Port of Tacoma and reduce traffic congestion on local streets.

The proposed project will permanently fill 7.34 acres of Category III wetlands, and 1.61 acres of Category IV depressional, palustrine emergent wetlands. There will also be temporary impacts to 0.57 acres of Category III and Category IV wetlands. All temporarily disturbed wetland areas will be restored upon the completion of adjacent roadwork.

Mitigation to compensate for the wetland impacts will occur off-site at the Brookville Gardens and Oxbow Advance Mitigation Sites. The mitigation will be constructed at least two years in advance of the proposed project impacts and will consist of 10.9 acres of wetland creation between both of the mitigation sites and 4.36 acres of existing wetland will be enhanced at the Oxbow Site. The proposed mitigation will have 9.40 acres of designated buffer.

The project is located at the I-5 Interchange at the Port of Tacoma Road. Work will be from SR 509 to 20th Street E, Fife, Pierce County, Washington, 98424; Sections 2, 11, 12; Township 20; North; Range 3 East; WRRA 10, Puyallup-White Watershed.

AUTHORITIES:
In exercising authority under 33 U.S.C. § 1341, RCW 90.48.120, and RCW 90.48.260, Ecology has examined this application pursuant to the following:
1. Conformance with applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. §1311, 1312, 1313, 1316, and 1317 (FWPCA § 301, 302, 303, 306, and 307);

2. Conformance with the state water quality standards contained in Chapter 173-201A WAC and authorized by 33 U.S.C. §1313 and by Chapter 90.48 RCW, and with other applicable state laws; and,

3. Conformance with the provision of using all known, available, and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

WATER QUALITY CERTIFICATION CONDITIONS:

Through issuance of this Order, Ecology certifies that it has reasonable assurance that the activity as proposed and conditioned will be conducted in a manner that will not violate applicable water quality standards and other appropriate requirements of state law. In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260, Chapter 173-200 WAC, and Chapter 173-201A WAC, water quality certification is granted to the Applicant subject to the conditions within this Order.

Certification of this proposal does not authorize the Applicant to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC), or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this certification shall absolve the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments occurring as a result of project construction or operations.

A. General Conditions:

1. For purposes of this Order, the term “Applicant” shall mean the City of Fife and its agents, assignees, and contractors.

2. For purposes of this Order, all submittals required by its conditions shall be sent to Ecology’s Southwest Regional Office, Attn: Federal Permit Manager, SEA Program, P.O. Box 47775, Olympia, WA 98504-7775, or loch461@ecy.wa.gov. Any submittals shall reference Order No. 13038 and Corps No. NWS-2014-0610.

3. Work authorized by this Order is limited to the work described in the JARPA received by Ecology on April 3, 2015. The Applicant will be out of compliance with this Order and must reapply with an updated application if the information contained in the JARPA is voided by subsequent changes to the project not authorized by this Order.

4. Within 30 days of receipt of an updated JARPA, Ecology will determine whether the revised project requires a new water quality certification and public notice or whether a modification to this Order is required.

5. This Order shall be rescinded if the U.S. Army Corps of Engineers does not issue a Section 404 permit.

6. Copies of this Order shall be kept on the job site and readily available for reference by Ecology personnel, the construction superintendent, construction managers and lead workers, and state and local government inspectors.
7. The Applicant shall provide access to the project site and all mitigation sites upon request by Ecology personnel for site inspections, monitoring, necessary data collection, and/or to ensure that conditions of this Order are being met.

8. Nothing in this Order waives Ecology’s authority to issue additional orders if Ecology determines that further actions are necessary to implement the water quality laws of the state. Further, Ecology retains continuing jurisdiction to make modifications hereto through supplemental order, if additional impacts due to project construction or operation are identified (e.g., violations of water quality standards, downstream erosion, etc.), or if additional conditions are necessary to further protect water quality.

9. The Applicant shall ensure that all appropriate project engineers and contractors at the project site have read and understand relevant conditions of this Order and all permits, approvals, and documents referenced in this Order. The Applicant shall provide Ecology a signed statement (see Attachment A for an example) from each project engineer and contractor that they have read and understand the conditions of this Order and the above-referenced permits, plans, documents, and approvals. These statements shall be provided to Ecology before construction begins at the project.

10. This Order does not authorize direct, indirect, permanent, or temporary impacts to waters of the state or related aquatic resources, except as specifically provided for in conditions of this Order.

11. Failure of any person or entity to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

B. Timing:

1. This Order shall remain in effect for a period of twelve (12) years from the date of issuance unless otherwise modified by Ecology.

C. Notification Requirements:

1. The Applicant shall provide a copy of the final Corps Permit to Ecology’s Southwest Regional Office Federal Permit Manager, in accordance with condition A.2 above, within two (2) weeks of receipt of the permit.

2. The Applicant shall provide written notification (FAX, e-mail, or mail) to Ecology’s Southwest Regional Office Federal Permit Manager in accordance with condition A.2 above for the following activities:
   a. At least ten (10) days prior to the onset of any work on site
   b. Immediately following a violation of the state water quality standards or any condition of this Order
   c. Within fourteen (14) days after completion of project construction.

3. If project construction is not completed within 13 months of issuance of this Order, the Applicant shall submit a written construction status report. Status reports shall be submitted every 12 months thereafter until project construction is complete.
D. Construction, Equipment Staging and Maintenance:

1. The project shall obtain and comply with the conditions of the current Construction Stormwater General Permit (National Pollutant Discharge Elimination System – NPDES) issued for this project.

2. Construction stormwater, sediment, and erosion control best management practices (BMPs; e.g., filter fences, etc.) suitable to prevent exceedances of state water quality standards shall be in place before starting construction at the site.

3. Sediment and erosion control measures shall be inspected and maintained prior to and during project implementation.

4. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state, including wetlands.

5. All construction debris shall be properly disposed of in a manner to prevent it from entering wetlands and/or wetland buffers.

6. All work within the project limits shall be clearly marked/staked prior to construction. Clearing limits, travel corridors, and stockpile sites shall be clearly marked. Sensitive areas and buffers that are to be protected from disturbance shall be marked so as to be clearly visible to equipment operators. All project staff shall be trained to recognize construction fencing or flagging that identifies sensitive area boundaries. Equipment shall enter and operate within the marked clearing limits corridors and stockpile areas.

7. Machinery and equipment used during construction shall be serviced, fueled, and maintained on uplands in a confined area in order to prevent contamination to waters of the state. Fueling areas will be provided with adequate spill containment.

8. Appropriate BMPs shall be implemented to minimize track-out during construction.

9. Staging area will be located a minimum of 50 feet and, where practical, 200 feet from waters of the state (including wetlands), unless authorized by Ecology.

10. Wash water containing oils, grease, or other hazardous materials resulting from wash down of equipment or working area shall be contained for proper disposal, and shall not be discharged into state waters or storm drains.

11. Clean Fill Criteria: The Applicant shall ensure that fill (soil) placed for the proposed project does not contain toxic materials in toxic amounts.

E. Wetland Compensatory Mitigation Conditions:

1. The Applicant shall mitigate wetland impacts as described in the Wetland Mitigation Plan, I-5/Port of Tacoma Road Interchange Improvement Project, City of Fife, Pierce County Washington (hereafter referred to as the “Mitigation Plan”) prepared by Widener & Associates, dated November 2015, or as modified by this Order or revised and approved by Ecology.

2. The Applicant shall submit any changes to the Mitigation Plan in writing to Ecology (per Condition A.2 above) for review and approval before work begins.
3. Advance mitigation credit was granted for the mitigation sites with the expectation that the mitigation would be constructed two years prior to the wetland impacts. If construction of the mitigation sites has not been completed two years prior to the wetland impacts associated with this project, Ecology will require additional compensation.

4. Prior to impacting wetlands at the project site, the Applicant shall submit documentation to Ecology (per Condition A.2, above) that the mitigation sites are meeting the performance standards set forth in the Mitigation Plan. This documentation shall include:

a. An as-built report, including plan sheets, documenting site conditions at Year Zero. The as-built report must:
   
   • Be submitted within 90 days of completion of construction and planting of the mitigation sites. Include one hard copy and one electronic file.
   
   • Include the information listed in Attachment B (Information Required for As-Built Reports.)

b. A copy of the Year 1 and Year 2 Monitoring Reports. The Monitoring Reports should include the information contained in Attachment C. (Information Required for Monitoring Reports.)

c. A copy of the Site Protection Real Estate Instrument.

5. The Applicant shall provide Ecology with a copy of each monitoring report for the remainder of the ten-year monitoring period (per Condition A.2 above.)

6. If the Applicant has not met all conditions and performance standards for the proposed project mitigation Ecology may require additional monitoring, additional mitigation, or both.

7. Until the Applicant has received written notice from Ecology that the Mitigation Plan has been fully implemented, the Applicant’s obligation under Condition E.1. to mitigate for wetlands impacts is not met.

F. Emergency/Contingency Measures:

1. The Applicant shall develop and implement a Spill Prevention and Containment Plan for all aspects of this project.

2. The Applicant shall have adequate and appropriate spill response materials on hand to respond to emergency release of petroleum products or any other material into waters of the state.

3. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc. shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into waters of the state.

4. Any work that is out of compliance with the provisions of this Order, or conditions causing distressed or dying fish, or any discharge of oil, fuel, or chemicals into state waters, including wetlands, or onto land with a potential for entry into state waters, is prohibited. If these occur, the Applicant or operator shall immediately take the following actions:
a. Cease operations that are causing the compliance problem.

b. Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.

c. In the event of finding distressed or dying fish, the applicant shall collect fish specimens and water samples in the affected area within the first hour of the event. These samples shall be held in refrigeration or on ice until the applicant is instructed by Ecology on what to do with them. Ecology may require analyses of these samples before allowing the work to resume.

d. In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.

e. Notify Ecology of the failure to comply. All oil spills shall be reported immediately to Ecology’s 24-Hour Spill Response Team at 1-800-258-5990, and within 24 hours of spills or other events to Ecology’s Southwest Federal Project Coordinator at (360) 407-6926 or (360) 407-6300.

f. Submit a detailed written report to Ecology’s Federal Permit Manager within five (5) days that describes the nature of the event, corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

Compliance with this condition does not relieve the Applicant from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

---

**YOUR RIGHT TO APPEAL**

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. “Date of receipt” is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.
## ADDRESS AND LOCATION INFORMATION

<table>
<thead>
<tr>
<th>Street Addresses</th>
<th>Mailing Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department of Ecology</strong></td>
<td><strong>Department of Ecology</strong></td>
</tr>
<tr>
<td>Attn: Appeals Processing Desk</td>
<td>Attn: Appeals Processing Desk</td>
</tr>
<tr>
<td>300 Desmond Drive SE</td>
<td>PO Box 47608</td>
</tr>
<tr>
<td>Lacey, WA 98503</td>
<td>Olympia, WA 98504-7608</td>
</tr>
<tr>
<td><strong>Pollution Control Hearings Board</strong></td>
<td><strong>Pollution Control Hearings Board</strong></td>
</tr>
<tr>
<td>1111 Israel Rd SW, STE 301</td>
<td>PO Box 40903</td>
</tr>
<tr>
<td>Tumwater, WA 98501</td>
<td>Olympia, WA 98504-0903</td>
</tr>
</tbody>
</table>

## CONTACT INFORMATION

Please direct all questions about this Order to:

Lori Kingsbury  
Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Olympia, WA 98504-7775  
loch461@ecy.wa.gov

## MORE INFORMATION

- **Pollution Control Hearings Board Website**
  www.eho.wa.gov/Boards_PCHB.aspx
- **Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board**
  http://apps.leg.wa.gov/RCW/default.aspx?cite=43.21B
- **Chapter 371-08 WAC – Practice And Procedure**
- **Chapter 34.05 RCW – Administrative Procedure Act**
  http://apps.leg.wa.gov/RCW/default.aspx?cite=34.05
- **Chapter 90.48 RCW – Water Pollution Control**
  http://apps.leg.wa.gov/RCW/default.aspx?cite=90.48
- **Chapter 173.204 Washington Administrative Code (WAC) Sediment Management Standards**
• Chapter 173-200 WAC Water Quality Standards for Ground Waters of the State of Washington

• Chapter 173-201A WAC Water Quality Standards for Surface Waters of the State of Washington

SIGNATURE

[Signature]

Perry J Lund, Unit Manager
Shorelands and Environmental Assistance Program
Southwest Regional Office
Department of Ecology

Date: Dec 2015, 2015
Attachment A
Statement of Understanding
Water Quality Certification Conditions

I-5/Port of Tacoma Road Interchange Improvement Project
City of Fife
Water Quality Certification Order No. 13038
And
Corps Reference No. NWS-2014-0610

I, ____________________________, state that I will be involved as an agent or contractor for The City of Fife in the site preparation and/or construction of the I-5/Port of Tacoma Road Interchange Project located from SR 509 to 20th Street East, Fife, Pierce County, Washington. I further state that I have read and understand the relevant conditions of the Washington Department of Ecology Water Quality Certification Order No. 13038 and the applicable permits and approvals referenced therein which pertain to the project-related work for which I am responsible.

______________________________
Signature

______________________________
Date

______________________________
Title

______________________________
Phone

______________________________
Company
Attachment B
Information Required for As-built Reports
I-5/Port of Tacoma Road Interchange Improvement Project
City of Fife
Water Quality Certification Order No. 13038
And
Corps Reference No. NWS-2014-0610

Background Information
1) Project name.
2) Ecology docket number and the Corps reference number.
3) Name and contact information for the parties responsible for the mitigation site including:
   a) The applicant.
   b) The landowner.
   c) Wetland professional on site during construction of the compensatory mitigation site.
4) Name and contact information for the party responsible for preparing the report.
5) Who the report was prepared for (name, address, and phone number) (if different from number 3 above.)
6) Month and year the report was produced.

The Development (Impact) Site
7) Brief description of the development project (impact site). Include:
   a) Directions to the site.
   b) Month and year construction of the development project started and ended.
   c) Area (acres) and type(s) (rating category, HGM classification, and Cowardin classification) of wetlands that were actually impacted by the development project, including temporary impacts.

The Compensatory Mitigation Project
8) Brief description of the final compensatory mitigation project with any changes from the approved plan made during construction. Include:
   a) Directions to the site.
   b) Who completed the compensatory mitigation project (name, address, and phone number).
   c) Actual acreage and type(s) (re-establishment, rehabilitation, creation, enhancement, and preservation) of mitigation authorized to compensate for wetland impacts.
   d) Important dates including:
      i. Month and year the wetland impacts occurred.
      ii. When work on the compensatory mitigation site began and ended.
      iii. When different activities began and ended such as grading, removal of invasive plants, installing plants, and installing habitat features.
9) Description of any problems encountered and solutions implemented (with reasons for changes) during construction of the compensatory mitigation site.
10) Any changes to the goals, objectives, and performance standards of the compensatory mitigation project.
11) List of any follow-up actions needed, with a schedule.
12) Final site maps (8 1/2” x 11” or larger) of the compensatory mitigation site(s) including the following (at a minimum):
   a) Geographic location of the site with landmarks;
   b) Clear delineation of the project perimeter(s);
   c) Topography (with a description of how elevations were determined);
   d) Installed planting scheme (quantities, densities, sizes, and approximate locations of plants, as well as the source(s) of plant material);
   e) Location of habitat features;
   f) Location of permanent photo stations.
   The final site maps should reflect on-the-ground conditions after the site work is completed. Include the month and year when the maps were produced and, if applicable, when information was collected.

13) Photographs of the site at as-built conditions taken from permanent photo stations. We recommend photo pans.

14) Copies of any records of deed notifications or conservation easements.
Attachment C
Information Required for Monitoring Reports
I-5/ Port of Tacoma Road Interchange Project
City of Fife
Water Quality Certification Order No. 13038
and
Corps Reference No. NWS-2014-0610

Ecology requires the following information for monitoring reports submitted under this Order. Ecology will accept additional information that may be required by other regulators.

Background Information
1) Project name.
2) Ecology docket number and Corps reference number.
3) Name and contact information of the parties responsible for the mitigation site, including:
   a) The applicant.
   b) The landowner.
4) Name and contact information for the party responsible for the monitoring activities and report.
5) Whom the report was prepared for (name, address, and phone number) \( \text{(if different from number 3 above)} \).
6) Month and year the monitoring data were collected.
7) Month and year the report was produced.

Mitigation Project Information
8) Brief description of the mitigation project, including:
   a) Directions to the site.
   b) Acreage and type(s) (re-establishment, rehabilitation, creation, enhancement, and preservation) of mitigation authorized to compensate for wetland impacts.
9) Brief description of monitoring approach and methods.
10) A list of the goals and objectives for the mitigation project.
11) Summary table of monitoring data compared with performance standards. Using the monitoring data, describe how the site is developing toward goals and objectives and whether the project is in compliance with performance standards.
12) Summary (including dates) of management actions (maintenance, contingencies, and corrective actions) implemented at the site(s).
13) Summary of any difficulties or significant events that occurred on the site that may affect the ultimate success of the project.
14) Specific recommendations for any additional corrective actions or adaptive management with a time table.
15) Summary of any lessons learned.
16) Site maps (8 1/2” x 11” or larger) of the compensatory mitigation site(s) including the following (at a minimum).
   a) Include the month and year when the maps were produced and when information was collected.
b) The geographic location of the site with landmarks.

c) Clear delineation of the project perimeter(s).

d) Species, numbers, and approximate locations of all replanted vegetation.

e) Location of habitat features.

f) Location of permanent photo stations and location of any other photos.

17) Photographs taken at permanent photo stations (and other photographs as needed) from the most recent monitoring visit, which are dated and clearly indicate the direction from which the photo was taken. We recommend photo pans.
March 11, 2017

Washington State Department of Transportation
Attn: Stacie Kelsey
P.O. Box 47440
Olympia, WA 98504-7440

Port of Tacoma Road Interchange Project – APE Update
Pierce County, WA

Dear Ms. Kelsey,

The City of Fife is proposing to update the APE area and project description for the Port of Tacoma Road Interchange Project. A cultural resource assessment has previously been completed with a recommendation of ‘no historic properties affected’. SHPO concurred with this finding in a letter dated June 3, 2013. Since these findings, the APE area has been modified and new construction elements have been added. No changes will apply to the mitigation site. The project will take place within the legal geographical description of Township 20 North; Range 3 East; Sections 2, 11 and 12 as well as Township 20 North; Range 4 East; Sections 7 and 18.

Project elements now include new on and off ramps for both north and southbound I-5 at the intersection with Port of Tacoma Rd and a bridge across I-5 to create a diamond couplet interchange. This will make 34th Ave E and Port of Tacoma Rd a set of paired one-way couplets that function as a single higher capacity street. Port of Tacoma Rd will become a one-way street in the southbound direction from 12th St E to 20th St E and 34th Ave E will be reconstructed and extended to a one-way street in the northbound direction from 20th St E to 12th St E. The new northbound street will include a new bridge over I-5. Traffic signals will be installed at the new ramp intersections with 34th Ave E and Port of Tacoma Rd. Additional local road improvements will include widening 12th Street E, 20th Street E, and Pacific Hwy E. The project will involve relocation of existing power poles, street lights, and adjustments of utility manholes. The existing waterline in 34th Ave E will be replaced and increased to 12” and will be extended south across the new bridge to tie in the existing waterline on 20th St E. The project proposes to improve stormwater management in accordance with the WSDOT 2014 Highway Runoff Manual. All project activities will be within the proposed APE (Figure 2).

The maximum depth of excavation will typically be no more than 4-6 feet, however greater depths will be required for drilled shafts of the bridge foundation and ground improvement for the on and off ramps and between Pacific Hwy E and 20th St E. Ground improvements will be up to a depth of 30-40 feet and drilled shafts will be up to depths of 80-100 feet.

Right of way will be acquired in strips along the roadway and entire parcels will be acquired for the extension of 34th Ave E. Upon searching the Department of Archeology and Historic Preservation’s WISAARD webtool, it was determined that there are no cultural or historical sites
in the original or proposed project area. The nearest cultural or historic site on the public register is an Indian cemetery located approximately 800 feet southwest of the western project limits.

As most construction activities in the new APE area will occur along previously existing roadways, parking lots, and in the footprint of existing structures, they will be primarily within the vertical and horizontal limits of previous disturbance. A few small areas within the additional APE area are unpaved and vegetated but likely to be fill material or previously disturbed. Excavation associated with new project elements will be at the same depth as those previously approved, and typically no more than 4-6 feet with the exception of drilled shafts and ground improvements. At 80-100 feet below ground surface, drilled shafts are anticipated to have no more impact than the ground improvements which were previously consulted on. Cultural resources would be most likely found within the top 30 feet of soil and drilling to deeper depths would have no additional impact. The data and analysis in the cultural resources assessment is sufficient to cover the minimal additions the APE area.

On behalf of the City of Fife, we request your assistance in obtaining concurrence from the State Historic Preservation Office on the revised APE for this project. Should you need further information regarding this project please contact me at (425) 503-3629.

Sincerely,

Ross Widener
Widener & Associates
Figure 2. Area of Potential Effects

Port of Tacoma Rd / I-5 Interchange Improvements

City of Fife
Pierce County, WA

March 10, 2017
September 25, 2014

Ken Gill
Assistant City Engineer, City of Fife
3725 Pacific Highway East
Fife, WA 98424

Hand Carried

Received by Date

Subject: Letter of Authorization to Discharge Wastewater

Dear Mr. Gill:

This letter is written with regard to your request to discharge groundwater from your wetland mitigation site located near Wapato Creek in Fife to your municipal sanitary sewer conveyance system. As you are aware, Tacoma and Fife have an inter-local agreement by which Tacoma has regulatory oversight over the types and quality of wastewaters discharged into Fife’s municipal sanitary sewer conveyance system, which includes contaminated groundwater.

Initial analytical results as submitted by your consultant indicated the wastewater from your project is within the limits for wastewater strength as dictated by Tacoma Municipal Code 12.08.040. You may discharge wastewater from your project on a batch basis based on approval of the City. Samples must be taken of each batch and analysis submitted to the City prior to each discharge. If an acceptable history of compliance is achieved, the requirement for sampling each batch discharge may be waived. Each batch must be sampled for the following parameters and samples must be representative of the volume of the tank:

- **Total Petroleum Hydrocarbons (TPH)** 50 mg/L
- **Arsenic (Total)** 0.1 mg/L
- **Visible Sheen** Prohibited

Additionally, all groundwater encountered must be passed through at least two of the 21,000 gallon storage tanks in series prior to discharge to the sanitary sewer system for oil protection. The discharge must be monitored for unusual color, odor and/or sheen. If such condition arises, the discharge must be immediately discontinued and the City of Tacoma must be notified.

Should you have any questions, please contact Paul Tollefson at (253) 502-2265 or email at ptollefson@cityoftacoma.org.

Sincerely,

Dan C. Thompson, Ph.D.
Business Operations Division Manager
Environmental Services
APPENDIX C
PREVAILING HOURLY MINIMUM WAGE RATES
The PREVAILING WAGES listed here include both the hourly wage rate and the hourly rate of fringe benefits. On public works projects, worker's wage and benefit rates must add to not less than this total. A brief description of overtime calculation requirements are provided on the Benefit Code Key.

### Journey Level Prevailing Wage Rates for the Effective Date: 2/21/2018

<table>
<thead>
<tr>
<th>County</th>
<th>Trade</th>
<th>Job Classification</th>
<th>Wage</th>
<th>Holiday</th>
<th>Overtime</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pierce</td>
<td>Asbestos Abatement Workers</td>
<td>Journey Level</td>
<td>$46.57</td>
<td>5D</td>
<td>1H</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Boilermakers</td>
<td>Journey Level</td>
<td>$64.54</td>
<td>5N</td>
<td>1C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Brick Mason</td>
<td>Journey Level</td>
<td>$55.82</td>
<td>5A</td>
<td>1M</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Brick Mason</td>
<td>Pointer-Caulker-Cleaner</td>
<td>$55.82</td>
<td>5A</td>
<td>1M</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Building Service Employees</td>
<td>Janitor</td>
<td>$11.50</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Building Service Employees</td>
<td>Shampooer</td>
<td>$11.50</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Building Service Employees</td>
<td>Waxer</td>
<td>$11.50</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Building Service Employees</td>
<td>Window Cleaner</td>
<td>$13.22</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Pierce</td>
<td>Cabinet Makers (In Shop)</td>
<td>Journey Level</td>
<td>$28.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Acoustical Worker</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Bridge, Dock And Wharf Carpenters</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Carpenter</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Carpenters on Stationary Tools</td>
<td>$57.31</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Creosoted Material</td>
<td>$57.28</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Floor Finisher</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Floor Layer</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Carpenters</td>
<td>Scaffold Erector</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Cement Masons</td>
<td>Journey Level</td>
<td>$57.21</td>
<td>7A</td>
<td>1M</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Bell/Vehicle or Submersible Operator (Not Under Pressure)</td>
<td>$110.54</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Dive Supervisor/Master</td>
<td>$72.97</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Diver</td>
<td>$110.54</td>
<td>5D</td>
<td>4C</td>
<td>8V</td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Diver On Standby</td>
<td>$67.97</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Diver Tender</td>
<td>$61.65</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Manifold Operator</td>
<td>$61.65</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Manifold Operator Mixed Gas</td>
<td>$66.65</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Remote Operated Vehicle Operator/Technician</td>
<td>$61.65</td>
<td>5D</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Divers &amp; Tenders</td>
<td>Remote Operated Vehicle Tender</td>
<td>$57.43</td>
<td>5A</td>
<td>4C</td>
<td></td>
</tr>
</tbody>
</table>


2/21/2018
<table>
<thead>
<tr>
<th>Pierce</th>
<th>Industry</th>
<th>Position</th>
<th>Hourly Rate</th>
<th>Rate Code</th>
<th>Language Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Assistant Engineer</td>
<td>$56.44</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Assistant Mate (Deckhand)</td>
<td>$56.00</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Boatemen</td>
<td>$56.44</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Engineer Welder</td>
<td>$57.51</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Leverman, Hydraulic</td>
<td>$58.67</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Mates</td>
<td>$56.44</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Dredge Workers</td>
<td>Oiler</td>
<td>$56.00</td>
<td>5D</td>
<td>3F</td>
</tr>
<tr>
<td>Pierce</td>
<td>Drywall Applicator</td>
<td>Journey Level</td>
<td>$56.78</td>
<td>5D</td>
<td>1H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Drywall Tapers</td>
<td>Journey Level</td>
<td>$57.43</td>
<td>5P</td>
<td>1E</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electrical Fixture Maintenance Workers</td>
<td>Journey Level</td>
<td>$17.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Inside</td>
<td>Cable Splicer</td>
<td>$66.64</td>
<td>5C</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Inside</td>
<td>Journey Level</td>
<td>$62.74</td>
<td>5C</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Inside</td>
<td>Lead Covered Cable Splicer</td>
<td>$70.53</td>
<td>5C</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Inside</td>
<td>Welder</td>
<td>$66.64</td>
<td>5C</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Motor Shop</td>
<td>Craftsman</td>
<td>$15.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Motor Shop</td>
<td>Journey Level</td>
<td>$14.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Cable Splicer</td>
<td>$73.93</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Certified Line Welder</td>
<td>$67.60</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Groundperson</td>
<td>$45.49</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Heavy Line Equipment Operator</td>
<td>$67.60</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Journey Level Lineperson</td>
<td>$67.60</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Line Equipment Operator</td>
<td>$57.02</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Pole Sprayer</td>
<td>$67.60</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electricians - Powerline Construction</td>
<td>Powderperson</td>
<td>$50.76</td>
<td>5A</td>
<td>4D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Electronic Technicians</td>
<td>Journey Level</td>
<td>$32.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Elevator Constructors</td>
<td>Mechanic</td>
<td>$88.36</td>
<td>7D</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Elevator Constructors</td>
<td>Mechanic In Charge</td>
<td>$95.41</td>
<td>7D</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Fabricated Precast Concrete Products</td>
<td>Journey Level - In-Factory Work Only</td>
<td>$11.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Fence Erectors</td>
<td>Fence Erector</td>
<td>$22.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Flaggers</td>
<td>Journey Level</td>
<td>$39.48</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Glaziers</td>
<td>Journey Level</td>
<td>$60.56</td>
<td>7L</td>
<td>1Y</td>
</tr>
<tr>
<td>Pierce</td>
<td>Heat &amp; Frost Insulators And Asbestos Workers</td>
<td>Journeyman</td>
<td>$67.93</td>
<td>5J</td>
<td>4H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Heating Equipment Mechanics</td>
<td>Journey Level</td>
<td>$78.17</td>
<td>7F</td>
<td>1E</td>
</tr>
<tr>
<td>Pierce</td>
<td>Hod Carriers &amp; Mason Tenders</td>
<td>Journey Level</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Industrial Power Vacuum Cleaner</td>
<td>Journey Level</td>
<td>$11.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Boat Operator</td>
<td>$59.86</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Cook</td>
<td>$56.18</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>------</td>
<td>---------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Deckhand</td>
<td>$56.18</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Deckhand Engineer</td>
<td>$57.26</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Launch Operator</td>
<td>$58.59</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inland Boatmen</td>
<td>Mate</td>
<td>$58.59</td>
<td>5B</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Cleaner Operator, Foamer Operator</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Grout Truck Operator</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Head Operator</td>
<td>$12.78</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Technician</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Inspection/Cleaning/Sealing Of Sewer &amp; Water Systems By Remote Control</td>
<td>Tv Truck Operator</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Insulation Applicators</td>
<td>Journey Level</td>
<td>$57.18</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Ironworkers</td>
<td>Journeyman</td>
<td>$66.68</td>
<td>7N</td>
<td>1O</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Air, Gas Or Electric Vibrating Screed</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Airtrac Drill Operator</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Ballast Regular Machine</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Batch Weighman</td>
<td>$39.48</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Brick Pavers</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Brush Cutter</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Brush Hog Feeder</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Burner</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Caisson Worker</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Carpenter Tender</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Caulker</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Cement Dumper-paving</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Cement Finisher Tender</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Change House Or Dry Shack</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Chipping Gun (under 30 Lbs.)</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Chipping Gun(30 Lbs. And Over)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Choker Setter</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Chuck Tender</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Clary Power Spreader</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Clean-up Laborer</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Concrete Dumper/chute Operator</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Concrete Form Stripper</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Concrete Placement Crew</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Concrete Saw Operator/core Driller</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>-----------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Crusher Feeder</td>
<td>$39.48</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Curing Laborer</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Demolition: Wrecking &amp; Moving (incl. Charred Material)</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Ditch Digger</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Diver</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Diver (hydraulic,diamond)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Dry Stack Walls</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Dump Person</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Epoxy Technician</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Erosion Control Worker</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Faller &amp; Bucker Chain Saw</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Fine Graders</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Grout Machine Tender</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Groutmen (pressure)including Post Tension Beams</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Guardrail Erector</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Grade Checker &amp; Transit Person</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Grinders</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Hazardous Waste Worker (level A)</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Hazardous Waste Worker (level B)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Hazardous Waste Worker (level C)</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>High Scaler</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Jackhammer</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Laserbeam Operator</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Maintenance Person</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Manhole Builder-mudman</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Material Yard Person</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Motorman-dinky Locomotive</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Nozzlaman (concrete Pump, Green Cutter When Using Combination Of High Pressure Air &amp; Water On Concrete &amp; Rock, Sandblast, Gunite, Shotcrete, Water Bla</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Pavement Breaker</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pilot Car</td>
<td>$39.48</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pipe Layer Lead</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pipe Layer/tailor</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pipe Pot Tender</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pipe Reliner</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pipe Wrapper</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Pot Tender</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Powderman</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Powderman's Helper</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Power Jacks</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Railroad Spike Puller - Power</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Raker - Asphalt</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Re-timberman</td>
<td>$48.02</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Remote Equipment Operator</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Rigger/signal Person</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Rip Rap Person</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Rivet Buster</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Rodder</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Scaffold Erector</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Scale Person</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Sloper (over 20&quot;)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Sloper Sprayer</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Spreader (concrete)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Stake Hopper</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Stock Piler</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tamper &amp; Similar Electric, Air &amp; Gas Operated Tools</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tamper (multiple &amp; Self-propelled)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Timber Person - Sewer (lagger, Shorer &amp; Cribber)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Toolroom Person (at Jobsite)</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Topper</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Track Laborer</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Track Liner (power)</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Traffic Control Laborer</td>
<td>$42.22</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Traffic Control Supervisor</td>
<td>$42.22</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Truck Spotter</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tugger Operator</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tunnel Work-Compressed Air Worker 0-30 psi</td>
<td>$92.60</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tunnel Work-Compressed Air Worker 30.01-44.00 psi</td>
<td>$97.63</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tunnel Work-Compressed Air Worker 44.01-54.00 psi</td>
<td>$101.31</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce Laborers</td>
<td>Tunnel Work-Compressed Air Worker 54.01-60.00 psi</td>
<td>$107.01</td>
<td>7A</td>
<td>3I</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Compressed Air Worker 60.01-64.00 psi</td>
<td>$109.13</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>-----------------------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Compressed Air Worker 64.01-68.00 psi</td>
<td>$114.23</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Compressed Air Worker 68.01-70.00 psi</td>
<td>$116.13</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Compressed Air Worker 70.01-72.00 psi</td>
<td>$118.13</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Compressed Air Worker 72.01-74.00 psi</td>
<td>$120.13</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Guage and Lock Tender</td>
<td>$48.12</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Tunnel Work-Miner</td>
<td>$48.12</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Vibrator</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Vinyl Seamer</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Watchman</td>
<td>$35.88</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Welder</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Well Point Laborer</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers</td>
<td>Window Washer/cleaner</td>
<td>$35.88</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers - Underground Sewer &amp; Water</td>
<td>General Laborer &amp; Topman</td>
<td>$46.57</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Laborers - Underground Sewer &amp; Water</td>
<td>Pipe Layer</td>
<td>$47.44</td>
<td>7A</td>
<td>3I</td>
</tr>
<tr>
<td>Pierce</td>
<td>Landscape Construction</td>
<td>Irrigation Or Lawn Sprinkler Installers</td>
<td>$17.07</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Landscape Construction</td>
<td>Landscape Equipment Operators Or Truck Drivers</td>
<td>$14.55</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Landscape Construction</td>
<td>Landscaping Or Planting Laborers</td>
<td>$17.07</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Lathers</td>
<td>Journey Level</td>
<td>$56.78</td>
<td>5D</td>
<td>1H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Marble Setters</td>
<td>Journey Level</td>
<td>$55.82</td>
<td>5A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Metal Fabrication (In Shop)</td>
<td>Fitter</td>
<td>$15.25</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Metal Fabrication (In Shop)</td>
<td>Laborer</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Metal Fabrication (In Shop)</td>
<td>Machine Operator</td>
<td>$13.98</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Metal Fabrication (In Shop)</td>
<td>Welder</td>
<td>$13.98</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Millwright</td>
<td>Journey Level</td>
<td>$58.68</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Modular Buildings</td>
<td>Journey Level</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Painters</td>
<td>Journey Level</td>
<td>$41.60</td>
<td>6Z</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Crew Tender</td>
<td>$52.37</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 0-30.00 PSI</td>
<td>$71.35</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 30.01 - 44.00 PSI</td>
<td>$76.35</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 44.01 - 54.00 PSI</td>
<td>$80.35</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td></td>
<td>$85.35</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Occupation</td>
<td>Description</td>
<td>Rate</td>
<td>Weeks</td>
<td>Ref.</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>-------------</td>
<td>-------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 54.01 - 60.00 PSI</td>
<td>$87.85</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 60.01 - 64.00 PSI</td>
<td>$92.85</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 64.01 - 68.00 PSI</td>
<td>$94.85</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 68.01 - 70.00 PSI</td>
<td>$96.85</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Hyperbaric Worker - Compressed Air Worker 70.01 - 72.00 PSI</td>
<td>$98.85</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Pile Driver</td>
<td>Journey Level</td>
<td>$57.43</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Plasterers</td>
<td>Journey Level</td>
<td>$54.89</td>
<td>7Q</td>
<td>1R</td>
</tr>
<tr>
<td>Pierce</td>
<td>Playground &amp; Park Equipment Installers</td>
<td>Journey Level</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Plumbers &amp; Pipefitters</td>
<td>Journey Level</td>
<td>$67.47</td>
<td>5A</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Asphalt Plant Operator</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Assistant Engineers</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Barrier Machine (zipper)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Batch Plant Operator: Concrete</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Bobcat</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Brokk - Remote Demolition Equipment</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Brooms</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Bump Cutter</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cableways</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Chipper</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Compressor</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Concrete Pump: Truck Mount With Boom Attachment Over 42m</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Concrete Finish Machine -laser Screed</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Concrete Pump: Truck Mount With Boom Attachment Up To 42m</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Conveyors</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes, 100 Tons - 199 Tons, Or 150 Ft Of Boom (including Jib With Attachments)</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: 20 Tons Through 44 Tons With Attachments</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------</td>
<td>--------------------------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: 200 tons to 299 tons, or 250' of boom (including jib with attachments)</td>
<td>$61.72</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: 300 tons and over, or 300' of boom (including jib with attachments)</td>
<td>$62.33</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom (including jib with Attachments)</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: A-frame - 10 Tons And Under</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: Friction 200 tons and over, Tower Cranes: over 250' in height from base to boom.</td>
<td>$62.33</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: Friction cranes through 199 tons</td>
<td>$61.72</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Crusher</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Deck Engineer/deck Winches (power)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Derricks, On Building Work</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Dozers D-9 &amp; Under</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Drill Oilers: Auger Type, Truck Or Crane Mount</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Drilling Machine</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Elevator And Man-lift: Permanent And Shaft Type</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Finishing Machine, Bidwell And Gamaco &amp; Similar Equipment</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Forklift: 3000 Lbs And Over With Attachments</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Forklifts: Under 3000 Lbs. With Attachments</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Grade Engineer: Using Blueprints, Cut Sheets,etc.</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Gradechecker/stakeman</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Guardrail punch/Auger</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. &amp; Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Horizontal/directional Drill Locator</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Horizontal/directional Drill Operator</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Hydralifts/Boom Trucks Over 10 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Hydralifts/boom Trucks, 10 Tons And Under</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Loader, Overhead 8 Yards &amp; Over</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Loader, Overhead, 6 Yards. But Not Including 8 Yards</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Loaders, Overhead Under 6 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Loaders, Plant Feed</td>
<td>$59.67</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Loaders: Elevating Type Belt</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Locomotives, All</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Material Transfer Device</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Mechanics, All (Leadmen - $0.50 Per Hour Over Mechanic)</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Motor patrol graders</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Oil Distributors, Blower Distribution &amp; Mulch Seeding Operator</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Outside Hoists (elevators And Manlifts), Air Tuggers,strato</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Overhead, Bridge Type Crane: 20 Tons Through 44 Tons</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Overhead, Bridge Type: 100 Tons And Over</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Overhead, Bridge Type: 45 Tons Through 99 Tons</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Pavement Breaker</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Pile Driver (other Than Crane Mount)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Plant Oiler - Asphalt, Crusher</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Posthole Digger, Mechanical</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Power Plant</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Pumps - Water</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Quad 9, HD 41, D10 And Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Quick Tower - No Cab, Under 100 Feet In Height Based To Boom</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Remote Control Operator On Rubber Tired Earth Moving Equipment</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Rigger And Bellman</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td></td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Rigger/Signal Person, Bellman (Certified)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Rollagon</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Roller, Other Than Plant Mix</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Roller, Plant Mix Or Multi-lift Materials</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Roto-mill, Roto-grinder</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Saws - Concrete</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Scraper, Self Propelled Under 45 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Scrapers - Concrete &amp; Carry All</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Scrapers, Self-propelled: 45 Yards And Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Service Engineers - Equipment</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Shotcrete/gunite Equipment</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Shovel , Excavator, Backhoe, Tractors Under 15 Metric Tons.</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Shovel, Excavator, Backhoe, Over 30 Metric Tons To 50 Metric Tons</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Shovel, Excavator, Backhoes, Over 50 Metric Tons To 90 Metric Tons</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Subgrader, Topsider &amp; Screedman</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Tower Bucket Elevators</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Tower Crane Up: To 175' In Height, Base To Boom</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Transporters, All Track Or Truck Type</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Trenching Machines</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Truck Crane Oiler/driver - 100 Tons And Over</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Truck Crane Oiler/driver Under 100 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Truck Mount Portable Conveyor</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Welder</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Wheel Tractors, Farmall Type</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators</td>
<td>Yo Yo Pay Dozer</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Asphalt Plant Operator</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------</td>
<td>------------------------</td>
<td>--------</td>
<td>---</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Assistant Engineers</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Barrier Machine (zipper)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Batch Plant Operator: Concrete</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Bobcat</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Brokk - Remote Demolition Equipment</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Brooms</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Bump Cutter</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cableways</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Chipper</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Compressor</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Pump: Truck Mount With Boom Attachment Over 42m</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Finish Machine -laser Screed</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Pump - Mounted Or Trailer High Pressure Line Pump, Pump High Pressure</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Concrete Pump: Truck Mount With Boom Attachment Up To 42m</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Conveyors</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes, 100 Tons - 199 Tons, Or 150 Ft Of Boom (including Jib With Attachments)</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes, 200 tons to 299 tons, or 250' of boom (including jib with attachments)</td>
<td>$61.72</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes, Over 300 Tons, Or 300' Of Boom Including Jib With Attachments</td>
<td>$62.33</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: 20 Tons Through 44 Tons With Attachments</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: 300 tons and over, or 300' of boom (including jib with attachments)</td>
<td>$62.33</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: 45 Tons Through 99 Tons, Under 150' Of Boom</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: A-frame - 10 Tons And Under</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------</td>
<td>--------------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: Friction 200 tons and over. Tower Cranes: over 250' in height from base to boom.</td>
<td>$62.33</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: Friction cranes through 199 tons</td>
<td>$61.72</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Cranes: Through 19 Tons With Attachments A-frame Over 10 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Crusher</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Deck Engineer/deck Winches (power)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Derricks, On Building Work</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Dozers D-9 &amp; Under</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drill Oilers: Auger Type, Truck Or Crane Mount</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Drilling Machine</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Elevator And Man-lift: Permanent And Shaft Type</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Finishing Machine, Bidwell And Gamaco &amp; Similar Equipment</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Forklift: 3000 Lbs And Over With Attachments</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Forklifts: Under 3000 Lbs. With Attachments</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Grade Engineer: Using Blueprints, Cut Sheets,etc.</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Gradechecker/stakeman</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Guardrail punch/Auger</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Hard Tail End Dump Articulating Off- Road Equipment 45 Yards. &amp; Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Hard Tail End Dump Articulating Off-road Equipment Under 45 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Horizontal/directional Drill Locator</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Horizontal/directional Drill Operator</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Hydralifts/Boom Trucks Over 10 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td></td>
<td></td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Hydralifts/boom Trucks, 10 Tons And Under</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>--------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Loader, Overhead 8 Yards &amp; Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Loader, Overhead, 6 Yards. But Not Including 8 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Loaders, Overhead Under 6 Yards</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Loaders, Plant Feed</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Loaders: Elevating Type Belt</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Locomotives, All</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Material Transfer Device</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Mechanics, All (Leadmen - $0.50 Per Hour Over Mechanic)</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Motor patrol graders</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Mucking Machine, Mole, Tunnel Drill, Boring, Road Header And/or Shield</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Oil Distributors, Blower Distribution &amp; Mulch Seeding Operator</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Outside Hoists (elevators And Manlifts), Air Tuggers,strato</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Overhead, Bridge Type Crane: 20 Tons Through 44 Tons</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Overhead, Bridge Type: 100 Tons And Over</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Overhead, Bridge Type: 45 Tons Through 99 Tons</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Pavement Breaker</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Pile Driver (other Than Crane Mount)</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Plant Oiler - Asphalt, Crusher</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Posthole Digger, Mechanical</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Power Plant</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Pumps - Water</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Quad 9, HD 41, D10 And Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Quick Tower - No Cab, Under 100 Feet In Height Based To Boom</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Remote Control Operator On Rubber Tired Earth Moving Equipment</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rigger And Bellman</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rigger/Signal Person, Bellman (Certified)</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Rollagon</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Roller, Other Than Plant Mix</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Roller, Plant Mix Or Multi-lift Materials</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Roto-mill, Roto-grinder</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Saws - Concrete</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Scraper, Self Propelled Under 45 Yards</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Scrapers - Concrete &amp; Carry All</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Scrapers, Self-propelled: 45 Yards And Over</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Service Engineers - Equipment</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shotcrete/gunite Equipment</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovel, Excavator, Backhoe, Tractors Under 15 Metric Tons.</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovel, Excavator, Backhoe: Over 30 Metric Tons To 50 Metric Tons</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovel, Excavator, Backhoes, Tractors: 15 To 30 Metric Tons</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovel, Excavator, Backhoes: Over 50 Metric Tons To 90 Metric Tons</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Shovel, Excavator, Backhoes: Over 90 Metric Tons</td>
<td>$61.72</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Slipform Pavers</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Spreader, Topsider &amp; Screedman</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Subgrader Trimmer</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Tower Bucket Elevators</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators-Underground Sewer &amp; Water</td>
<td>Tower crane over 175' through 250' in height, base to boom</td>
<td>$61.10</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Tower Crane: Up To 175' In Height, Base To Boom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Transporters, All Track Or Truck Type</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Trenching Machines</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Truck Crane Oiler/driver - 100 Tons And Over</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Truck Crane Oiler/driver Under 100 Tons</td>
<td>$59.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Truck Mount Portable Conveyor</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Welder</td>
<td>$60.49</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Wheel Tractors, Farmall Type</td>
<td>$56.90</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Equipment Operators - Underground Sewer &amp; Water</td>
<td>Yo Yo Pay Dozer</td>
<td>$59.96</td>
<td>7A</td>
<td>3C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Journey Level In Charge</td>
<td>$48.54</td>
<td>5A</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Spray Person</td>
<td>$46.03</td>
<td>5A</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Equipment Operator</td>
<td>$48.54</td>
<td>5A</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Trimmer</td>
<td>$43.32</td>
<td>5A</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Power Line Clearance Tree Trimmers</td>
<td>Tree Trimmer Groundperson</td>
<td>$32.68</td>
<td>5A</td>
<td>4A</td>
</tr>
<tr>
<td>Pierce</td>
<td>Refrigeration &amp; Air Conditioning Mechanics</td>
<td>Mechanic</td>
<td>$68.76</td>
<td>5A</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Brick Mason</td>
<td>Journey Level</td>
<td>$23.77</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Carpenters</td>
<td>Journey Level</td>
<td>$42.86</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Cement Masons</td>
<td>Journey Level</td>
<td>$57.21</td>
<td>7A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Drywall Applicators</td>
<td>Journey Level</td>
<td>$42.86</td>
<td>5D</td>
<td>4C</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Drywall Tapers</td>
<td>Journey Level</td>
<td>$57.43</td>
<td>5P</td>
<td>1E</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Electricians</td>
<td>JOURNEY LEVEL</td>
<td>$29.29</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Glaziers</td>
<td>Journey Level</td>
<td>$40.25</td>
<td>7L</td>
<td>1H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Insulation Applicators</td>
<td>Journey Level</td>
<td>$18.70</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Laborers</td>
<td>Journey Level</td>
<td>$20.99</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Marble Setters</td>
<td>Journey Level</td>
<td>$22.67</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Painters</td>
<td>Journey Level</td>
<td>$26.13</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Plumbers &amp; Pipefitters</td>
<td>Journey Level</td>
<td>$47.77</td>
<td>5A</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Refrigeration &amp; Air Conditioning Mechanics</td>
<td>Journey Level</td>
<td>$39.88</td>
<td>5A</td>
<td>1G</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Sheet Metal Workers</td>
<td>Journey Level (Field or Shop)</td>
<td>$44.56</td>
<td>7F</td>
<td>1R</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Soft Floor Layers</td>
<td>Journey Level</td>
<td>$47.61</td>
<td>5A</td>
<td>3D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Position</td>
<td>Level</td>
<td>Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------</td>
<td>-------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Sprinkler Fitters (Fire Protection)</td>
<td>Journey Level</td>
<td>$44.98</td>
<td>5C</td>
<td>2R</td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Stone Masons</td>
<td>Journey Level</td>
<td>$22.67</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Terrazzo Workers</td>
<td>Journey Level</td>
<td>$11.50</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Terrazzo/Tile Finishers</td>
<td>Journey Level</td>
<td>$19.32</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Residential Tile Setters</td>
<td>Journey Level</td>
<td>$24.69</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Roofers</td>
<td>Journey Level</td>
<td>$48.87</td>
<td>5A</td>
<td>2O</td>
</tr>
<tr>
<td>Pierce</td>
<td>Roofers Using Irritable Bituminous Materials</td>
<td>Journey Level</td>
<td>$51.87</td>
<td>5A</td>
<td>2O</td>
</tr>
<tr>
<td>Pierce</td>
<td>Sheet Metal Workers</td>
<td>Journey Level (Field or Shop)</td>
<td>$78.17</td>
<td>7F</td>
<td>1E</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Boilermaker</td>
<td>$43.31</td>
<td>7M</td>
<td>1H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Carpenter</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Electrician</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Heat &amp; Frost Insulator</td>
<td>$67.93</td>
<td>5J</td>
<td>4H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Laborer</td>
<td>$19.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Machinist</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Operator</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Painter</td>
<td>$38.74</td>
<td>6A</td>
<td>1R</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Pipefitter</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Rigger</td>
<td>$15.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Sandblaster</td>
<td>$38.74</td>
<td>6A</td>
<td>1R</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair SHEET METAL</td>
<td></td>
<td>$35.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Shipfitter</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Trucker</td>
<td>$15.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Warehouse</td>
<td>$13.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Shipbuilding &amp; Ship Repair</td>
<td>Welder/burner</td>
<td>$33.71</td>
<td>6E</td>
<td>1B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Sign Makers &amp; Installers (Electrical)</td>
<td>Sign Installer</td>
<td>$26.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Sign Makers &amp; Installers (Electrical)</td>
<td>Sign Maker</td>
<td>$20.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Sign Makers &amp; Installers (Non-Electrical)</td>
<td>Sign Installer</td>
<td>$33.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Sign Makers &amp; Installers (Non-Electrical)</td>
<td>Sign Maker</td>
<td>$22.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Soft Floor Layers</td>
<td>Journey Level</td>
<td>$47.61</td>
<td>5A</td>
<td>3D</td>
</tr>
<tr>
<td>Pierce</td>
<td>Solar Controls For Windows</td>
<td>Journey Level</td>
<td>$11.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Sprinkler Fitters (Fire Protection)</td>
<td>Journey Level</td>
<td>$74.49</td>
<td>5C</td>
<td>1X</td>
</tr>
<tr>
<td>Pierce</td>
<td>Stage Rigging Mechanics (Non Structural)</td>
<td>Journey Level</td>
<td>$13.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Stone Masons</td>
<td>Journey Level</td>
<td>$55.82</td>
<td>5A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Street And Parking Lot Sweeper Workers</td>
<td>Journey Level</td>
<td>$21.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Surveyors</td>
<td>All Classifications</td>
<td>$35.68</td>
<td>Null</td>
<td>1</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telecommunication Technicians</td>
<td>Journey Level</td>
<td>$28.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Cable Splicer</td>
<td></td>
<td>$38.84</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Position</td>
<td>Hourly Rate</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------</td>
<td>---------</td>
<td>------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Hole Digger/Ground Person</td>
<td>$21.45</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Installer (Repairer)</td>
<td>$37.21</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Special Apparatus Installer I</td>
<td>$38.84</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Special Apparatus Installer II</td>
<td>$38.03</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Telephone Equipment Operator (Heavy)</td>
<td>$38.84</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Telephone Equipment Operator (Light)</td>
<td>$36.09</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Telephone Lineperson</td>
<td>$36.09</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Television Groundperson</td>
<td>$20.33</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Television Lineperson/Installer</td>
<td>$27.21</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Television System Technician</td>
<td>$32.55</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Television Technician</td>
<td>$29.18</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Telephone Line Construction - Outside</td>
<td>Tree Trimmer</td>
<td>$36.09</td>
<td>5A</td>
<td>2B</td>
</tr>
<tr>
<td>Pierce</td>
<td>Terrazzo Workers</td>
<td>Journey Level</td>
<td>$51.36</td>
<td>5A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Tile Setters</td>
<td>Journey Level</td>
<td>$51.36</td>
<td>5A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Tile, Marble &amp; Terrazzo Finishers</td>
<td>Journey Level</td>
<td>$20.74</td>
<td>5A</td>
<td>1M</td>
</tr>
<tr>
<td>Pierce</td>
<td>Traffic Control Stripers</td>
<td>Journey Level</td>
<td>$44.93</td>
<td>7A</td>
<td>1K</td>
</tr>
<tr>
<td>Pierce</td>
<td>Truck Drivers</td>
<td>Asphalt Mix</td>
<td>$22.49</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Truck Drivers</td>
<td>Dump Truck</td>
<td>$22.56</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Truck Drivers</td>
<td>Dump Truck And Trailer</td>
<td>$22.56</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Truck Drivers</td>
<td>Other Trucks</td>
<td>$30.20</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Truck Drivers</td>
<td>Transit Mixer</td>
<td>$33.17</td>
<td>6I</td>
<td>2H</td>
</tr>
<tr>
<td>Pierce</td>
<td>Well Drillers &amp; Irrigation Pump Installers</td>
<td>Irrigation Pump Installer</td>
<td>$16.09</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Well Drillers &amp; Irrigation Pump Installers</td>
<td>Oiler</td>
<td>$15.39</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Pierce</td>
<td>Well Drillers &amp; Irrigation Pump Installers</td>
<td>Well Driller</td>
<td>$18.30</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Overtime Codes

Overtime calculations are based on the hourly rate actually paid to the worker. On public works projects, the hourly rate must be not less than the prevailing rate of wage minus the hourly rate of the cost of fringe benefits actually provided for the worker.

1. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

B. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

C. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

D. The first two (2) hours before or after a five-eight (8) hour workweek day or a four-ten (10) hour workweek day and the first eight (8) hours worked the next day after either workweek shall be paid at one and one-half times the hourly rate of wage. All additional hours worked and all worked on Sundays and holidays shall be paid at double the hourly rate of wage.

E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

F. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

G. The first ten (10) hours worked on Saturdays and the first ten (10) hours worked on a fifth calendar weekday in a four-ten hour schedule, shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

H. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions or equipment breakdown) shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

I. All hours worked on Sundays and holidays shall also be paid at double the hourly rate of wage.

J. The first two (2) hours after eight (8) regular hours Monday through Friday and the first ten (10) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over ten (10) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage.

K. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

M. All hours worked on Saturdays (except makeup days if work is lost due to inclement weather conditions) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

N. All hours worked on Saturdays (except makeup days) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.
Overtime Codes Continued

1. O. The first ten (10) hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays, holidays and after twelve (12) hours, Monday through Friday and after ten (10) hours on Saturday shall be paid at double the hourly rate of wage.

P. All hours worked on Saturdays (except makeup days if circumstances warrant) and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

Q. The first two (2) hours after eight (8) regular hours Monday through Friday and up to ten (10) hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked in excess of ten (10) hours per day Monday through Saturday and all hours worked on Sundays and holidays (except Christmas day) shall be paid at double the hourly rate of wage. All hours worked on Christmas day shall be paid at two and one-half times the hourly rate of wage.

R. All hours worked on Sundays and holidays shall be paid at two times the hourly rate of wage.

S. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays and all other overtime hours worked, except Labor Day, shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays (except Labor Day) shall be paid at two times the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.

V. All hours worked on Sundays and holidays (except Thanksgiving Day and Christmas day) shall be paid at one and one-half times the hourly rate of wage. All hours worked on Thanksgiving Day and Christmas day shall be paid at double the hourly rate of wage.

W. All hours worked on Saturdays and Sundays (except make-up days due to conditions beyond the control of the employer) shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

X. The first four (4) hours after eight (8) regular hours Monday through Friday and the first twelve (12) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked over twelve (12) hours Monday through Saturday, Sundays and holidays shall be paid at double the hourly rate of wage. When holiday falls on Saturday or Sunday, the day before Saturday, Friday, and the day after Sunday, Monday, shall be considered the holiday and all work performed shall be paid at double the hourly rate of wage.

Y. All hours worked outside the hours of 5:00 am and 5:00 pm (or such other hours as may be agreed upon by any employer and the employee) and all hours worked in excess of eight (8) hours per day (10 hours per day for a 4 x 10 workweek) and on Saturdays and holidays (except labor day) shall be paid at one and one-half times the hourly rate of wage. (except for employees who are absent from work without prior approval on a scheduled workday during the workweek shall be paid at the straight-time rate until they have worked 8 hours in a day (10 in a 4 x 10 workweek) or 40 hours during that workweek.) All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and Labor Day shall be paid at double the hourly rate of wage.

Z. All hours worked on Saturdays and Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid the straight time rate of pay in addition to holiday pay.
Overtime Codes Continued

2. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

B. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

C. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at two times the hourly rate of wage.

F. The first eight (8) hours worked on holidays shall be paid at the straight hourly rate of wage in addition to the holiday pay. All hours worked in excess of eight (8) hours on holidays shall be paid at double the hourly rate of wage.

G. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

H. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on holidays shall be paid at one and one-half times the hourly rate of wage.

O. All hours worked on Sundays and holidays shall be paid at one and one-half times the hourly rate of wage.

R. All hours worked on Sundays and holidays and all hours worked over sixty (60) in one week shall be paid at double the hourly rate of wage.

U. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked over 12 hours in a day or on Sundays and holidays shall be paid at double the hourly rate of wage.

W. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage. On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The first eight (8) hours worked on the fifth day shall be paid at one and one-half times the hourly rate of wage. All other hours worked on the fifth, sixth, and seventh days and on holidays shall be paid at double the hourly rate of wage.

3. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

A. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at time and one-half the straight time rate. Hours worked over twelve hours (12) in a single shift and all work performed after 6:00 pm Saturday to 6:00 am Monday and holidays shall be paid at double the straight time rate of pay. Any shift starting between the hours of 6:00 pm and midnight shall receive an additional one dollar ($1.00) per hour for all hours worked that shift. The employer shall have the sole discretion to assign overtime work to employees. Primary consideration for overtime work shall be given to employees regularly assigned to the work to be performed on overtime situations. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.

C. Work performed in excess of eight (8) hours of straight time per day, or ten (10) hours of straight time per day when four ten (10) hour shifts are established, or forty (40) hours of straight time per week, Monday through Friday, or outside the normal shift, and all work on Saturdays shall be paid at one and one-half times the hourly rate of wage. All work performed after 6:00 pm Saturday to 5:00 am Monday and Holidays shall be paid at double the hourly rate of wage. After an employee has worked eight (8) hours at an applicable overtime rate, all additional hours shall be at the applicable overtime rate until such time as the employee has had a break of eight (8) hours or more.
3. D. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 15% over the hourly rate of wage. All other hours worked after 6:00 am on Saturdays, shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

E. All hours worked Sundays and holidays shall be paid at double the hourly rate of wage. Each week, once 40 hours of straight time work is achieved, then any hours worked over 10 hours per day Monday through Saturday shall be paid at double the hourly wage rate.

F. All hours worked on Saturday shall be paid at one and one-half times the hourly rate of wage. All hours worked on Sunday shall be paid at two times the hourly rate of wage. All hours worked on paid holidays shall be paid at two and one-half times the hourly rate of wage including holiday pay.

H. All work performed on Sundays between March 16th and October 14th and all Holidays shall be compensated for at two (2) times the regular rate of pay. Work performed on Sundays between October 15th and March 15th shall be compensated at one and one half (1-1/2) times the regular rate of pay.

I. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. In the event the job is down due to weather conditions during a five day work week (Monday through Friday,) or a four day ten hour work week (Tuesday through Friday,) then Saturday may be worked as a voluntary make up day at the straight time rate. However, Saturday shall not be utilized as a make-up day when a holiday falls on Friday. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

4. ALL HOURS WORKED IN EXCESS OF EIGHT (8) HOURS PER DAY OR FORTY (40) HOURS PER WEEK SHALL BE PAID AT ONE AND ONE-HALF TIMES THE HOURLY RATE OF WAGE.

A. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturdays, Sundays and holidays shall be paid at double the hourly rate of wage.

B. All hours worked over twelve (12) hours per day and all hours worked on holidays shall be paid at double the hourly rate of wage.

C. On Monday through Friday, the first four (4) hours of overtime after eight (8) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay, unless a four (4) day ten (10) hour workweek has been established. On a four (4) day ten (10) hour workweek scheduled Monday through Thursday, or Tuesday through Friday, the first two (2) hours of overtime after ten (10) hours of straight time work shall be paid at one and one half (1-1/2) times the straight time rate of pay. On Saturday, the first twelve (12) hours of work shall be paid at one and one half (1-1/2) times the straight time rate of pay, except that if the job is down on Monday through Friday due to weather conditions or other conditions outside the control of the employer, the first ten (10) hours on Saturday may be worked at the straight time rate of pay. All hours worked over twelve (12) hours in a day and all hours worked on Sunday and Holidays shall be paid at two (2) times the straight time rate of pay.
4. D. All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at double the hourly rate of wage. All hours worked on Saturday, Sundays and holidays shall be paid at double the hourly rate of pay. Rates include all members of the assigned crew.

EXCEPTION:
On all multipole structures and steel transmission lines, switching stations, regulating, capacitor stations, generating plants, industrial plants, associated installations and substations, except those substations whose primary function is to feed a distribution system, will be paid overtime under the following rates:

The first two (2) hours after eight (8) regular hours Monday through Friday of overtime on a regular workday, shall be paid at one and one-half times the hourly rate of wage. All hours in excess of ten (10) hours will be at two (2) times the hourly rate of wage. The first eight (8) hours worked on Saturday will be paid at one and one-half (1-1/2) times the hourly rate of wage. All hours worked in excess of eight (8) hours on Saturday, and all hours worked on Sundays and holidays will be at the double the hourly rate of wage.

All overtime eligible hours performed on the above described work that is energized, shall be paid at the double the hourly rate of wage.

E. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

On a four-day, ten-hour weekly schedule, either Monday thru Thursday or Tuesday thru Friday schedule, all hours worked after ten shall be paid at double the hourly rate of wage. The Monday or Friday not utilized in the normal four-day, ten hour work week, and Saturday shall be paid at one and one half (1½) times the regular shift rate for the first eight (8) hours. All other hours worked Monday through Saturday, and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

F. All hours worked between the hours of 6:00 pm and 6:00 am, Monday through Saturday, shall be paid at a premium rate of 20% over the hourly rate of wage. All hours worked on Sundays shall be paid at one and one-half times the hourly rate of wage. All hours worked on holidays shall be paid at double the hourly rate of wage.

G. All hours worked on Saturdays shall be paid at one and one-half times the hourly rate of wage. All hours worked Monday through Saturday over twelve (12) hours and all hours worked on Sundays and holidays shall be paid at double the hourly rate of wage.

H. The first two (2) hours after eight (8) regular hours Monday through Friday and the first eight (8) hours on Saturday shall be paid at one and one-half times the hourly rate of wage. All other overtime hours worked, except Labor Day, and all hours on Sunday shall be paid at double the hourly rate of wage. All hours worked on Labor Day shall be paid at three times the hourly rate of wage.


**Holiday Codes Continued**


   **Z.** Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, And Christmas Day (7). If a holiday falls on Saturday, the preceding Friday shall be considered as the holiday. If a holiday falls on Sunday, the following Monday shall be considered as the holiday.

7. **A.** Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday Which Falls On A Sunday Shall Be Observed As A Holiday On The Following Monday. If any of the listed holidays falls on a Saturday, the preceding Friday shall be a regular work day.

   **B.** Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday and Saturday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

   **C.** Holidays: New Year's Day, Martin Luther King Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

   **D.** Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran’s Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (8). Unpaid Holidays: President’s Day. Any paid holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any paid holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

   **E.** Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

   **F.** Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas day and Christmas day (8). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.


   **H.** Holidays: New Year's Day, Martin Luther King Jr. Day, Independence Day, Memorial Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (9). Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.
7.  
I.  
Friday After Thanksgiving Day, The Day Before Christmas Day And Christmas Day (9). Any holiday which falls on 
a Sunday shall be observed as a holiday on the following Monday. Any holiday which falls on a Saturday shall be 
observed as a holiday on the preceding Friday.

J.  
Any holiday which falls on a Sunday shall be observed as a holiday on the following Monday. Any holiday which 
falls on a Saturday shall be observed as a holiday on the preceding Friday.

K.  
Holidays: New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, the Friday and Saturday after 
Thanksgiving Day, And Christmas Day (8). Any holiday which falls on a Sunday shall be observed as a holiday on 
the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

L.  
before Christmas Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday 
on the following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

M.  
Paid Holidays: New Year's Day, The Day after or before New Year's Day, President’s Day, Memorial Day, 
Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, And the Day 
after or before Christmas Day (10). Any holiday which falls on a Sunday shall be observed as a holiday on the 
following Monday. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

N.  
Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on 
the following Monday. When Christmas falls on a Saturday, the preceding Friday shall be observed as a holiday.

P.  
Thanksgiving Day, And Christmas Day (7). Any holiday which falls on a Sunday shall be observed as a holiday on 
the following Monday.

Q.  
Thanksgiving Day, the Last Working Day before Christmas Day and Christmas Day (8). Any holiday which falls on 
a Sunday shall be observed as a holiday on the following Monday. If any of the listed holidays falls on a Saturday, the 
preceding Friday shall be a regular work day.

R.  
Paid Holidays: New Year's Day, the day after or before New Year’s Day, President’s Day, Memorial Day, 
Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and the day 
after or before Christmas Day (10). If any of the listed holidays fall on Saturday, the preceding Friday shall be observed 
as the holiday. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a 
holiday and compensated accordingly.

S.  
Thanksgiving Day, Christmas Day, the Day after Christmas, and A Floating Holiday (9). If any of the listed holidays 
falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly.
Holiday Codes Continued

T. Paid Holidays: New Year’s Day, the Day after or before New Year’s Day, President’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and The Day after or before Christmas Day. If any of the listed holidays falls on a Sunday, the day observed by the Nation shall be considered a holiday and compensated accordingly. Any holiday which falls on a Saturday shall be observed as a holiday on the preceding Friday.

Note Codes

8. D. Workers working with supplied air on hazmat projects receive an additional $1.00 per hour.

L. Workers on hazmat projects receive additional hourly premiums as follows - Level A: $0.75, Level B: $0.50, and Level C: $0.25.

M. Workers on hazmat projects receive additional hourly premiums as follows: Levels A & B: $1.00, Levels C & D: $0.50.

N. Workers on hazmat projects receive additional hourly premiums as follows - Level A: $1.00, Level B: $0.75, Level C: $0.50, and Level D: $0.25.

P. Workers on hazmat projects receive additional hourly premiums as follows - Class A Suit: $2.00, Class B Suit: $1.50, Class C Suit: $1.00, and Class D Suit: $0.50.

Q. The highest pressure registered on the gauge for an accumulated time of more than fifteen (15) minutes during the shift shall be used in determining the scale paid.

R. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. These classifications are only effective on or after August 31, 2012.

S. Effective August 31, 2012 – A Traffic Control Supervisor shall be present on the project whenever flagging or spotting or other traffic control labor is being utilized. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.

T. Effective August 31, 2012 – A Traffic Control Laborer performs the setup, maintenance and removal of all temporary traffic control devices and construction signs necessary to control vehicular, bicycle, and pedestrian traffic during construction operations. Flaggers and Spotters shall be posted where shown on approved Traffic Control Plans or where directed by the Engineer. All flaggers and spotters shall possess a current flagging card issued by the State of Washington, Oregon, Montana, or Idaho. This classification is only effective on or after August 31, 2012.
8. **U.** Workers on hazmat projects receive additional hourly premiums as follows – Class A Suit: $2.00, Class B Suit: $1.50, and Class C Suit: $1.00. Workers performing underground work receive an additional $0.40 per hour for any and all work performed underground, including operating, servicing and repairing of equipment. The premium for underground work shall be paid for the entire shift worked. Workers who work suspended by a rope or cable receive an additional $0.50 per hour. The premium for work suspended shall be paid for the entire shift worked. Workers who do “pioneer” work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation receive an additional $0.50 per hour.

V. In addition to the hourly wage and fringe benefits, the following depth and enclosure premiums shall be paid. The premiums are to be calculated for the maximum depth and distance into an enclosure that a diver reaches in a day. The premiums are to be paid one time for the day and are not used in calculating overtime pay.

Depth premiums apply to depths of fifty feet or more. Over 50' to 100' - $2.00 per foot for each foot over 50 feet. Over 101' to 150' - $3.00 per foot for each foot over 101 feet. Over 151' to 220' - $4.00 per foot for each foot over 220 feet. Over 221' - $5.00 per foot for each foot over 221 feet.

Enclosure premiums apply when divers enter enclosures (such as pipes or tunnels) where there is no vertical ascent and is measured by the distance travelled from the entrance. 25' to 300' - $1.00 per foot from entrance. 300' to 600' - $1.50 per foot beginning at 300'. Over 600' - $2.00 per foot beginning at 600'.
Washington State Department of Labor and Industries
Policy Statement
(Regarding the Production of "Standard" or "Non-standard" Items)

Below is the department's (State L&I's) list of criteria to be used in determining whether a prefabricated item is "standard" or "non-standard". For items not appearing on WSDOT's predetermined list, these criteria shall be used by the Contractor (and the Contractor's subcontractors, agents to subcontractors, suppliers, manufacturers, and fabricators) to determine coverage under RCW 39.12. The production, in the State of Washington, of non-standard items is covered by RCW 39.12, and the production of standard items is not. The production of any item outside the State of Washington is not covered by RCW 39.12.

1. Is the item fabricated for a public works project? If not, it is not subject to RCW 39.12. If it is, go to question 2.

2. Is the item fabricated on the public works jobsite? If it is, the work is covered under RCW 39.12. If not, go to question 3.

3. Is the item fabricated in an assembly/fabrication plant set up for, and dedicated primarily to, the public works project? If it is, the work is covered by RCW 39.12. If not, go to question 4.

4. Does the item require any assembly, cutting, modification or other fabrication by the supplier? If not, the work is not covered by RCW 39.12. If yes, go to question 5.

5. Is the prefabricated item intended for the public works project typically an inventory item which could reasonably be sold on the general market? If not, the work is covered by RCW 39.12. If yes, go to question 6.

6. Does the specific prefabricated item, generally defined as standard, have any unusual characteristics such as shape, type of material, strength requirements, finish, etc? If yes, the work is covered under RCW 39.12.

Any firm with questions regarding the policy, WSDOT's Predetermined List, or for determinations of covered and non-covered workers shall be directed to State L&I at (360) 902-5330.
Below is a list of potentially prefabricated items, originally furnished by WSDOT to Washington State Department of Labor and Industries, that may be considered non-standard and therefore covered by the prevailing wage law, RCW 39.12. Items marked with an X in the "YES" column should be considered to be non-standard and therefore covered by RCW 39.12. Items marked with an X in the "NO" column should be considered to be standard and therefore not covered. Of course, exceptions to this general list may occur, and in that case shall be evaluated according to the criteria described in State and L&I's policy statement.

<table>
<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Metal rectangular frames, solid metal covers, herringbone grates, and bi-directional vaned grates for Catch Basin Types 1, 1L, 1P, and 2 and Concrete Inlets. See Std. Plans</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2. Metal circular frames (rings) and covers, circular grates, and prefabricated ladders for Manhole Types 1, 2, and 3, Drywell Types 1, 2, and 3 and Catch Basin Type 2. See Std. Plans</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Prefabricated steel grate supports and welded grates, metal frames and dual vaned grates, and Type 1, 2, and 3 structural tubing grates for Drop Inlets. See Std. Plans.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes smaller than 60 inch diameter.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. Concrete Pipe - Plain Concrete pipe and reinforced concrete pipe Class 2 to 5 sizes larger than 60 inch diameter.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. Corrugated Steel Pipe - Steel lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, 1 thru 5.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7. Corrugated Aluminum Pipe - Aluminum lock seam corrugated pipe for culverts and storm sewers, sizes 30 inch to 120 inches in diameter. May also be treated, #5.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>8. Anchor Bolts &amp; Nuts - Anchor Bolts and Nuts, for mounting sign structures, luminaries and other items, shall be made from commercial bolt stock. See Contract Plans and Std. Plans for size and material type.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. Aluminum Pedestrian Handrail - Pedestrian handrail conforming to the type and material specifications set forth in the contract plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10. Major Structural Steel Fabrication - Fabrication of major steel items such as trusses, beams, girders, etc., for bridges.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>11. Minor Structural Steel Fabrication - Fabrication of minor steel items such as special hangers, brackets, access doors for structures, access ladders for irrigation boxes, bridge expansion joint systems, etc., involving welding, cutting, punching and/or boring of holes. See Contact Plans for item description and shop drawings.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>12. Aluminum Bridge Railing Type BP - Metal bridge railing conforming to the type and material specifications set forth in the Contract Plans. Welding of aluminum shall be in accordance with Section 9-28.14(3).</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>13. Concrete Piling--Precast-Prestressed concrete piling for use as 55 and 70 ton concrete piling. Concrete to conform to Section 9-19.1 of Std. Spec.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>14. Precast Manhole Types 1, 2, and 3 with cones, adjustment sections and flat top slabs. See Std. Plans.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>15. Precast Drywell Types 1, 2, and with cones and adjustment Sections. See Std. Plans.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>17. Precast Concrete Inlet - with adjustment sections,</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>See Std. Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Precast Drop Inlet Type 1 and 2 with metal grate supports.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>See Std. Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Precast Grate Inlet Type 2 with extension and top units.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>See Std. Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Metal frames, vaned grates, and hoods for Combination Inlets. See Std. Plans</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Precast Concrete Utility Vaults - Precast Concrete utility vaults of various</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>sizes. Used for in ground storage of utility facilities and controls. See Contract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plans for size and construction requirements. Shop drawings are to be provided for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>approval prior to casting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Vault Risers - For use with Valve Vaults and Utilities</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>See Std. Plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Valve Vault - For use with underground utilities.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>See Contract Plans for details.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Precast Concrete Barrier - Precast Concrete Barrier for use as new barrier or</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>may also be used as Temporary Concrete Barrier. Only new state approved barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td>may be used as permanent barrier.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Reinforced Earth Wall Panels – Reinforced Earth Wall Panels in size and</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>shape as shown in the Plans. Fabrication plant has annual approval for methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and materials to be used. See Shop Drawing. Fabrication at other locations may</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be approved, after facilities inspection, contact HQ. Lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Precast Concrete Walls - Precast Concrete Walls - tilt-up wall panel in size</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>and shape as shown in Plans. Fabrication plant has annual approval for methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and materials to be used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>27. Precast Railroad Crossings - Concrete Crossing Structure Slabs.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>28. 12, 18 and 26 inch Standard Precast Prestressed Girder – Standard Precast</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Prestressed Girder for use in structures. Fabricator plant has annual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>approval of methods and materials to be used. Shop Drawing to be provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for approval prior to casting girders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>See Std. Spec. Section 6-02.3(25)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Prestressed Concrete Girder Series 4-14 - Prestressed Concrete Girders for</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>use in structures. Fabricator plant has annual approval of methods and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>materials to be used. Shop Drawing to be provided for approval prior to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>casting girders. See Std. Spec. Section 6-02.3(25)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Prestressed Tri-Beam Girder - Prestressed Tri-Beam Girders for use in</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>structures. Fabricator plant has annual approval of methods and materials to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be used. Shop Drawing to be provided for approval prior to casting girders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>See Std. Spec. Section 6-02.3(25)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Prestressed Precast Hollow-Core Slab – Precast Prestressed Hollow-core slab</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>for use in structures. Fabricator plant has annual approval of methods and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>materials to be used. Shop Drawing to be provided for approval prior to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>casting girders. See Std. Spec. Section 6-02.3(25)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Prestressed-Bulb Tee Girder - Bulb Tee Prestressed Girder for use in</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>structures. Fabricator plant has annual approval of methods and materials to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>be used. Shop Drawing to be provided for approval prior to casting girders.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>See Std. Spec. Section 6-02.3(25)A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Monument Case and Cover</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>See Std. Plan.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>34. Cantilever Sign Structure - Cantilever Sign Structure fabricated from steel tubing meeting AASHTO-M-183. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>35. Mono-tube Sign Structures - Mono-tube Sign Bridge fabricated to details shown in the Plans. Shop drawings for approval are required prior to fabrication.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>36. Steel Sign Bridges - Steel Sign Bridges fabricated from steel tubing meeting AASHTO-M-138 for Aluminum Alloys. See Std. Plans, and Contract Plans for details. The steel structure shall be galvanized after fabrication in accordance with AASHTO-M-111.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>37. Steel Sign Post - Fabricated Steel Sign Posts as detailed in Std Plans. Shop drawings for approval are to be provided prior to fabrication</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>38. Light Standard-Prestressed - Spun, prestressed, hollow concrete poles.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>39. Light Standards - Lighting Standards for use on highway illumination systems, poles to be fabricated to conform with methods and materials as specified on Std. Plans. See Special Provisions for pre-approved drawings.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>40. Traffic Signal Standards - Traffic Signal Standards for use on highway and/or street signal systems. Standards to be fabricated to conform with methods and material as specified on Std. Plans. See Special Provisions for pre-approved drawings</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>41. Precast Concrete Sloped Mountable Curb (Single and DualFaced) See Std. Plans.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>42. Traffic Signs - Prior to approval of a Fabricator of Traffic Signs, the sources of the following materials must be submitted and approved for reflective sheeting, legend material, and aluminum sheeting. <strong>NOTE:</strong> *** Fabrication inspection required. Only signs tagged &quot;Fabrication Approved&quot; by WSDOT Sign Fabrication Inspector to be installed**</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>43. Cutting &amp; bending reinforcing steel</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>44. Guardrail components</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>45. Aggregates/Concrete mixes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. Asphalt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. Fiber fabrics</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>48. Electrical wiring/components</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>49. treated or untreated timber pile</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>50. Girder pads (elastomeric bearing)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>51. Standard Dimension lumber</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>52. Irrigation components</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ITEM DESCRIPTION</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>53. Fencing materials</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>54. Guide Posts</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>55. Traffic Buttons</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>56. Epoxy</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>57. Cribbing</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>58. Water distribution materials</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>59. Steel &quot;H&quot; piles</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>60. Steel pipe for concrete pile casings</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>61. Steel pile tips, standard</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>62. Steel pile tips, custom</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Prefabricated items specifically produced for public works projects that are prefabricated in a county other than the county wherein the public works project is to be completed, the wage for the offsite prefabrication shall be the applicable prevailing wage for the county in which the actual prefabrication takes place.

It is the manufacturer of the prefabricated product to verify that the correct county wage rates are applied to work they perform.

See RCW 39.12.010
(The definition of "locality" in RCW 39.12.010(2) contains the phrase "wherein the physical work is being performed." The department interprets this phrase to mean the actual work site.)
WSDOT’s List of State Occupations not applicable to Heavy and Highway Construction Projects

This project is subject to the state hourly minimum rates for wages and fringe benefits in the contract provisions, as provided by the state Department of Labor and Industries. The following list of occupations, is comprised of those occupations that are not normally used in the construction of heavy and highway projects. When considering job classifications for use and / or payment when bidding on, or building heavy and highway construction projects for, or administered by WSDOT, these Occupations will be excepted from the included "Washington State Prevailing Wage Rates For Public Work Contracts" documents.

- Building Service Employees
- Electrical Fixture Maintenance Workers
- Electricians - Motor Shop
- Heating Equipment Mechanics
- Industrial Engine and Machine Mechanics
- Industrial Power Vacuum Cleaners
- Inspection, Cleaning, Sealing of Water Systems by Remote Control
- Laborers - Underground Sewer & Water
- Machinists (Hydroelectric Site Work)
- Modular Buildings
- Playground & Park Equipment Installers
- Power Equipment Operators - Underground Sewer & Water
- Residential *** ALL ASSOCIATED RATES ***
- Sign Makers and Installers (Non-Electrical)
- Sign Makers and Installers (Electrical)
- Stage Rigging Mechanics (Non Structural)

The following occupations may be used only as outlined in the preceding text concerning "WSDOT's list for Suppliers - Manufacturers - Fabricators"

- Fabricated Precast Concrete Products
- Metal Fabrication (In Shop)

Definitions for the Scope of Work for prevailing wages may be found at the Washington State Department of Labor and Industries web site and in WAC Chapter 296-127.
Coverage and exemptions of workers involved in the production and delivery of gravel, concrete, asphalt, or similar materials.

(1) The materials covered under this section include but are not limited to: Sand, gravel, crushed rock, concrete, asphalt, or other similar materials.

(2) All workers, regardless of by whom employed, are subject to the provisions of chapter 39.12 RCW when they perform any or all of the following functions:

(a) They deliver or discharge any of the above-listed materials to a public works project site:

   (i) At one or more point(s) directly upon the location where the material will be incorporated into the project; or

   (ii) At multiple points at the project; or

   (iii) Adjacent to the location and coordinated with the incorporation of those materials.

(b) They wait at or near a public works project site to perform any tasks subject to this section of the rule.

(c) They remove any materials from a public works construction site pursuant to contract requirements or specifications (e.g., excavated materials, materials from demolished structures, clean-up materials, etc.).

(d) They work in a materials production facility (e.g., batch plant, borrow pit, rock quarry, etc.,) which is established for a public works project for the specific, but not necessarily exclusive, purpose of supplying materials for the project.

(e) They deliver concrete to a public works site regardless of the method of incorporation.

(f) They assist or participate in the incorporation of any materials into the public works project.
(3) All travel time that relates to the work covered under subsection (2) of this section requires the payment of prevailing wages. Travel time includes time spent waiting to load, loading, transporting, waiting to unload, and delivering materials. Travel time would include all time spent in travel in support of a public works project whether the vehicle is empty or full. For example, travel time spent returning to a supply source to obtain another load of material for use on a public works site or returning to the public works site to obtain another load of excavated material is time spent in travel that is subject to prevailing wage. Travel to a supply source, including travel from a public works site, to obtain materials for use on a private project would not be travel subject to the prevailing wage.

(4) Workers are not subject to the provisions of chapter 39.12 RCW when they deliver materials to a stockpile.

(a) A "stockpile" is defined as materials delivered to a pile located away from the site of incorporation such that the stockpiled materials must be physically moved from the stockpile and transported to another location on the project site in order to be incorporated into the project.

(b) A stockpile does not include any of the functions described in subsection (2)(a) through (f) of this section; nor does a stockpile include materials delivered or distributed to multiple locations upon the project site; nor does a stockpile include materials dumped at the place of incorporation, or adjacent to the location and coordinated with the incorporation.

(5) The applicable prevailing wage rate shall be determined by the locality in which the work is performed. Workers subject to subsection (2)(d) of this section, who produce such materials at an off-site facility shall be paid the applicable prevailing wage rates for the county in which the off-site facility is located. Workers subject to subsection (2) of this section, who deliver such materials to a public works project site shall be paid the applicable prevailing wage rates for the county in which the public works project is located.

[Statutory Authority: Chapter 39.12 RCW, RCW 43.22.051 and 43.22.270. 08-24-101, § 296-127-018, filed 12/2/08, effective 1/2/09. Statutory Authority: Chapters 39.04 and 39.12 RCW and RCW 43.22.270. 92-01-104 and 92-08-101, § 296-127-018, filed 12/18/91 and 4/1/92, effective 8/31/92.]
General Decision Number: WA180001 01/12/2018  WA1

Superseded General Decision Number: WA20170001

State: Washington

Construction Type: Highway

Counties: Washington Statewide.

HIGHWAY (Excludes D.O.E. Hanford Site in Benton and Franklin Counties)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number     Publication Date
0    01/05/2018
1    01/12/2018

CARP0001-008 06/01/2017

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$32.32</td>
<td>16.14</td>
</tr>
<tr>
<td>$43.42</td>
<td>18.44</td>
</tr>
<tr>
<td>$33.41</td>
<td>16.14</td>
</tr>
<tr>
<td>$32.32</td>
<td>16.14</td>
</tr>
<tr>
<td>$75.16</td>
<td>16.14</td>
</tr>
<tr>
<td>$36.58</td>
<td>16.14</td>
</tr>
<tr>
<td>$37.58</td>
<td>16.14</td>
</tr>
<tr>
<td>$34.41</td>
<td>16.14</td>
</tr>
<tr>
<td>$40.58</td>
<td>16.14</td>
</tr>
</tbody>
</table>

CARPENTER & DIVER CLASSIFICATIONS:

GROUP 1: Carpenter

GROUP 2: Millwright, machine erector

GROUP 3: Piledriver - includes driving, pulling, cutting,
placing collars, setting, welding, or creosote treated material, on all piling

GROUP 4: Bridge carpenters

GROUP 5: Diver Wet

GROUP 6: Diver Tender, Manifold Operator, ROV Operator

GROUP 7: Diver Standby, Bell/Vehicle or Submersible operator
   Not Under Pressure

GROUP 8: Assistant Tender, ROV Tender/Technician

GROUP 9: Manifold Operator-Mixed Gas

ZONE PAY:
ZONE 1  0-40 MILES            FREE
ZONE 2  41-65 MILES           $2.25/PER HOUR
ZONE 3  66-100 MILES          $3.25/PER HOUR
ZONE 4  OVER 100 MILES        $4.75/PER HOUR

DISPATCH POINTS:
   CARPENTERS/MILLWRIGHTS: PASCO (515 N Neel Street) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

   CARPENTERS/FILEDRIVER: SPOKANE (127 E. AUGUSTA AVE.) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

   CARPENTERS: WENATCHEE (27 N. CHELAN) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

   CARPENTERS: COEUR D' ALENE (1839 N. GOVERNMENT WAY) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

   CARPENTERS: MOSCOW (302 N. JACKSON) or Main Post Office of established residence of employee (Whichever is closest to the worksite).

DEPTCH PAY FOR DIVERS BELOW WATER SURFACE:
50-100 feet  $2.00 per foot
101-150 feet $3.00 per foot
151-220 feet $4.00 per foot
221 feet and deeper $5.00 per foot

PREMIUM PAY FOR DIVING IN ENCLOSURES WITH NO VERTICAL ASCENT:
0-25 feet  Free
26-300 feet $1.00 per Foot

SATURATION DIVING:
The standby rate applies until saturation starts. The saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. The diver rate shall be paid for all saturation hours.
WORK IN COMBINATION OF CLASSIFICATIONS:

Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

HAZMAT PROJECTS:

Anyone working on a HAZMAT job (task), where HAZMAT certification is required, shall be compensated at a premium, in addition to the classification working in as follows:

LEVEL D + $.25 per hour - This is the lowest level of protection. No respirator is used and skin protection is minimal.

LEVEL C + $.50 per hour - This level uses an air purifying respirator or additional protective clothing.

LEVEL B + $.75 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit".

LEVEL A +$1.00 per hour - This level utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line.

----------------------------------------------------------------

CARPO0003-006 10/01/2011

SOUTHWEST WASHINGTON:  CLARK, COWLITZ, KLIKKTAT,
LEWIS(Piledriver only), PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the Pacific Ocean), SKAMANIA AND WAHKIAKUM COUNTIES and INCLUDES THE ENTIRE PENINSULA WEST OF WILLAPA BAY

SEE ZONE DESCRIPTION FOR CITIES BASE POINTS

ZONE 1:

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARPENTERS.................$ 32.04</td>
<td>14.18</td>
</tr>
<tr>
<td>DIVERS TENDERS............$ 36.34</td>
<td>14.18</td>
</tr>
<tr>
<td>DIVERS.....................$ 77.08</td>
<td>14.18</td>
</tr>
<tr>
<td>DRYWALL....................$ 27.56</td>
<td>14.18</td>
</tr>
<tr>
<td>MILLWRIGHTS................$ 32.19</td>
<td>14.18</td>
</tr>
<tr>
<td>PILEDIVERS................$ 33.04</td>
<td>14.18</td>
</tr>
</tbody>
</table>

DEPTH PAY:

50 TO 100 FEET  $1.00 PER FOOT OVER 50 FEET
101 TO 150 FEET  $1.50 PER FOOT OVER 101 FEET
151 TO 200 FEET  $2.00 PER FOOT OVER 151 FEET

Zone Differential (Add up Zone 1 rates):

Zone 2 - $0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: ASTORIA, LONGVIEW, PORTLAND, THE DALLES, AND VANCOUVER, (NOTE: All dispatches for Washington State Counties: Cowlitz, Wahkiakum and Pacific shall be from Longview Local #1707 and mileage shall be computed from that point.)

ZONE 1: Projects located within 30 miles of the respective city hall of the above mentioned cities
ZONE 2: Projects located more than 30 miles and less than 40 miles of the respective city of the above mentioned cities
ZONE 3: Projects located more than 40 miles and less than 50 miles of the respective city of the above mentioned cities
ZONE 4: Projects located more than 50 miles and less than 60 miles of the respective city of the above mentioned cities.
ZONE 5: Projects located more than 60 miles and less than 70 miles of the respective city of the above mentioned cities
ZONE 6: Projects located more than 70 miles of the respected city of the above mentioned cities

----------------------------------------------------------------

CARP0770-003 06/01/2015

Rates Fringes

Carpenter

CENTRAL WASHINGTON:
CHELAN, DOUGLAS (WEST OF THE 120TH MERIDIAN),
KITTITAS, OKANOGAN (WEST OF THE 120TH MERIDIAN) AND YAKIMA COUNTIES
CARPENTERS ON CREOSOTE MATERIAL...................$ 40.46 13.66
CARPENTERS...................$ 40.36 13.66
DIVERS TENDER...................$ 35.02 14.00
DIVERS.......................$ 73.44 14.00
MILLWRIGHT AND MACHINE ERECTORS.....................$ 41.86 13.66
PILEDRIIVER, DRIVING,
PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING.......$ 40.61 13.66

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDIVERS

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle Olympia Bellingham
Auburn Bremerton Anacortes
Renton Shelton Yakima
Aberdeen-Hoquiam Tacoma Wenatchee
Ellensburg Everett Port Angeles
Centralia         Mount Vernon   Sunnyside
Chelan            Pt. Townsend

Zone Pay:
0 -25 radius miles Free
26-35 radius miles $1.00/hour
36-45 radius miles $1.15/hour
46-55 radius miles $1.35/hour
Over 55 radius miles $1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT
AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall,
Tacoma City center, and Everett City center

Zone Pay:
0 -25 radius miles Free
26-45 radius miles $.70/hour
Over 45 radius miles $1.50/hour

----------------------------------------------------------------
CARP0770-006 06/01/2016

Rates          Fringes

Carpenter
Western Washington:
Clallam, Grays Harbor,
Island, Jefferson, King,
Kitsap, Lewis (excludes
piledrivers only), Mason,
Pacific (North of a
straight line made by
extending the north
boundary line of Wahkiakum
County west to the Pacific
Ocean), Pierce, San Juan,
Skagit, Snohomish,
Thurston and Whatcom
Counties
Bridge Carpenters........$ 40.92 14.59
Carpenters on Creosote
Material..................$ 40.46 13.66
Carpenters...............$ 40.92 14.59
Divers Tender............$ 44.67 13.66
Divers..................$ 93.56 13.66
Millwright and Machine
Erectors..................$ 41.86 13.66
Piledriver, Driving,
Pulling, Cutting, Placing
Collars, Setting, Welding
Or Creosote Treated
Material, All Piling......$ 40.61 13.66

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL
CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDRIVERS)

Hourly Zone Pay shall be paid on jobs located outside of the
free zone computed from the city center of the following
listed cities:

Seattle          Olympia        Bellingham
Auburn           Bremerton      Anacortes
Renton           Shelton        Yakima
Aberdeen-Hoquiam Tacoma         Wenatchee
Ellensburg       Everett        Port Angeles
Centralia        Mount Vernon   Sunnyside
Chelan           Pt. Townsend

Zone Pay:
0 - 25 radius miles  Free
26 - 35 radius miles $1.00/hour
36 - 45 radius miles $1.15/hour
46 - 55 radius miles $1.35/hour
Over 55 radius miles $1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay:
0 - 25 radius miles Free
26 - 45 radius miles $.70/hour
Over 45 radius miles $1.50/hour

CALLAM, JEFFERSON, KING AND KITSAP COUNTIES

Rates Fringes
CABLE SPLICER....................$ 46.87 3%+15.96
ELECTRICIAN......................$ 47.56 3%+19.31

CLARK, KLICKITAT AND SKAMANIA COUNTIES

Rates Fringes
CABLE SPLICER....................$ 44.22 21.50
ELECTRICIAN......................$ 40.20 22.18

HOURLY ZONE PAY:

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Portland, The Dalles, Hood River, Tillamook, Seaside and Astoria

Zone Pay:
Zone 1: 31-50 miles $1.50/hour
Zone 2: 51-70 miles $3.50/hour
Zone 3: 71-90 miles $5.50/hour
Zone 4: Beyond 90 miles  $9.00/hour

*These are not miles driven. Zones are based on Delorrne Street Atlas USA 2006 plus.

----------------------------------------------------------------

ELEC0048-029 01/01/2017

COWLITZ AND WAHKIAKUM COUNTY

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER.........</td>
<td>$44.22</td>
</tr>
<tr>
<td>ELECTRICIAN............</td>
<td>$40.20</td>
</tr>
</tbody>
</table>

----------------------------------------------------------------

* ELEC0073-001 01/01/2018

ADAMS, FERRY, LINCOLN, PEND OREILLE, SPOKANE, STEVENS, WHITMAN COUNTIES

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER.........</td>
<td>$34.10</td>
</tr>
<tr>
<td>ELECTRICIAN............</td>
<td>$33.25</td>
</tr>
</tbody>
</table>

----------------------------------------------------------------

ELEC0076-002 08/30/2017

GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, AND THURSTON COUNTIES

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER.........</td>
<td>$40.05</td>
</tr>
<tr>
<td>ELECTRICIAN............</td>
<td>$37.86</td>
</tr>
</tbody>
</table>

----------------------------------------------------------------

ELEC0112-005 06/01/2017

ASOTIN, BENTON, COLUMBIA, FRANKLIN, GARFIELD, KITTTITAS, WALLA WALLA, YAKIMA COUNTIES

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER.........</td>
<td>$42.95</td>
</tr>
<tr>
<td>ELECTRICIAN............</td>
<td>$40.90</td>
</tr>
</tbody>
</table>

----------------------------------------------------------------

ELEC0191-003 06/01/2017

ISLAND, SAN JUAN, SNOHOMISH, SKAGIT AND WHATCOM COUNTIES

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringe</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER.........</td>
<td>$44.23</td>
</tr>
<tr>
<td>ELECTRICIAN............</td>
<td>$43.45</td>
</tr>
</tbody>
</table>

----------------------------------------------------------------

ELEC0191-004 06/01/2017

CHELAN, DOUGLAS, GRANT AND OKANOGAN COUNTIES
<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABLE SPLICER</td>
<td>$ 40.82</td>
</tr>
<tr>
<td>ELECTRICIAN</td>
<td>$ 40.65</td>
</tr>
</tbody>
</table>

ENGI0302-003 06/01/2017

CHelan (West of the 120th Meridian), Clallam, Douglas (West of the 120th Meridian), Grays Harbor, Island, Jefferson, King, Kitsap, Kittitas, Mason, Okanogan (West of the 120th Meridian), San Juana, Skagit, Snohomish, Whatcom and Yakima (West of the 120th Meridian) Counties

Zone 1 (0-25 radius miles):

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER EQUIPMENT OPERATOR</td>
<td></td>
</tr>
<tr>
<td>Group 1A...........$ 41.90</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 1AA..........$ 42.52</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 1AAA........$ 43.13</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 1           $ 41.29</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 2           $ 40.76</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 3           $ 40.29</td>
<td>19.20</td>
</tr>
<tr>
<td>Group 4           $ 37.70</td>
<td>19.20</td>
</tr>
</tbody>
</table>

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) - $1.00
Zone 3 (Over 45 radius miles) - $1.30

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons, or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes 200 to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill
and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self propelled 45 yards and over; Slipform pavers; Transporters, all truck or track type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator- Concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-overhead, bridge type-20 tons through 44 tons; Chipper; Concrete Pump-truck mount with boom attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel, backhoe-3yards and under; Finishing Machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders-overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill,roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrade trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blaw knox-roadtec; Truck crane oiler/driver-100 tons and over; Truck Mount portable conveyor; Yo Yo Pay dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; A-frame crane over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loader-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrpers-concrete and carry-all; Service engineer-equipment; Trenching machines; Truck Crane Oiler/Driver under 100 tons; Tractors, backhoe 75 hp and under

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete finish machine-laser screed; Cranes-A frame-10 tons and under; Elevator and Manlift-permanent or shaft type; Gradechecker, Stakehop; Forklifts under 3000 lbs. with attachments; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger, mechanical; Power plant; Pumps, water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

HANDLING OF HAZARDOUS WASTE MATERIALS:

Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not
outfitted with protective clothing

H-2 Class "C" Suit - Base wage rate plus $ .25 per hour.

H-3 Class "B" Suit - Base wage rate plus $ .50 per hour.

H-4 Class "A" Suit - Base wage rate plus $ .75 per hour.

<table>
<thead>
<tr>
<th>POWER EQUIPMENT OPERATOR</th>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP 1</td>
<td>$ 27.11</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 2</td>
<td>$ 27.43</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 3</td>
<td>$ 28.04</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 4</td>
<td>$ 28.20</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 5</td>
<td>$ 28.36</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 6</td>
<td>$ 28.64</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 7</td>
<td>$ 28.91</td>
<td>15.20</td>
</tr>
<tr>
<td>GROUP 8</td>
<td>$ 30.01</td>
<td>15.20</td>
</tr>
</tbody>
</table>

ZONE DIFFERENTIAL (Add to Zone 1 rate): Zone 2 - $2.00

Zone 1: Within 45 mile radius of Spokane, Pasco, Washington; Lewiston, Idaho

Zone 2: Outside 45 mile radius of Spokane, Pasco, Washington; Lewiston, Idaho

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Fireman & Heater Tender; Hydro-seeder, Mulcher, Nozzelman, Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine; Crane Oiler-Driver (CLD required) & Cable Tender, Mucking Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog; Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber
Stacker, hydra-lift & similar; Gin Trucks (pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled); Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat (Skid Steer); Boring Machine (earth); Boring Machine (rock under 8 inch bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginau or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumor, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Dozer/Tractor (up to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pumpcrete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond); Equipment Serviceman; Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Plant Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8 inch bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe & Hoe Ram (under 3/4 yd.); Carrydeck & Boom Truck (under 25 tons); Cranes (25 tons & under), all attachments including clamshell, dragline; Derricks & Stifflegs (under 65 tons); Drilling Equipment; (8 inch bit & over) (Robbins, reverse circulation & similar); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operator (self-propelled); Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar); Grade Checker

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers) (Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (motor patrol & attachments); Cable Controller (dispatcher); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver;
Cranes (over 25 tons, to and including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Drill Doctor; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.); Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Rollerman (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all, rubber-tired; Screed Operator; Shovel (under 3 yds.); Trenching Machines (7 ft. depth & over); Tug Boat Operator Vactor guzzler, super sucker; Lime Batch Tank Operator (REcycle Train); Mobile Crusher Operator (Recycle Train)

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds & over); Blade (finish & bluetoop) Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Concrete Cleaning/Decontamination machine operator; Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragline; Derricks & Stiffleys (65 tons & over); Elevating Belt (Holland type); Heavy equipment robotics operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Whirleys & Hammerheads, ALL; H.D. Mechanic; H.D. Welder; Hydraulic Platform Trailers (Goldhofer, Shaurerly and similar); Ultra High Pressure Waterjet Cutting Tool System Operator (30,000 psi); Vacuum Blasting Machine Operator

GROUP 8: Cranes (85 tons and over, and all climbing, overhead, rail and tower), all attachments including clamshell, dragline; Loaders (overhead and front-end, 10 yards and over); Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower)
180 ft to 250 ft $ .50 over scale
Over 250 ft $ .80 over scale

NOTE:
In computing the length of the boom on Tower Cranes, they shall be measured from the base of the Tower to the point of the boom.

HAZMAT:
Anyone working on HAZMAT jobs, working with supplied air shall receive $1.00 an hour above classification.

----------------------------------------------------------------
ENGI0612-012 06/01/2014

LEWIS, PIERCE, PACIFIC (portion lying north of a parallel line extending west from the northern boundary of Wahkaikum County to the sea) AND THURSTON COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.
Zone 1 (0-25 radius miles):

<table>
<thead>
<tr>
<th>Classification</th>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP 1A</td>
<td>$38.39</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 1AA</td>
<td>$38.96</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 1AAA</td>
<td>$39.52</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 1</td>
<td>$37.84</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 2</td>
<td>$37.35</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 3</td>
<td>$36.93</td>
<td>17.40</td>
</tr>
<tr>
<td>GROUP 4</td>
<td>$34.57</td>
<td>17.40</td>
</tr>
</tbody>
</table>

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $1.00
Zone 3 (Over 45 radius miles) = $1.30

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom
(including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom
(including jib with attachments; Tower crane over 175 ft in
height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom
(including jib with attachments); Crane-overhead, bridge
type, 100 tons and over; Tower crane up to 175 ft in height
base to boom; Loaders-overhead, 8 yards and over; Shovels,
excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft
of boom (including jib with attachments); Crane-overhead,
bridge type, 45 tons thru 99 tons; Derricks on building
work; Excavator, shovel, backhoes over 3 yards and under 6
yards; Hard tail end dump articulating off-road equipment
45 yards and over; Loader- overhead, 6 yards to, but not
including, 8 yards; Mucking machine, mole, tunnel, drill
and/or shield; Quad 9 HD 41, D-10; Remote control operator
on rubber tired earth moving equipment; Rollagon; Scrapers-
self-propelled 45 yards and over; Slipform pavers;
Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-
concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with
attachments; Crane-Overhead, bridge type, 20 tons through
44 tons; Chipper; Concrete pump-truck mount with boom
attachment; Crusher; Deck engineer/deck winches (power);
Drilling machine; Excavator, shovel, backhoe-3 yards and
under; Finishing machine, Bidwell, Gamaco and similar
equipment; Guardrail punch; Loaders, overhead under 6
yards; Loaders-plant feed; Locomotives-all; Mechanics- all;
Mixers, asphalt plant; Motor patrol graders, finishing;
Piledriver (other than crane mount); Roto-mill, roto-
grinder; Screedman, spreader, topside operator-Blaw Knox,
Cedar Rapids, Jaeger, Caterpillar, Barbar Green;
Scraper-self-propelled, hard tail end dump, articulating off-road equipment—under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox—Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler-asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing, Class "D" Suit - Base wage rate plus $.50 per hour.
H-2 Class "C" Suit - Base wage rate plus $1.00 per hour.
H-3 Class "B" Suit - Base wage rate plus $1.50 per hour.
H-4 Class "A" Suit - Base wage rate plus $2.00 per hour.
CLARK, COWLITZ, Klickitat, Pacific (South), Skamania, and Wahkiakum Counties

Power Equipment Operators: Zone 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>$41.65</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 1A</td>
<td>$43.73</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 1B</td>
<td>$45.82</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 2</td>
<td>$39.74</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 3</td>
<td>$38.59</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 4</td>
<td>$37.51</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 5</td>
<td>$36.27</td>
<td>14.35</td>
</tr>
<tr>
<td>Group 6</td>
<td>$33.05</td>
<td>14.35</td>
</tr>
</tbody>
</table>

Zone Differential (add to Zone 1 rates):
Zone 2 - $3.00
Zone 3 - $6.00

For the following metropolitan counties: Multnomah; Clackamas; Marion; Washington; Yamhill; and Columbia; Clark; and Cowlitz County, Washington with modifications as indicated:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, west of the western boundary of Mt. Hood National Forest and west of Mile Post 30 on Interstate 84 and west of Mile Post 30 on State Highway 26 and west of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or projects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: Albany; Bend; Coos Bay; Eugene; Grants Pass; Klamath Falls; Medford; Roseburg

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.
All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

Group 1
Concrete Batch Plan and or Wet mix three (3) units or more; Crane, Floating one hundred and fifty (150) ton but less than two hundred and fifty (250) ton; Crane, two hundred (200) ton through two hundred ninety nine (299) ton with two hundred foot (200') boom or less (including jib, inserts and/or attachments); Crane, ninety (90) ton through one hundred ninety nine (199) ton with over two hundred (200') boom including jib, inserts and/or attachments; Crane, Tower Crane with one hundred seventy five foot (175') tower or less and with less than two hundred foot (200') jib; Crane, Whirley ninety (90) ton and over; Helicopter when used in erecting work

Group 1A
Crane, floating two hundred fifty (250) ton and over; Crane, two hundred (200) ton through two hundred ninety nine (299) ton with over two hundred foot (200') boom (including jib, inserts and/or attachments); Crane, three hundred (300) ton through three hundred ninety nine (399) ton; Crane, Tower Crane with over one hundred seventy five foot (175') tower or over two hundred foot (200') jib; Crane, tower Crane on rail system or 2nd tower or more in work radius

Group 1B
Crane, three hundred (300) ton through three hundred ninety nine (399) ton, with over two hundred foot (200') boom (including jib, inserts and/or attachments); Floating crane, three hundred fifty (350) ton and over; Crane, four hundred (400) ton and over

Group 2
Asphalt Plant (any type); Asphalt Roto-Mill, pavement profiler eight foot (8') lateral cut and over; Auto Grader or "Trimmer"; Blade, Robotic; Bulldozer, Robotic Equipment (any type); Bulldozer, over one hundred twenty thousand (120,000) lbs. and above; Concrete Batch Plant and/or Wet Mix one (1) and two (2) drum; Concrete Diamond Head Profiler; Canal Trimmer; Concrete, Automatic Slip Form Paver (Assistant to the Operator required); Crane, Boom Truck fifty (50) ton and with over one hundred fifty foot (150') boom and over; Crane, Floating (derrick barge) thirty (30) ton but less than one hundred fifty (150) ton; Crane, Cableway twenty-five (25) ton and over; Crane, Floating Clamshell three (3) cu. Yds. And over; Crane, ninety (90) ton through one hundred ninety nine (199) ton up to and including two hundred foot (200') of boom (including jib inserts and/or attachments); Crane, fifty (50) ton through eighty nine (89) ton with over one hundred fifty foot (150') boom (including jib inserts and/or attachments); Crane, Whirley under ninety (90) ton; Crusher
Plant; Excavator over one hundred thirty thousand (130,000) lbs.; Loader one hundred twenty thousand (120,000) lbs. and above; Remote Controlled Earth Moving Equipment; Shovel, Dragline, Clamshell, five (5) cu. Yds. And over; Underwater Equipment remote or otherwise, when used in construction work; Wheel Excavator any size

Group 3

Bulldozer, over seventy thousand (70,000) lbs. up to and including one hundred twenty thousand (120,000) lbs.; Crane, Boom Truck fifty (50) ton and over with less than one hundred fifty foot (150') boom; Crane, fifty (50) ton through eighty nine (89) ton with one hundred fifty foot (150') boom or less (including jib inserts and/or attachments); Crane, Shovel, Dragline or Clamshell three (3) cu. yds. but less than five (5) cu. Yds.; Excavator over eighty thousand (80,000) lbs. through one hundred thirty thousand (130,000) lbs.; Loader sixty thousand (60,000) lbs. and less than one hundred twenty thousand (120,000) lbs.

Group 4

Asphalt, Screed; Asphalt Paver; Asphalt Roto-Mill, pavement profiler, under eight foot (8') lateral cut; Asphalt, Material Transfer Vehicle Operator; Back Filling Machine; Backhoe, Robotic, track and wheel type up to and including twenty thousand (20,000) lbs. with any attachments; Blade (any type); Boatman; Boring Machine; Bulldozer over twenty thousand (20,000) lbs. and more than one hundred (100) horse up to seventy thousand (70,000) lbs.; Cable-Plow (any type); Cableway up to twenty five (25) ton; Cat Drill (John Henry); Chippers; Compactor, multi-engine; Compactor, Robotic; Compactor with blade self-propelled; Concrete, Breaker; Concrete, Grout Plant; Concrete, Mixer Mobile; Concrete, Paving Road Mixer; Concrete, Reinforced Tank Banding Machine; Crane, Boom Truck twenty (20) ton and under fifty (50) ton; Crane, Bridge Locomotive, Gantry and Overhead; Crane, Carry Deck; Crane, Chicago Boom and similar types; Crane, Derrick Operator, under one hundred (100) ton; Crane, Floating Clamshell, Dragline, etc. Operator, under three (3) cu. yds. Or less than thirty (30) ton; Crane, under fifty (50) ton; Crane, Quick Tower under one hundred foot (100') in height and less than one hundred fifty foot (150') jib (on rail included); Diesel-Electric Engineer (Plant or Floating); Directional Drill over twenty thousand (20,000) lbs. pullback; Drill Cat Operator; Drill Doctor and/or Bit Grinder; Driller, Percussion, Diamond, Core, Cable, Rotary and similar type; Excavator Operator over twenty thousand (20,000) lbs. through eighty thousand (80,000) lbs.; Generator Operator; Grade-all; Guardrail Machines, i.e. punch, auger, etc.; Hammer Operator (Piledriver); Hoist, stiff leg, guy derrick or similar type, fifty (50) ton and over; Hoist, two (2) drums or more; Hydro Axe (loader mounted or similar type); Jack Operator, Elevating Barges, Barge Operator, self-unloading; Loader Operator, front end and overhead, twenty five thousand (25,000) lbs. and less than sixty thousand (60,000) lbs.; Log Skidders; Piledriver Operator (not crane type); Pipe, Bending, Cleaning, Doping and Wrapping
Machines; Rail, Ballast Tamper Multi-Purpose; Rubber-tired Dozers and Pushers; Scraper, all types; Side-Boom; Skip Loader, Drag Box; Strump Grinder (loader mounted or similar type); Surface Heater and Planer; Tractor, rubber-tired, over fifty (50) HP Flywheel; Trenching Machine three foot (3') depth and deeper; Tub Grinder (used for wood debris); Tunnel Boring Machine Mechanic; Tunnel, Mucking Machine; Ultra High Pressure Water Jet Cutting Tool System Operator; Vacuum Blasting Machine Operator; Water pulls, Water wagons

Group 5

Asphalt, Extrusion Machine; Asphalt, Roller (any asphalt mix); Asphalt, Roto-Mill pavement profiler ground man; Bulldozer, twenty thousand (20,000) lbs. or less, or one hundred (100) horse or less; Cement Pump; Chip Spreading Machine; Churn Drill and Earth Boring Machine; Compactor, self-propelled without blade; Compressor, (any power) one thousand two hundred fifty (1,250) cu. ft. and over, total capacity; Concrete, Batch Plant Quality control; Concrete, Combination Mixer and compressor operator, gunite work; Concrete, Curb Machine, Mechanical Berm, Curb and/or Curb and Gutter; Concrete, Finishing Machine; Concrete, Grouting Machine; Concrete, Internal Full Slab Vibrator Operator; Concrete, Joint Machine; Concrete, Mixer single drum, any capacity; Concrete, Paving Machine eight foot (8') or less; Concrete, Planer; Concrete, Pump; Concrete, Pump Truck; Concrete, Pumpcrete Operator (any type); Concrete, Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Conveyored Material Hauler; Crane, Boom Truck under twenty (20) tons; Crane, Boom Type lifting device, five (5) ton capacity or less; Drill, Directional type less than twenty thousand (20,000) lbs. pullback; Fork Lift, over ten (10) ton or Robotic; Helicopter Hoist; Hoist Operator, single drum; Hydraulic Backhoe track type up to and including twenty thousand (20,000) lbs.; Hydraulic Backhoe wheel type (any make); Laser Screed; Loaders, rubber-tired type, less than twenty five thousand (25,000) lbs.; Pavement Grinder and/or Grooving Machine (riding type); Pipe, cast in place Pipe Laying Machine; Pulva-Mixer or similar types; Pump Operator, more than five (5) pumps (any size); Rail, Ballast Compactor, Regulator, or Tamper machines; Service Oiler (Greaser); Sweeper Self-Propelled; Tractor, Rubber-Tired, fifty (50) HP flywheel and under; Trenching Machine Operator, maximum digging capacity three foot (3') depth; Tunnel, Locomotive, Dinkey; Tunnel, Power Jumbo setting slip forms, etc.

Group 6

Asphalt, Pugmill (any type); Asphalt, Raker; Asphalt, Truck Mounted Asphalt Spreader, with Screed; Auger Oiler; Broom, self-propelled; Compressor Operator (any power) under 1,250 cu. ft. total capacity; Concrete Curing Machine (riding type); Concrete Saw; Conveyor Operator or Assistant; Crane, Tugger; Crusher Feederman; Crusher Oiler; Deckhand; Drill, Directional Locator; Fork Lift; Grade Checker; Guardrail Punch Oiler; Hydrographic Seeder Machine, straw, pulp or seed; Hydrostatic Pump Operator;
Mixer Box (CTB, dry batch, etc.); Oiler; Plant Oiler; Pump (any power); Rail, Brakeman, Switchman, Motorman; Rail, Tamping Machine, mechanical, self-propelled; Rigger; Roller grading (not asphalt); Truck, Crane Oiler-Driver

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRONWORKER</td>
<td>$32.89</td>
</tr>
<tr>
<td>ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA AND WHITMAN COUNTIES</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRONWORKER</td>
<td>$34.12</td>
</tr>
<tr>
<td>CLARK, COWLITZ, KLIKKTAT, PACIFIC, SKAMANIA, AND WAHKAIKUM COUNTIES</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRONWORKER</td>
<td>$32.89</td>
</tr>
<tr>
<td>YAKIMA, KITTITAS AND CHELAN COUNTIES</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRONWORKER</td>
<td>$40.52</td>
</tr>
<tr>
<td>CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAF, LEWIS, MASON, PIERCE, SKAGIT, SNOHOMISH, THURSTON, AND WHATCOM COUNTIES</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABORER (PASCO)</td>
<td></td>
</tr>
<tr>
<td>GROUP 1</td>
<td>$24.66</td>
</tr>
<tr>
<td>GROUP 2</td>
<td>$26.76</td>
</tr>
<tr>
<td>GROUP 3</td>
<td>$27.03</td>
</tr>
<tr>
<td>PASCO AREA: ADAMS, BENTON, COLUMBIA, DOUGLAS (East of 120th Meridian), FERRY, FRANKLIN, GRANT, OKANOGAN, WALLA WALLA</td>
<td></td>
</tr>
<tr>
<td>SPOKANE AREA: ASOTIN, GARFIELD, LINCOLN, PEND OREILLE, SPOKANE, STEVENS &amp; WHITMAN COUNTIES</td>
<td></td>
</tr>
</tbody>
</table>
Zone Differential (Add to Zone 1 rate): $2.00

BASE POINTS: Spokane, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.
Zone 2: 45 radius miles and over from the main post office.

LABORERS CLASSIFICATIONS

GROUP 1: Flagman; Landscape Laborer; Scaleman; Traffic Control Maintenance Laborer (to include erection and maintenance of barricades, signs and relief of flagperson); Window Washer/Cleaner (detail cleanup, such as, but not limited to cleaning floors, ceilings, walls, windows, etc. prior to final acceptance by the owner)

GROUP 2: Asbestos Abatement Worker; Brush Hog Feeder; Carpenter Tender; Cement Handler; Clean-up Laborer; Concrete Crewman (to include stripping of forms, hand operating jacks on slip form construction, application of concrete curing compounds, pumpcrete machine, signaling, handling the nozzle of squeezcrete or similar machine, 6 inches and smaller); Confined Space Attendant; Concrete Signalman; Crusher Feeder; Demolition (to include clean-up, burning, loading, wrecking and salvage of all material); Dumpman; Fence Erector; Firewatch; Form Cleaning Machine Feeder, Stacker; General Laborer; Grout Machine Header Tender; Guard Rail (to include guard rails, guide and reference posts, sign posts, and right-of-way markers); Hazardous Waste Worker, Level D (no respirator is used and skin protection is minimal); Miner, Class "A" (to include all bull gang, concrete crewman, dumpman and pumpcrete crewman, including distributing pipe, assembly & dismantle, and nipper); Nipper; Riprap Man; Sandblast Tailhooseman; Scaffold Erector (wood or steel); Stake Jumper; Structural Mover (to include separating foundation, preparation, cribbing, shoring, jacking and unloading of structures); Tailhooseman (water nozzle); Timber Bucker and Faller (by hand); Track Laborer (RR); Truck Loader; Well-Point Man; All Other Work Classifications Not Specially Listed Shall Be Classified As General Laborer

GROUP 3: Asphalt Roller, walking; Cement Finisher Tender; Concrete Saw, walking; Demolition Torch; Dope Pot Firemen, non-mechanical; Driller Tender (when required to move and position machine); Form Setter, Paving; Grade Checker using level; Hazardous Waste Worker, Level C (uses a chemical "splash suit" and air purifying respirator); Jackhammer Operator; Miner, Class "B" (to include brakeman, finisher, vibrator, form setter); Nozzleman (to include squeeze and
flo-crete nozzle); Nozzleman, water, air or steam; Pavement Breaker (under 90 lbs.); Pipelayer, corrugated metal culvert; Pipelayer, multi-plate; Pot Tender; Power Buggy Operator; Power Tool Operator, gas, electric, pneumatic; Railroad Equipment, power driven, except dual mobile power spiker or puller; Railroad Power Spiker or Puller, dual mobile; Rodder and Spreader; Tamper (to include operation of Barco, Essex and similar tampers); Trencher, Shawnee; Tugger Operator; Wagon Drills; Water Pipe Liner; Wheelbarrow (power driven)

GROUP 4: Air and Hydraulic Track Drill; Asphalt Raker; Brush Machine (to include horizontal construction joint cleanup brush machine, power propelled); Caisson Worker, free air; Chain Saw Operator and Fallar; Concrete Stack (to include laborers when laborers working on free standing concrete stacks for smoke or fume control above 40 feet high); Gunite (to include operation of machine and nozzle); Hazardous Waste Worker, Level B (uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Laser Beam Operator (to include grade checker and elevation control); Miner, Class C (to include miner, nozzleman for concrete, laser beam operator and rigger on tunnels); Monitor Operator (air track or similar mounting); Mortar Mixer; Nozzleman (to include jet blasting nozzleman, over 1,200 lbs., jet blast machine power propelled, sandblast nozzle); Pavement Breaker (90 lbs. and over); Pipelayer (to include working topman, caulker, collarman, jointer, mortarman, rigger, jacker, shorer, valve or meter installer); Pipewrapper; Plasterer Tender; Vibrators (all)

GROUP 5 - Drills with Dual Masts; Hazardous Waste Worker, Level A (utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line); Miner Class "D", (to include raise and shaft miner, laser beam operator on raises and shafts)

----

COUNTIES EAST OF THE 120TH MERIDIAN: ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA, WHITMAN

<table>
<thead>
<tr>
<th>Labor</th>
<th>Rate</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hod Carrier</td>
<td>$26.76</td>
<td>11.30</td>
</tr>
</tbody>
</table>

----

LABORER
GROUP 1.....................$ 24.85            10.99
GROUP 2.....................$ 28.45            10.99
GROUP 3.....................$ 35.54            10.99
GROUP 4.....................$ 36.41            10.99
GROUP 5.....................$ 36.99            10.99

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1:  Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2:  Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3:  General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical "splash suit" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4:  Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator;
Concrete Saw Operator; Drill Operator (hydraulic, diamond, airtrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and gas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

LABORER

GROUP 1.................$ 24.85  10.99
GROUP 2.................$ 28.45  10.99
GROUP 3.................$ 35.54  10.99
GROUP 4.................$ 36.41  10.99
GROUP 5.................$ 36.99  10.99

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall
ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical "splash suit" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, air/hydraulic); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and gas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

-----------------------------------------------
LABO0335-001 06/01/2017

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE
MADE BY EXTENDING THE NORTH BOUNDARY LINE OF WAHKIAKUM COUNTY WEST TO THE PACIFIC OCEAN), SKAMANIA AND WAHKIAKUM COUNTIES

<table>
<thead>
<tr>
<th>Laborers:</th>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ZONE 1:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROUP 1:</td>
<td>$31.36</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 2:</td>
<td>$32.01</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 3:</td>
<td>$32.49</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 4:</td>
<td>$32.90</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 5:</td>
<td>$28.68</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 6:</td>
<td>$26.07</td>
<td>10.89</td>
</tr>
<tr>
<td>GROUP 7:</td>
<td>$22.62</td>
<td>10.89</td>
</tr>
</tbody>
</table>

Zone Differential (Add to Zone 1 rates):
- Zone 2: $0.65
- Zone 3: $1.15
- Zone 4: $1.70
- Zone 5: $2.75

BASE POINTS: LONGVIEW AND VANCOUVER

- **ZONE 1:** Projects within 30 miles of the respective city all.
- **ZONE 2:** More than 30 miles but less than 40 miles from the respective city hall.
- **ZONE 3:** More than 40 miles but less than 50 miles from the respective city hall.
- **ZONE 4:** More than 50 miles but less than 80 miles from the respective city hall.
- **ZONE 5:** More than 80 miles from the respective city hall.

LABORERS CLASSIFICATIONS

**GROUP 1:** Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing, Concrete; Demolition, Wrecking and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Median Rail Reference Post, Guide Post, Right of Way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or Similar Types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man- Crusher (aggregate when used)

**GROUP 2:** Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and
similar types; Clean-up Nozzleman-Green Cutter (concrete, rock, etc.); Concrete Power Buggyman; Concrete Laborer; Crusher Feeder; Demolition and Wrecking Charred Materials; Gunite Nozzleman Tender; Gunite or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Tool Operators (includes but not limited to: Dry Pack Machine; Jackhammer; Chipping Guns; Paving Breakers); Pipe Doping and Wrapping; Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (Wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bullgang (underground)

GROUP 3: Asbestos Removal; Bit Grinder; Drill Doctor; Drill Operators, air tracks, cat drills, wagon drills, rubber-mounted drills, and other similar types including at crusher plants; Gunite Nozzleman; High Scalers, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Concrete Saw Operator; Powdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (Dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks, Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timberman; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (pipelaying)-applicable when employee assigned to move, set up, align; Laser Beam; Tunnel Miners; Motorman-Dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping or Planting Laborers

--------------------------------------------------------------------------------------------------------------------------
LABO0335-019 09/01/2013

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hod Carrier</td>
<td>$ 30.47</td>
</tr>
</tbody>
</table>

--------------------------------------------------------------------------------------------------------------------------
LABO0348-003 06/01/2017

CHELAN, DOUGLAS (W OF 12TH MERIDIAN), KITTITAS, AND YAKIMA COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABORER</td>
<td></td>
</tr>
<tr>
<td>GROUP 1</td>
<td>$ 21.21</td>
</tr>
<tr>
<td>GROUP 2</td>
<td>$ 24.31</td>
</tr>
<tr>
<td>GROUP 3</td>
<td>$ 26.60</td>
</tr>
<tr>
<td>GROUP 4</td>
<td>$ 27.24</td>
</tr>
<tr>
<td>GROUP 5</td>
<td>$ 27.70</td>
</tr>
</tbody>
</table>
BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, 
TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT.
TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective 
city hall
ZONE 2 - More than 25 but less than 45 radius miles from the 
respective city hall
ZONE 3 - More than 45 radius miles from the respective city 
hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective 
city hall
ZONE 2 - More than 25 radius miles from the respective city 
hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window 
Washer/Cleaner (detail clean-up, such as but not limited to 
cleaning floors, ceilings, walls, windows, etc., prior to 
final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; 
Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating 
Screed; Asbestos Abatement Laborer; Ballast Regulator 
Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter 
Tender; Cement Finisher Tender; Change House or Dry Shack; 
Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; 
Clean-up Laborer; Concrete Form Stripper; Curing Laborer; 
Demolition (wrecking and moving including charred 
material); Ditch Digger; Dump Person; Fine Graders; 
Firewatch; Form Setter; Gabian Basket Builders; Grout 
Machine Tender; Grinders; Guardrail Erector; Hazardous 
Waste Worker (Level C: uses a chemical "splash suit" and 
air purifying respirator); Maintenance Person; Material 
Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale 
Person; Sloper Sprayer; Signal Person; Stock Piler; Stake 
Hopper; Toolroom Man (at job site); Topper-Tailer; Track 
Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); 
Clary Power Spreader; Concrete Dumper/Chute Operator; 
Concrete Saw Operator; Drill Operator (hydraulic, diamond, 
airtrac); Faller and Bucker Chain Saw; Grade Checker and 
Transit Person; Groutmen (pressure) including post tension 
beams; Hazardous Waste Worker (Level B: uses same 
respirator protection as Level A. A supplied air line is
provided in conjunction with a chemical "splash suit"); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzlemen (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

LABO0440-001 06/01/2017

KING COUNTY

<table>
<thead>
<tr>
<th>LABORER</th>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LABORER GROUP 1..............</td>
<td>$ 24.85</td>
<td>10.99</td>
</tr>
<tr>
<td>LABORER GROUP 2..............</td>
<td>$ 28.45</td>
<td>10.99</td>
</tr>
<tr>
<td>LABORER GROUP 3..............</td>
<td>$ 35.54</td>
<td>10.99</td>
</tr>
<tr>
<td>LABORER GROUP 4..............</td>
<td>$ 36.41</td>
<td>10.99</td>
</tr>
<tr>
<td>LABORER GROUP 5..............</td>
<td>$ 36.99</td>
<td>10.99</td>
</tr>
</tbody>
</table>

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $1.00
ZONE 3 - $1.30

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 radius miles from the respective city hall

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $2.25

LABORERS CLASSIFICATIONS
GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C: uses a chemical "splash suit" and air purifying respirator); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, airtrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B: uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glass operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Mortarman and Hodcarrier; Powderman; Re-Timberman; Hazardous Waste Worker (Level A: utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line).

----------------------------------------------------------------
PAIN0005-002 07/01/2017

STATEWIDE EXCEPT CLARK, COWLITZ, KLiCKiTAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

Rates Fringes
### CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAINTER.........$ 20.82</td>
<td>7.44</td>
</tr>
</tbody>
</table>

* PAIN0005-006 07/01/2017

### ADAMS, ASOTIN; BENTON AND FRANKLIN (EXCEPT HANFORD SITE); CHelan, COLUMBIA, DOUGLAS, FERRY, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAINTER.........$ 30.29</td>
<td>11.10</td>
</tr>
<tr>
<td>Over 30'/Swing Stage Work..$ 22.20</td>
<td>7.98</td>
</tr>
<tr>
<td>Brush, Roller, Striping, Steam-cleaning and Spray....$ 25.19</td>
<td>11.10</td>
</tr>
<tr>
<td>Lead Abatement, Asbestos Abatement...............$ 21.50</td>
<td>7.98</td>
</tr>
</tbody>
</table>

*$.70 shall be paid over and above the basic wage rates listed for work on swing stages and high work of over 30 feet.

### CLARK, COWLITZ, Klickitat, Pacific, Skamania, and Wahkiakum Counties

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painter........$ 23.02</td>
<td>11.02</td>
</tr>
<tr>
<td>High work - All work 60 ft. or higher............$ 23.77</td>
<td>11.02</td>
</tr>
<tr>
<td>Spray and Sandblasting......$ 23.02</td>
<td>11.02</td>
</tr>
<tr>
<td>Painters:</td>
<td>HIGHWAY &amp; PARKING LOT</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Striper</td>
<td>$34.87</td>
</tr>
</tbody>
</table>

PLAS0072-004 06/01/2017

ADAMS, ASOTIN, BENTON, CHelan, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, KITTitas, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN, AND YAKIMA COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMENT MASON/CONCRETE FINISHER</td>
<td></td>
</tr>
<tr>
<td>Zone 1</td>
<td>$28.23</td>
</tr>
<tr>
<td>Zone Differential (Add to Zone 1 rate): Zone 2 - $2.00</td>
<td></td>
</tr>
</tbody>
</table>

BASE POINTS: Spokane, Pasco, Lewiston; Wenatchee
Zone 1: 0 - 45 radius miles from the main post office
Zone 2: Over 45 radius miles from the main post office

PLAS0528-001 06/01/2017

CLALLAM, COWLITZ, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC, PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON, WAHKIAKUM AND WHATCOM COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMENT MASON</td>
<td></td>
</tr>
<tr>
<td>CEMENT MASON............</td>
<td>$40.52</td>
</tr>
<tr>
<td>COMPOSITION, TROWEL</td>
<td></td>
</tr>
<tr>
<td>MACHINE, GRINDER, POWER</td>
<td></td>
</tr>
<tr>
<td>TOOLS, GUNNITE NOZZLE......</td>
<td>$41.02</td>
</tr>
<tr>
<td>TROWLING MACHINE OPERATOR</td>
<td></td>
</tr>
<tr>
<td>ON COMPOSITION.................</td>
<td>$41.02</td>
</tr>
</tbody>
</table>

PLAS0555-002 06/01/2017

CLARK, Klickitat AND Skamania COUNTIES

ZONE 1:

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEMENT MASON</td>
<td></td>
</tr>
<tr>
<td>CEMENT MASON DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD..</td>
<td>$32.87</td>
</tr>
<tr>
<td>CEMENT MASON ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD</td>
<td>$32.87</td>
</tr>
<tr>
<td>CEMENT MASON........</td>
<td>$31.50</td>
</tr>
<tr>
<td>COMPOSITION WORKERS AND</td>
<td></td>
</tr>
</tbody>
</table>

POWER MACHINERY OPERATORS...$ 32.19  17.62

Zone Differential (Add To Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 3.00

BASE POINTS: BEND, CORVALLIS, EUGENE, MEDFORD, PORTLAND, SALEM, THE DALLES, VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall
ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall

--------------------------------------------------------------------------------
TEAM0037-002 06/01/2017

CLARK, COWLITZ, KLICKITAT, PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), SKAMANIA, AND WAHKIAKUM COUNTIES

Rates Fringes
Truck drivers:
ZONE 1
GROUP 1.................$ 27.94  14.37
GROUP 2.................$ 28.06  14.37
GROUP 3.................$ 28.19  14.37
GROUP 4.................$ 28.46  14.37
GROUP 5.................$ 28.68  14.37
GROUP 6.................$ 28.85  14.37
GROUP 7.................$ 29.05  14.37

Zone Differential (Add to Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: ASTORIA, THE DALLES, LONGVIEW AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall.

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: A Frame or Hydra lifft truck w/load bearing surface; Articulated Dump Truck; Battery Rebuilders; Bus or Manhaul Driver; Concrete Buggies (power operated); Concrete Pump Truck; Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: up to and including 10 cu. yds.; Lift Jitneys, Fork Lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or Leverman on Concrete Dry Batch Plant (manually operated); Pilot Car; Pickup Truck; Solo Flat Bed and misc. Body Trucks, 0-10 tons; Truck Tender; Truck Mechanic Tender; Water Wagons (rated capacity) up to 3,000 gallons; Transit Mix and Wet or Dry Mix - 5 cu. yds. and under; Lubrication Man, Fuel Truck Driver, Tireman, Wash Rack, Steam Cleaner or combinations; Team Driver; Slurry Truck Driver or Leverman; Tireman

GROUP 2: Boom Truck/Hydra-lift or Retracting Crane; Challenger; Dumpsters or similar equipment all sizes; Dump Trucks/Articulated Dumps 6 cu to 10 cu.; Flaherty Spreader Driver or Leverman; Lowbed Equipment, Flat Bed Semi-trailer or doubles transporting equipment or wet or dry materials; Lumber Carrier, Driver-Straddle Carrier (used in loading, unloading and transporting of materials on job site); Oil Distributor Driver or Leverman; Transit mix and wet or dry mix trucks: over 5 cu. yds. and including 7 cu. yds.; Vacuum Trucks; Water truck/Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia Nitrate Distributor Driver; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds. includes Articulated Dump Trucks; Self-Propelled Street Sweeper; Transit mix and wet or dry mix truck: over 7 cu yds. and including 11 cu yds.; Truck Mechanic-Welder-Body Repairman; Utility and Clean-up Truck; Water Wagons (rated capacity) over 5,000 to 10,000 gallons

GROUP 4: Asphalt Burner; Dump Trucks, side, end and bottom cumps, including Semi-Trucks and Trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. includes Articulated Dump Trucks; Fire Guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Composite Crewman; Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds. includes Articulated Dump Trucks

GROUP 6: Bulk Cement Spreader w/o Auger; Dry Pre-Batch concrete Mix Trucks; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains of combinations thereof: over 60 cu. yds. and including 80 cu. yds., and includes Articulated Dump Trucks; Skid Truck
GROUP 7: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds., includes Articulated Dump Trucks; Industrial Lift Truck (mechanical tailgate)

----------------------------------------------------------------

* TEAM0174-001 01/01/2017

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck drivers:</td>
<td></td>
</tr>
<tr>
<td>ZONE A:</td>
<td></td>
</tr>
<tr>
<td>GROUP 1:.................$ 34.13 18.57</td>
<td></td>
</tr>
<tr>
<td>GROUP 2:.................$ 33.29 18.57</td>
<td></td>
</tr>
<tr>
<td>GROUP 3:.................$ 30.48 18.57</td>
<td></td>
</tr>
<tr>
<td>GROUP 4:.................$ 25.51 18.57</td>
<td></td>
</tr>
<tr>
<td>GROUP 5:.................$ 33.68 18.57</td>
<td></td>
</tr>
</tbody>
</table>

ZONE B (25-45 miles from center of listed cities*): Add $.70 per hour to Zone A rates.
ZONE C (over 45 miles from centr of listed cities*): Add $1.00 per hour to Zone A rates.

*Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM   CENTRALIA  RAYMOND    OLYMPIA
EVERETT       SHELTON    ANACORTES  BELLEVUE
SEATTLE       PORT ANGELES MT. VERNON  KENT
TACOMA        PORT TOWNSEND ABERDEEN  BREMERTON

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - "A-frame or Hydralift" trucks and Boom trucks or similar equipment when "A" frame or "Hydralift" and Boom truck or similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Tournotrailer, Cat DW series, Terra Cobra, Le Tournear, Westinghouse, Athye Wagon, Euclid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards $.15 per hour additional for each 10 yard increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site;
Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailers, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghouse, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor truck; Slurry Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small, rubber-tired) (when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch Truck; Wrecker, Tow truck and similar equipment

GROUP 3 - Flatbed (single rear axle); Pickup Sweeper; Pickup Truck. (Adjust Group 3 upward by $2.00 per hour for onsite work only)

GROUP 4 - Escort or Pilot Car

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:
LEVEL C: +$.25 per hour - This level uses an air purifying respirator or additional protective clothing.
LEVEL B: +$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."
LEVEL A: +$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

----------------------------------------------------------------
TEAM0690-004 06/01/2017

ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT KITITITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA COUNTIES

<table>
<thead>
<tr>
<th>Rates</th>
<th>Fringes</th>
</tr>
</thead>
</table>

Truck drivers: (AREA 1:
SPOKANE ZONE CENTER: Adams, Chelan, Douglas, Ferry, Grant, Kittitas, Lincoln, Okanogan, Pen Oreille, Spokane, Stevens, and Whitman Counties

AREA 1: LEWISTON ZONE CENTER:
Asotin, Columbia, and Garfield Counties

**AREA 2: PASCO ZONE CENTER:**
Benton, Franklin, Walla Walla and Yakima Counties

**AREA 1:**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Rate 1</th>
<th>Rate 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$21.82</td>
<td>17.30</td>
</tr>
<tr>
<td>2</td>
<td>$24.09</td>
<td>17.30</td>
</tr>
<tr>
<td>3</td>
<td>$24.59</td>
<td>17.30</td>
</tr>
<tr>
<td>4</td>
<td>$24.92</td>
<td>17.30</td>
</tr>
<tr>
<td>5</td>
<td>$25.03</td>
<td>17.30</td>
</tr>
<tr>
<td>6</td>
<td>$25.20</td>
<td>17.30</td>
</tr>
<tr>
<td>7</td>
<td>$25.73</td>
<td>17.30</td>
</tr>
<tr>
<td>8</td>
<td>$26.09</td>
<td>17.30</td>
</tr>
</tbody>
</table>

**AREA 2:**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>Rate 1</th>
<th>Rate 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$23.96</td>
<td>17.30</td>
</tr>
<tr>
<td>2</td>
<td>$26.20</td>
<td>17.30</td>
</tr>
<tr>
<td>3</td>
<td>$26.71</td>
<td>17.30</td>
</tr>
<tr>
<td>4</td>
<td>$27.04</td>
<td>17.30</td>
</tr>
<tr>
<td>5</td>
<td>$27.15</td>
<td>17.30</td>
</tr>
<tr>
<td>6</td>
<td>$27.15</td>
<td>17.30</td>
</tr>
<tr>
<td>7</td>
<td>$28.05</td>
<td>17.30</td>
</tr>
<tr>
<td>8</td>
<td>$28.01</td>
<td>17.30</td>
</tr>
</tbody>
</table>

**Zone Differential (Add to Zone 1 rate: Zone 1 + $2.00)**

**BASE POINTS:** Spokane, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.
Zone 2: Outside 45 radius miles from the main post office.

**TRUCK DRIVERS CLASSIFICATIONS**

**GROUP 1:** Escort Driver or Pilot Car; Employee Haul; Power Boat Hauling Employees or Material

**GROUP 2:** Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and under); Leverperson (loading trucks at bunkers); Trailer Mounted Hydro Seeder and Mulcher; Seeder & Mulcher; Stationary Fuel Operator; Tractor (small, rubber-tired, pulling trailer or similar equipment)

**GROUP 3:** Auto Crane (2000 lbs. capacity); Buggy Mobile & Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. and under); Flat Bed Truck with Hydraulic System; Fork Lift (3001-16,000 lbs.); Fuel Truck Driver, Steamcleaner & Washer; Power Operated Sweeper; Rubber-tired Tunnel Jumbo; Scissors Truck; Slurry Truck Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom & articulated end dump (3 yards to and including 6 yds.); Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

**GROUP 4:** A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom & articulated end dump (over 6 yards to and including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8,000 gallons)
GROUP 5: Dumpster (over 6 yds.); Lowboy (50 tons & under); Self- loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds. to and including 10 yds.); Trucks, side, end, bottom and end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled, up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Mechanic (Field); Semi- end Dumps; Transfer Truck & Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and articulated end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DWs & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater Water Tank Truck (8,001 - 14,000 gallons); Lowboy (over 50 tons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable operated trailer); Transit Mixers & Trucks Hauling Concrete (over 20 yds.); Truck, side, end, bottom end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons);

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

Footnote A - Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:

LEVEL C-D: - $.50 PER HOUR (This is the lowest level of protection. This level may use an air purifying respirator or additional protective clothing.

LEVEL A-B: - $1.00 PER HOUR (Uses supplied air in conjunction with a chemical splash suit or fully encapsulated suit with a self-contained breathing apparatus.

Employees shall be paid Hazmat pay in increments of four(4) and eight(8) hours.

NOTE:
Trucks Pulling Equipment Trailers: shall receive $.15/hour over applicable truck rate

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

----------------------------------------------------------------

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that
As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

----------------------------------------------------------------

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=================================================================
END OF GENERAL DECISION