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May 9, 2016

**TO: PLANHOLDERS**

**SUBJECT: NORTH LEAD RAIL IMPROVEMENTS**  
**PROJECT NO. 092938**  
**CONTRACT NO. 070164**

**ADDENDUM NUMBER THREE**

This addendum is issued to amend the following:

**SPECIFICATIONS**

**A. SECTION 00 11 13 – ADVERTISEMENT FOR BIDS**

1. **DELETE** and **REPLACE** the issued section with the attached Section 00 11 13 – Advertisement for Bids. (Attachment A to this Addendum No. 3)

**B. SECTION 00 31 26 – EXISTING HAZARDOUS MATERIAL INFORMATION**

1. **ADD** the following new paragraph 1.02(C):

The Port does not anticipate that the site contains pollutants in concentrations that exceed state or federal dangerous or hazardous designations (respectively).

**C. SECTION 00 41 00 – BID FORM**

1. **DELETE** and **REPLACE** the issued section with the attached Section 00 41 00 – Bid Form. (Attachment B to this Addendum No. 3)

**D. SECTION 00 73 16 – INSURANCE REQUIREMENTS**

1. **DELETE** paragraph 1.03(D)(1)(f) Fire Legal Liability

**E. SECTION 01 10 00 – SUMMARY**

1. **DELETE** and **REPLACE** the issued section with the attached Section 01 10 00 – Summary. (Attachment C to this Addendum No. 3)

**F. SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES**

1. **DELETE** and **REPLACE** the issued section with the attached Section 01 20 00 – Price and Payment Procedures. (Attachment D to this Addendum No. 3)

**G. SECTION 01 64 00 – OWNER FURNISHED PRODUCTS**

1. **DELETE** and **REPLACE** the issued section with the attached Section 01 64 00 – Owner Furnished Products. (Attachment E to this Addendum No. 3)

**H. SECTION 26 05 30 – RACEWAY AND BOXES**

1. **REVISE** paragraph 3.04(B)(2) to read as follows:

Exposed Locations with Vehicular Traffic or Equipment Movement: Provide PVC coated rigid steel conduit.

**I. SECTION 31 00 00 – EARTHWORK**

1. **DELETE** and **REPLACE** the issued section with the attached Section 31 00 00 – Earthwork. (Attachment F to this Addendum No. 3)

**Receipt for this addendum shall be indicated in the space provided in Section 00 41 00, Bid Form.**

**END OF SECTION**

**ATTACHMENTS:**

- ATTACHMENT A – SECTION 00 11 13 ADVERTISEMENT FOR BIDS
- ATTACHMENT B – SECTION 00 41 00 BID FORM
- ATTACHMENT C – SECTION 01 10 00 SUMMARY
- ATTACHMENT D – SECTION 01 20 00 PRICE AND PAYMENT PROCEDURES
- ATTACHMENT E – SECTION 01 64 00 OWNER FURNISHED PRODUCTS
- ATTACHMENT F – SECTION 31 00 00 EARTHWORK

**THE PORT OF TACOMA IS CURRENTLY ACCEPTING SEALED BIDS FOR CONSTRUCTION OF  
THE FOLLOWING:**

**NORTH LEAD RAIL IMPROVEMENTS**

**PROJECT NO. 092938 | CONTRACT NO. 070164**

**Scope of Work:** The work required for this project includes reconfiguration of the rail yard and construction of 2 long intermodal tracks ~~including 12,300 feet of track, 9 cross-overs and 25 turnouts~~. Work includes select demolition, earthwork, asphalt paving, relocation of electrical and communication utilities, light relocations, fencing, installation of an arch culvert, storm drainage, storm filter catch basins and modular wetland treatment systems.

**Bid Estimate:** The Engineers estimate is \$9,000,000\$ 10,950,000, plus Washington State Sales Tax (WSST).

**Sealed Bid Date/Time/ Location:** Bids will be received at the Front Reception Desk, Port Administration Office, One Sitzcum Plaza, Tacoma, Washington until ~~2:00 P.M. on May 12, 2016~~May 17, 2016, at which time they will be publicly opened and read aloud.

**Pre-bid Conference and Site Tour:** A pre-bid conference and site visit have been set for Wednesday, April 27, 2016 at 10:00 AM . The site visit will convene at the Port's Administrative building, located at One Sitzcum Plaza.

**Bidding Security:** Each bid must be accompanied by a Certified Check or Bid Security Bond in an amount equal to five (5%) percent of the bid.

**Contact Information:** All questions are to be put into writing to the Port at [procurement@portoftacoma.com](mailto:procurement@portoftacoma.com). No oral answers will be binding by the Port.

**Bidding Documents:** Plans, Specifications, Addenda, and Plan Holders List for this project are available on-line through The Port of Tacoma's Website [www.portoftacoma.com](http://www.portoftacoma.com). Click on "Contracts"; "Procurement", and then the Procurement Number (070136). Bidders must subscribe to the Holder's List on the right hand side of the screen in order to receive automatic email notification of future addenda and to be placed on the Holder's List.

Contact Jana Prince at [procurement@portoftacoma.com](mailto:procurement@portoftacoma.com) with questions. Holder's Lists will be updated regularly. Additional Instructions available in 00 21 00 - Instructions to Bidders.

**END OF SECTION**

**BIDDER'S NAME:** \_\_\_\_\_

**PROJECT TITLE: NORTH LEAD RAIL IMPROVEMENTS**

The undersigned Bidder declares that it has read the specifications, understands the conditions, has examined the site, and has determined for itself all situations affecting the work herein bid upon. Bidder proposes and agrees, if this bid is accepted, to provide at Bidder's own expense, all labor, machinery, tools, materials, etc., including all work incidental to, or described or implied as incidental to such items, according to the bidding documents, and that the Bidder will complete the work within the time stated, and that Bidder will accept in full payment therefore the lump sums and unit prices set forth below.

Proposed Bid Price. (Note: Show prices in figures only.) Complete Installation:

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE
1	Mobilization and Demobilization	1	LS		
2	North Lead Rail Project Complete	1	LS		
3	Off-site disposal of Type <del>C-B</del> soil at Subtitle D Landfill.	18,240	TN		
4	Off-site disposal of Type D soil material.	24,180	TN		
<b>BASE BID SUBTOTAL</b>					

**Evaluation of Bids.** In accordance with the provisions of these Contract Documents, Bids will be evaluated to determine the lowest Base Bid Subtotal offered by a responsible Bidder submitting a responsive bid.

**Addenda.** Bidder acknowledges review of all Addenda through No. \_\_\_\_\_

**Principal Subcontractors/Suppliers.** The bidder shall list below the name of each subcontractor or supplier to whom the bidder proposes to subcontract the portions of the work listed below, or name itself for the work.

Work to be Performed	Name of Firm
HVAC (Heating, Ventilation and Air Conditioning) Work	
Plumbing Work as described in RCW 18.106	
Electrical Work as described in RCW 19.28	

**Trench Excavation Safety Provision.** If the bid amount contains work which requires trenching exceeding a depth of 4 feet, all costs for trench safety shall be included in the Base Bid and indicated below for adequate trench safety systems in compliance with RCW 39.04 and WAC 296-155-650. Bidder shall include a lump sum amount, excluding Washington State Sales Tax. If trench excavation safety provisions do not pertain to the Work, the Bidder should enter "N.A." or "Not Applicable" in the blank on the Bid Form.

Trench Excavation Safety: \_\_\_\_\_ (Total in Written Figures Only)

**Noncollusion.** The undersigned declares under penalty of perjury that the bid submitted is a genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to the bidder an advantage over any other bidder or bidder.

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Name of Firm

---

Date

---

Signature

---

Print Name, Title

---

Mailing Address

---

City, State, Zip Code

---

Telephone Number

---

Email Address

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WA State Contractor's License No.

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Date of Issue

---

Expiration Date

---

Unified Business Identifier (UBI) No.

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Employment Security Department No.

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Identification of Contractor as a sole proprietor, a partnership, a joint venture, a corporation or another described form of legal entity

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 SCOPE

- A. The accompanying Drawings and Specifications show and describe the location and type of Work to be performed under this project. Work is more specifically defined on the drawings listed in Section 00 01 15.
  - 1. The Work under this contract is to provide, furnish and install all labor, materials and equipment required to complete the work, installed, tested, and ready for use, and as described in these documents.
  - 2. The North Lead Rail Improvements consists of:
    - a. Selective site demolition and erosion control;
    - b. Furnish and install railway trackwork including new and salvage track. ~~Approximately 12,300 track feet of new track and salvage and reuse of existing track.~~
    - c. Installation of special trackwork ~~including double diamond crossing, crossovers and rail turnouts. Double diamond crossings (2 crossings), 9 rail crossovers, and 24 rail turnouts.~~
    - d. Access roads within the rail yard;
    - e. Relocation of fencing and other surface features;
    - f. Track drainage and relocation of existing storm drainage infrastructure;
    - g. Installation of Stormfilter Catch Basin units and Modular wetland Stormwater Treatment System (MWS);
    - h. Relocation of existing electrical and communication infrastructure;
    - i. Yard power and yard lighting infrastructure and relocations;
    - j. AEI infrastructure relocations;
    - k. Installation of an arched culvert and backfill of the open channel portion of the Erdahl Ditch;
    - l. Compressed air distribution piping and new air connection pits.

### 1.02 LOCATION

- A. The work is located at:

Port of Tacoma Railyard  
Site bounded between Milwaukee Ave and  
Alexander Avenue, North of SR509  
Tacoma, WA

### 1.03 CONTRACT INTERM MILESTONE COMPLETION DATES

- A. Consistent with the Contract Agreement, the Contractor shall meet the following project schedule milestones.
  - 1. East End Substantial Completion. All trackwork related construction shall be complete in the area defined on plan G6 as the "East End," not later than 262 calendar days from

Contract Execution. The "East End" is further defined on plan G3 as areas 3, 4, 5, 5.1, and 6.

2. All Contract Work shall be completed by Substantial Completion as defined in the Contract Agreement.

#### 1.04 WORK PERFORMED UNDER SEPARATE CONTRACTS

- A. The Contractor shall, by way of the Engineer, familiarize itself with other contracts which have been awarded, about to be awarded or are in progress in the same or immediate area. The Contractor shall coordinate the progress of its work with the established schedules for completion and phasing.
- B. Contractor shall coordinate and provide access to maintenance, Tacoma Rail and other contractors performing work in the rail yard, including but not limited to fiber optic cable demolition and installation in the project area.

#### 1.05 PORT PROVIDED MATERIALS

- A. Port of Tacoma will furnish the Contractor with the following material:
  1. Special trackwork including double diamond crossing, crossovers and turnouts.
- B. Reference Section 01 64 00 - Owner Provided Materials for coordination.

#### PART 2 - PRODUCTS - NOT USED

#### PART 3 - EXECUTION - NOT USED

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 PAYMENT PROCEDURES

- A. Monthly pay estimates shall clearly identify the work performed for the given time period based on the approved Schedule of Values.
  1. At the Pre-construction meeting, the Engineer and the Contractor shall agree upon a date each month when payment applications shall be submitted.
- B. Prior to submitting a payment application, the Contractor and Engineer shall meet each month to review the work accomplished to determine the actual quantities including labor, materials and equipment charges to be billed.
  1. Prior to the payment application meeting, the Contractor shall submit to the Engineer all measurement documentation as referenced in these contract documents; to include all measurement by weight, volume or field.
  2. For all change work being done on a force account basis, the Contractor shall submit prior to meeting with Engineer all Force Account back-up documentation as required to process the payment application where Force Account work is being billed. The Engineer and the Contractor shall review the documentation at the payment application meeting to verify quantities and review the work accomplished.
  3. The Contractor shall bring a copy of all documentation to the pay application meeting with the Engineer.
- C. Following the Engineers' review, the Contractor shall prepare an original pay estimate with complete supporting documentation attached and submit it electronically using Adobe PDF file format to [cpinvoices@portoftacoma.com](mailto:cpinvoices@portoftacoma.com)
- D. An estimated cashflow statement projecting the Contractor's monthly billings on the project shall be submitted with each payment application.

### 1.02 PAYMENT PRICING

- A. Pricing for the various lump sum or unit prices in the Bid Form, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work in accordance with the requirements of the Contract Documents.
- B. Pricing also includes all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).
- C. No separate payment will be made for any item that is not specifically set forth in the Bid Form, and all costs therefore shall be included in the prices named in the Bid Form for the various appurtenant items of work.
- D. All other work not specifically mentioned in the measurement and payment sections identified below shall be considered incidental to the work performed and merged into the various unit and lump sum prices bid. Payment for work under one item will not be paid for under any other item.
- E. The Port of Tacoma reserves the right to make changes should unforeseen conditions necessitate such changes. Where work is on a unit price basis, the actual quantities occasioned by such changes shall govern the compensation.

### 1.03 LUMP-SUM MEASUREMENT

- A. Lump-sum measurement will be for the entire item, unit of Work, structure, or combination thereof, as specified and as indicated in the Contractor's submitted bid.
  1. If the Contractor requests progress payments for lump-sum items, such progress payments will be made in accordance with an approved schedule of values. The quantity for payment for completed work shall be an estimated percentage of the lump sum amount, agreed to between the Engineer and Contractor, payable in monthly progress payments in increments proportional to the work performed in amounts as agreed between the Engineer and the Contractor.

### 1.04 MEASUREMENT OF QUANTITIES FOR UNIT PRICES

- A. Measurement Standards:
  1. All Work to be paid for at a contract price per unit measurement, as indicated in the Contractor's submitted bid, will be measured by the Engineer in accordance with United States Standard Measures.
- B. Measurement by Weight:
  1. Unless shipped by rail, material to be measured and paid for by weight shall be weighed on sealed scales regularly inspected by the Washington State Department of Agriculture's Weights and Measures Section or its designated representative. Measurement shall be furnished by and at the expense of the Contractor. All weighing, measuring, and metering devices shall be suitable for the purpose intended and shall conform to the tolerances and specifications as outlined in Washington State Department of Transportation Standard Specifications, Division 1, General Requirements, Article 1-09.2, Weighing Equipment.
  2. Provide or utilize platform scales of sufficient size and capacity to permit the entire vehicle or combination of vehicles to rest on the scale platform while being weighed. Combination vehicles may be weighed as separate units provided they are disconnected while being weighed. Scales shall be inspected and certified as often as the Engineer may deem necessary to ascertain accuracy. Costs incurred as a result of regulating, adjusting, testing, inspecting, and certifying scales shall be borne by the Contractor.
  3. A licensed weighmaster shall weigh all Contractor-furnished materials. The Engineer may be present to witness the weighing and to check and compile the daily record of such scale weights. However, in any case, the Engineer will require that the Contractor furnish weight slips and daily summary weigh sheets. In such cases, furnish a duplicate weight slip or a load slip for each vehicle weighed, and deliver the slip to the Engineer at the point of delivery of the material.
  4. If the material is shipped by rail, the certified car weights will be accepted, provided only actual weight of material will be paid for and not minimum car weights used for assessing freight tariff. Car weights will not be acceptable for material to be passed through mixing plants. Material to be measured by weight shall be weighed separately for each bid item under which it is to be paid.
  5. Trucks used to haul material being paid for by weight shall be weighed empty daily and at such additional times as the Engineer may require. Each truck shall bear a plainly legible identification mark. The Engineer may require the weight of the material be verified by weighing empty and loaded trucks on such other scales as the Engineer may designate.
- C. Measurement by Volume:

1. Measurement by volume will be by the cubic dimension indicated in the Contractor's submitted bid. Method of volume measurement will be by the unit volume in place or removed as shown on the Contract Drawings or as specified.
2. When material is to be measured and paid for on a volume basis and it is impractical to determine the volume by the specified method of measurement, or when requested by the Contractor in writing and accepted by the Engineer in writing, the material may be weighed in accordance with the requirements specified for weight measurement. Such weights will be converted to volume measurement for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Resident Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities will be accepted.

D. Field Measurement for Payment:

1. The Contractor shall take all measurements by providing equipment, workers, and survey crews as required to measure quantities in accordance with the provisions for measurement specified herein. No allowance will be made for specified tolerances.
2. The Engineer will verify all quantities of Work performed by the Contractor on a unit-price basis, for progress payment purposes.

#### 1.05 REJECTED, EXCESS, OR WASTED MATERIALS

A. Quantities of material wasted or disposed of in a manner not called for under the Contract; rejected loads of material, including material rejected after it has been placed by reasons of the failure of the Contractor to conform to the provisions of the Contract; material not unloaded from the transporting vehicle; material placed outside the lines indicated on the Contract Drawings or established by the Engineer; or material remaining on hand after completion of the Work, will not be paid for, and such quantities shall not be included in the final total quantities. No additional compensation will be permitted for loading, hauling, and disposing of rejected material.

#### 1.06 MEASUREMENT AND PAYMENT

A. Item # 1: Mobilization and Demobilization

1. Payment for MOBILIZATION AND DEMOBILIZATION shall be for preparatory work and operations performed by the Contractor including, but not limited to completion and submittal and approval of the following:
  - a. All bonds and insurance certificates
  - b. Security Requirements
  - c. Construction Health and Safety Plan (HASP)
  - d. Spill Prevention, Control and Countermeasures (SPCC) Plan
  - e. Initial Submittal Schedule
  - f. Schedule of Values
  - g. Phasing plans
  - h. Detailed CPM progress schedule
  - i. Construction Stormwater Pollution Prevention Plan (SWPPP)
  - j. Demolition Plan

- k. Export Soil Management Plan
- l. Air & Noise Equipment List and Certification
- m. Establishing Contractor's Project Manager, Superintendent, and other required specified personnel on the Work site full time.
- n. Furnishing and installing all temporary facilities and controls as needed for the safe and proper completion of the work, including utilities, sanitary facilities, barriers and enclosures, fences, staging and entrance areas, and field offices, as specified.
- o. Mobilization onto the site required in support of the Contractor's first 30 days of operations.

2. Mobilization and Demobilization shall be paid at the lump sum price listed in the Contractor's submitted bid. Incremental payment shall be made for each location as follows:

- a. 40% after completion of 5% of the total contract amount of other bid items have been earned.
- b. 40% after completion of 20% of the total contract amount of other bid items have been earned.
- c. 20% after completion of all work on the project has been completed, including cleanup and acceptance of the project by the Port.

B. Item # 2: North Lead Rail Project Complete

- 1. Item Description: The Work of this item includes all Work required to complete the North Lead Rail Project as included in the Contract Documents that is not specifically included in the other bid items described in this section. This includes but is not limited to health and safety requirements, field engineering, temporary erosion and sediment control (TESC), construction stormwater pollution control requirements, dewatering, demolition, storm drainage systems, electrical site work, base courses, asphalt concrete pavement, concrete, trackwork, special trackwork, chain link fencing and gates, and earthwork not specifically identified under other items of work.
- 2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.
- 3. Payment: This item will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, approved by the Engineer in accordance with the approved Schedule of Values.

C. Item # 2.3: Off site disposal of Type GB soil at Subtitle D Landfill.

- 1. Item Description: The Work of this item includes all work loading, transporting, and coordination for offsite disposal of soil materials to at a Subtitle D Landfill in accordance with Section 01 35 43.19, Export Soil Management. All Type GB material shall be disposed of at Pierce County Recycling, Composting and Disposal, LLC dba LRI in accordance with the Port's contract for Waste Disposal included in Appendix A. Disposal fees shall be paid by the Port direct to LRI.
- 2. Measurement: This item will be measured by the ton.
- 3. Payment: This item will be paid for based on actual quantities for the period being billed.

D. Item # 3.4: Off site disposal of Type D soil material.

DIVISION 01 - GENERAL REQUIREMENTS  
SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

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1. Item Description: The Work of this item includes all work in loading, transporting, and disposing offsite Type D soil and ballast materials in accordance with Section 01 35 43.19, Export Soil Management.
2. Measurement: This item will be measured by the ton.
3. Payment: This item will be paid for based on actual quantities for the period being billed.

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

**END OF SECTION**

## PART 1 - GENERAL

### 1.01 SCOPE

- A. The purpose of this section is to provide the framework for transferring Port provided special trackwork materials to the Contractor in a safe, timely and effective manner.

### 1.02 SUBMITTALS

- A. Submit preferred delivery dates within the specified windows for the three separate Owner Furnished material packages.
- B. Submit an inspection report or log to the Engineer of the inspection performed on the materials within 2 days of each delivery. Flag any equipment or materials identified as being in unsatisfactory condition or quantity before moving or relocating it from the Location Area described below. Document unsatisfactory condition of equipment photographically, using digital media.

### 1.03 COORDINATION

- A. The materials will be available within the time frames listed below.
- B. Contractor shall submit and obtain approval of all pre-work submittals in time to receive the first delivery of materials. The Contractor shall be responsible for receiving and unloading all Owner furnished material.
- C. Contractor may request specify specific delivery date which falls with the windows provided below within 14 days of Contract Award or the Port of Tacoma shall determine. Any costs associated with the Contractor's request for delivery outside of specified windows shall be paid by the Contractor.

### 1.04 LOCATION

- A. The materials are to be delivered to Contractor's staging area at 2114 Marshall Ave, Tacoma WA adjacent to the Port of Tacoma rail yard.

## PART 2 - PRODUCTS

### 2.01 ITEMS

- A. Special track work items are manufactured and supplied by Progress Rail Services. Assume all items are in satisfactory condition. Report in writing to the Engineer materials found to be in unsatisfactory condition or quantity.
- B. Material required for PhasePort Furnished Material by Delivery Package

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	<u>Delivery date window</u>	<u>Item - Description</u>	<u>Notes</u>
	<u>06/06/16 - 07/01/16</u>	<u>Delivery 1 - Turnout and Crossovers identified on Plan Sheet R14</u>	<u>Material required for Phases 1 - 3A</u>

	<u>10/25/16 -</u> <u>11/21/16</u>	<u>Delivery 2 - Crossings, Turnout and Crossovers identified on Plan Sheet R14</u>	<u>Material required for Phases 3B - 4</u>
	<u>12/15/16 -</u> <u>01/13/17</u>	<u>Delivery 3 - Turnouts identified on Plan Sheet R14</u>	<u>Material required for Phases 5 - 6</u>
	<u>Delivery date Window</u>	<u>Special Trackwork Item - Description</u>	<u>Item Qty (EA)</u>
<u>Package 1</u>	<u>06/06/16 -</u> <u>07/01/16</u> - - - -	<u>Left Hand Turnout Non-Insulated</u> <u>Left Hand-Left Hand Crossover Non-Insulated, 14' Track Center</u> <u>Left Hand-Left Hand Crossover Non-Insulated, 15' Track Center</u> <u>Right Hand-Left Hand Crossover Non-Insulated, 15' Track Center</u>	<u>7</u> <u>2</u> <u>3</u> <u>1</u>
<u>Package 2</u>	<u>10/25/16 -</u> <u>11/21/16</u> - - - - -	<u>Double Diamond Crossing (2 crossings)</u> <u>Left Hand Turnout Insulated</u> <u>Right Hand Turnout Non-Insulated</u> <u>Right Hand Turnout Insulated</u> <u>Right Hand-Right Hand Crossover Insulated, 14' Track Center</u>	<u>1</u> <u>2</u> <u>1</u> <u>2</u> <u>1</u>
<u>Package 3</u>	<u>12/15/16 -</u> <u>01/13/17</u> - - - -	<u>Left Hand Turnout Non-Insulated</u> <u>Left Hand Turnout Insulated</u> <u>Right Hand Turnout Non-Insulated</u> <u>Right Hand Turnout Insulated</u>	<u>4</u> <u>1</u> <u>1</u> <u>1</u>

1. See drawings R12-R15 for assembly and constriction requirements of turnouts, crossovers, and crossings.
2. Port furnished materials shall comply with product specifications of specifications sections 34 05 17 – Railroad Work and 34 11 23 Special Trackwork.
3. For material quantities included in each item, refer to Special Trackwork shop drawings (see specification section 00 31 00 – Available Project Information). All items not included in the shop drawings shall be provided by the Contractor.
4. Turnouts and single crossovers will be shipped by truck.
  - i. The switch points and stock rail will be banded to each other and shipped as (2) units per switch containing (1) switch point and (1) stock rail each.
  - ii. The frogs will be shipped loose with the multi tie heel plates clipped to the frog.

- iii. The closure rails and traffic rails will ship as separate units and the guard rails will be bolted to the rails to which they correspond.
- iv. All of the plates will be spiked to the wood ties, except as noted above.
- v. Ties will ship in bundles (generally six (6) ties per bundle).
- vi. Boxes (wooden coffins) will be supplied containing clips, braces, joint bars and hardware for joint bars. Switch rods will be in or on top of the boxes.

C. Port will furnish approximately 200 new 8'-6" hardwood ties to replace marked ties along the Track 13 Rail Relay as shown on the drawings.

### **PART 3 - EXECUTION**

#### 3.01 REMOVAL OF EQUIPMENT FROM STORAGE LOCATION

- A. Protect, transport and install where indicated within the Contract Documents.

#### 3.02 FIELD QUALITY CONTROL

- A. Equipment Inspection

- 1. Examine each piece or component for visual defects within 48 hours of delivery.

**END OF SECTION**

## PART 1 – GENERAL

### 1.01 DESCRIPTION OF WORK

- A. The work includes excavation, subgrade preparation, backfilling, grading, and compaction.
- B. Excess soil and aggregate generated as a result of the work may be re-used on-site if the material meets the requirements for Fill, Backfill or Recycled Aggregate Base Courses. If the material does not meet the aggregate gradation for Fill, Backfill or Recycled Aggregate Base Courses, the material may be exported off-site and disposed of, or may be blended with additional aggregates to meet the grading requirements for Fill, Backfill or Recycled Aggregate Base Courses. Use of on-site material as Fill, Backfill or Recycled Aggregate Base Courses is subject to approval by the Engineer as described in these specifications. ~~Physical and/or chemical characterization of excess materials may be required and will be provided by the Port as determined by the Engineer.~~
- C. Export of excess soil shall be in accordance with Section 01 35 43.19, Export Soil Management.

### 1.02 QUALITY ASSURANCE

- A. The Port will provide testing and inspection services to the satisfaction of the Engineer unless otherwise specified. Sampling and testing for compliance with the Contract provisions shall be in accordance with Section 01 45 00 of these specifications. The Contractor may obtain copies of results of tests performed by the Port at no cost. Tests conducted for the sole benefit of the Contractor shall be at the Contractor's expense.

### 1.03 SUBMITTALS

- A. The Contractor shall perform and pay for and submit test reports for all imported materials as specified in Paragraphs 2.07, 2.08, and 2.09, and 2.10. Submit test reports for all field tests to determine in-place density as specified in Paragraph 3.05 B.

### 1.04 SITE CONDITIONS

- A. The Port has subsurface investigations made throughout the project site and immediate vicinity of the project as part of a long term phased development of the entire area. The information is available for review as described in Section 00 31 00 Available Project Information.
- B. The Contractor should anticipate encountering groundwater throughout the project site. The Port has subsurface investigations made throughout the project site, the information is available for review as described in Section 00 31 00 Available Project Information
- C. Existing Utilities: The Contractor shall verify the location of existing utilities at the site as described in Section 02 41 13 Selective Site Demolition. Those utilities which are to remain shall be protected from damage. Damage to utilities which are to remain shall be repaired by the Contractor at no cost to the Port.
- D. The Port is reasonable certain that excavated material in the West End area of the Project, as defined by drawing G5, contains petroleum and other pollutant impacted soil material. The Contractor shall assume all excavated material in the West End area, that is to be exported, shall be handled as Type B Regulated Soil as defined in 01 35 43.19, Export Soil Management.
- E. The Port has chemical characterization testing in the East End area, as defined by drawing G6. The information is available for review as described in Section 00 31 00 Available Project Information. The Contractor shall assume all excavated material in the East End area that is to be exported, shall be handled as Type C Soil as defined in 01 35 43.19, Export Soil Management.

## PART 2 – PRODUCTS

### 2.01 FILL AND BACKFILL

A. Material used for fill and backfill shall be clean, free-draining, sandy gravel or gravelly sand obtained from natural deposits or from excess soils generated during site construction activities. Individual particles shall be free from all objectionable coating. The material shall contain no organic matter or soft friable particles considered objectionable by the Engineer.

Material used for backfill shall be one of the following:

1. Material from trench excavation or other on-site borrow soils generated during construction at the site, as approved by the Engineer in accordance with paragraph 2.08, free from organic matter, demolition debris, or other deleterious substances, and containing no rocks or lumps over 6 inches in greatest dimension, except where otherwise approved by the Engineer. “Nesting” of rock pieces that will create voids will not be permitted. Characterization of on-site common borrow materials shall be completed by the Port as directed by the Engineer.
2. Imported fill material consisting of bank run gravel for trenches meeting the requirements of Washington State Department of Transportation Standard Specifications Section 9-03.19. The amount of fines shall not exceed 5 percent based on the minus  $\frac{3}{4}$ -inch fraction. Off-site borrow materials shall be characterized as specified in sections 2.07 and 2.09 at the Contractor's expense.

Material shall be graded between the limits specified below:

<u>Sieve Size</u>	<u>Percent Passing</u> <u>(by weight)</u>
8-inch	100
4-inch	95-100
3/4-inch	60-90
U.S. No. 10	25-65
U.S. No. 40	10-40
U.S. No. 200	0-4

The moisture content of fill material shall be within minus 2 percent to plus 1 percent of the optimum moisture content at the time of compaction.

### 2.02 GRAVEL BORROW

A. Gravel Borrow shall meet the requirements of Specification 32 11 23 – Aggregate Base Courses". Imported gravel base shall be characterized as specified in paragraphs 2.07 and 2.09 at the Contractor's expense.

### 2.03 GRAVEL BACKFILL FOR PIPE ZONE BEDDING

A. Gravel backfill for pipe zone bedding shall consist of crushed, processed or naturally occurring granular material. It shall be free from various types of wood waste or other extraneous or objectionable materials. It shall have such characteristics of size and shape that it will compact and shall meet the following specifications for grading and quality:

Sieve Size Percent Passing

1-1/2" square	100
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1" square	75-100
5/8" square	50-100
U.S. No. 4	20-80
U.S. No. 40	3-24
U.S. No. 200	10.0 Max.
Sand Equivalent	35 min.

Imported bedding material shall be characterized as specified in sections 2.07 and 2.09 at the Contractor's expense.

#### 2.04 GRAVEL BACKFILL FOR DRAINS

A. Gravel Backfill for Drains shall conform to the following gradation:

Sieve Size Percent Passing

1" square	100
3/4" square	80-100
3/8" square	0-40
U.S. No. 4	0-4
U.S. No. 200	0-2

Imported bedding material shall be characterized as specified in sections 2.07 and 2.09 at the Contractor's expense.

#### 2.05 PEA GRAVEL

A. Pea gravel material must be non-plastic, rounded to sub-rounded aggregate material. A minimum of 70 percent by weight of the pea gravel must have at least one fractured face. Pea gravel shall conform to the following gradation:

Sieve Size Percent Passing

3/8" square	95-100
U.S. No. 4	0-30
U.S. No. 8	0-15
U.S. No. 200	0-2

Imported pea gravel material shall be characterized as specified in sections 2.07 and 2.09 at the Contractor's expense.

#### 2.06 QUARRY SPALLS

A. Quarry spalls shall meet the requirements of the Washington State Department of Transportation Standard Specifications Sections 9-13.

Quarry spalls shall be characterized as specified in sections 2.07 and 2.09 at the Contractor's expense.

#### 2.07 OFF-SITE BORROW SOURCE CHARACTERIZATION

A. Off-site borrow source characterization shall be performed by the Contractor as specified in Section 2.09 to assure that imported materials are natural, native, virgin materials, free of

contaminants, including debris or recycled materials, and meet the requirements of the contract documents.

Each source of off-site borrow material shall be tested once per year for physical properties.

Each source of off-site borrow for sands and gravels shall be tested once per calendar year for metals.

Each source of off-site borrow for soils, including materials to be used for fill and backfill, shall be tested for metals, chemical compounds and hydrocarbons once for every 500 cubic yards of material to be imported.

The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. In the event of rejection, it shall be the responsibility of the contractor to remove all stockpiles of rejected material from the site.

1. General

- a. Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein. The Contractor shall submit a characterization of any and all imported material prior to any on-site placement. The characterization will include source identification, analyses of a material source sample, and a source inspection report. The material shall not be imported to the site until approved by the Engineer. Once approved and imported to the site, the Contractor shall perform an on-site inspection of the material to verify that it is the material sampled for characterization and approval.

2. Source Identification

- a. The Contractor shall provide documentation of the origin of imported materials and maps identifying specific location(s) of material source(s). Physical and chemical characterization reports available from the material supplier shall be provided to the Engineer.

3. Inspection of Source

- a. The Contractor shall inspect all material sources. During such inspection, the Contractor shall assure that materials to be delivered to the jobsite are likely to meet the appropriate specifications. The Contractor shall provide the Engineer two weeks notice of such inspections. The Engineer or a designated representative may accompany the Contractor to witness such inspections. This witnessing shall in no way release the Contractor from complying with the specifications and in no way shall be construed as approval of any particular source of material.

4. Testing, Reporting, and Certification

- a. Off-site borrow materials shall be in accordance with the requirements of Section 2.09 unless waived by the Engineer.

5. Inspection of Materials at the Jobsite

- a. The Contractor shall visually inspect import material upon delivery. Materials shall be inspected for presence of foreign, recycled, or reprocessed material. The Engineer may at any and all times perform an independent inspection. Material may be tested according to Section 2.09 at the Engineer's discretion. Material may be rejected due to the presence of deleterious substances or as a result of substandard test results.

## 2.08 ON-SITE BORROW SOURCE CHARACTERIZATION

- A. Excess soils generated during site activities may be used as on-site common borrow for backfill and other fills associated with the work, as approved by the Engineer. Characterization of excess materials generated during site activities and proposed for reuse as on-site common borrow material will be performed by the Port of Tacoma as determined by the Engineer to assure that on-site borrow materials are free of contaminants, including debris and meet the requirements of the Contract Documents. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. One or more of the physical properties tests listed in paragraph 2.09 of these specifications will be required by the Engineer for characterization prior to acceptance. The Contractor shall provide representative sample(s) of the material if requested.

### 1. General

- a. Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein or as approved by the Engineer. The Contractor shall submit a written request for approval for use of on-site common borrow materials at least 1 week prior to any on-site placement. The request shall identify the source of the material, proposed onsite use and quantity of material to be used. The Engineer may request that the Contractor provide samples of the material for physical properties and/or chemical characterization. The material shall not be reused at the site until approved by the Engineer. Once approved for site use, the Contractor shall perform an on-site inspection of the material to verify that it is the material sampled for characterization and approval.

### 2. Inspection of Source

- a. The Contractor shall visually inspect excess materials generated from on-site construction proposed to be reused. Materials shall be inspected for presence of foreign, recycled, ~~or~~ reprocessed material, or unexpected regulated material identified by visual and/or olfactory methods. The Engineer may at any and all times perform an independent inspection. Material may be tested according to paragraph 2.09 at the Engineer's discretion. Material may be rejected due to the presence of deleterious substances or as a result of substandard test results.

## 2.09 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION OF OFF-SITE MATERIAL

- A. The Contractor shall provide characterization and testing as described below for off-site borrow materials. Testing results shall meet the Port of Tacoma Import Material Screening Criteria to be considered acceptable.
- B. The Contractor is responsible for all testing costs associated with characterization of off-site borrow materials. The Port is responsible for testing costs associated with on-site borrow materials and excess materials to be exported.
- C. The Contractor shall provide the following information with each sample submitted:
  1. Material Source
  2. Proposed On-site Use
  3. Sampling dates
  4. Chain of custody
  5. Sampling locations

6. Contractor's certification that the samples submitted are representative of the materials that shall be used at the site.

D. Characterization Testing shall include:

1. Physical Properties:
  - a. Grain Size Distribution (ASTM D 422-63)
  - b. Maximum Dry Density (ASTM D1557)
2. Metals and Chemicals:
  - a. Import Material Screening Criteria as indicated in Table 31 00 00 - 1 – Import Material Screening Criteria
  - b. Petroleum Hydrocarbons (NWTPH-Gx (Gasoline) and –Dx (Diesel/Oil))

Table 31 00 00 - 1 – Import Material Screening Criteria

Chemical / Metal Name	Gravel/Rock Criteria (mg/kg)	Soil Criteria (mg/kg)
<b>Volatile Organic Compounds (EPA Method 8260)</b>		
Benzene	-	0.03
Ethylbenzene	-	6.0
Toluene	-	7.0
Xylenes	-	9.0
Tetrachloroethylene (PCE)	-	0.05
<b>Semi-Volatile Organic Compounds (EPA Method 8270)</b>		
acenaphthene		99.8
anthracene		2,284
benzo[a]anthracene		0.9
benzo[a]pyrene		0.1
benzo[b]fluoranthene		1.4
benzo[k]fluoranthene		13.7
benzoic acid	-	385
benzyl alcohol	-	8,000
bis(2-ethylhexyl)	-	13.9
phthalate	-	12.9
butyl benzyl phthalate	-	95.5
cresol;o-	-	3.1
cresol;p-	-	8,000
dibenzo[a,h]anthracene	-	0.1
dibenzofuran	-	80
di-butyl phthalate	-	59.7
dichlorobenzene;1,2-	-	9.9
dichlorobenzene;1,4-	-	0.2
diethyl phthalate	-	97.8
dimethylphenol;2,4-	-	1.6
di-n-octyl phthalate	-	800
fluoranthene	-	632
fluorene	-	102
hexachlorobenzene	-	0.09

hexachlorobutadiene	-	0.6
indeno[1,2,3-cd]pyrene	-	1.4
methyl naphthalene;2-	-	320
naphthalene	-	5.0
nitrosodiphenylamine;N-	-	0.6
pentachlorophenol	-	0.004
phenol	-	15.8
pyrene	-	656
trichlorobenzene;1,2,4-	-	0.06

<b>Pesticides / PCBs (EPA Method 8081/8082)</b>		
ddd	-	0.3
dde	-	0.4
ddt	-	3.0
Polychlorinated biphenyls (PCBs)	-	1.0
<b>Metals (EPA Method 6010/6020/7041)</b>		
Arsenic	13.8	13.8
Cadmium	2.0	2.0
Chromium (total)	2,000	2,000
Chromium (VI)	-	19
Copper	143	143
Lead	250	250
Mercury	2.0	2.0
Nickel	418	418
Zinc	5,981	5,981

### PART 3 – EXECUTION

EXCAVATING AND GRADING WHICH IS PART OF THIS CONTRACT, SHALL BE COMPLETED WITHIN THE TOLERANCES ESTABLISHED OR WITHIN REASONABLY CLOSE CONFORMITY WITH THE ALIGNMENT GRADE AND CROSS SECTIONS INDICATED ON THE DRAWINGS OR AS ESTABLISHED WITHIN THESE SPECIFICATIONS.

#### 3.01 EXCAVATION AND GRADING

A. Excavation: Shall be the naturally occurring earth, sand, gravel, clays, or mixtures of the above, required to be moved for the construction of roadways, slopes, approaches, parking areas, service yard and associated work. Excavation material shall be moved with the use of mechanical equipment, such as shovels, loaders, bulldozers, graders, rippers, etc., but shall not require drilling and blasting or drilling and line breaking. Excavation by sluicing method will not be permitted unless specifically approved by the Engineer. In general, excavation shall be removed in horizontal layers in such a way that the resulting material will be a reasonable blend of the naturally occurring materials.

Embankment Compaction (Filling): Place material used for the construction of embankment in horizontal layers upon earth which has been stabilized or otherwise approved by the Engineer for embankment construction.

Irrespective of the method of compaction specified, at the time of compaction the moisture content of that portion of the embankment material passing a U.S. No. 4 sieve shall be not more

than three (3) percentage points above or below the optimum moisture content at 100% density as determined by Compaction Control Density Tests, described in Article "Compaction Control Tests" these specifications.

Construct earth embankment in compacted layers of uniform thickness. Carry the layers up full width from the bottom of the embankment. Compact the slopes of all embankments to the required density as part of the embankment compaction work. The embankment shall be compacted with modern, efficient compacting units satisfactory to the Engineer. The compacting units may be of any type, provided they are capable of compacting each lift of the material to the specified density. The right is reserved for the Engineer to order the use of any particular compacting unit discontinued if it is not capable of compacting the material to the required density within a reasonable time, or if the equipment may damage underlying or adjacent soils or structures.

Construct earth embankments in successive horizontal layers not exceeding 4 inches in loose thickness except that the layers in the top 2-feet shall not exceed 2-inches in loose thickness. Compact each layer of the top 2-feet of embankment to 95% and each layer of embankment below the top 2-feet to 90% of the maximum density as determined by compaction control tests. Use small mechanical or vibratory compactor units to compact the layers adjacent to structures that are inaccessible to the loaded haul equipment or other compaction rollers.

### 3.02 EXCAVATION FOR TRACK AND STRUCTURES, AND TRENCHING FOR UTILITIES

- A. Excavate as necessary for track and structures to lines and grades indicated on the drawings.
- B. Excavation below the designed depth, except as directed by the Port, shall be backfilled with quarry spalls, or other suitable backfill material as approved by the Engineer and compacted as specified, at no extra cost to the Port.
- C. Brace and shore sides of excavations. Comply with all federal, state, and local regulations regarding shoring, bracing, and other protection requirements.
- D. Keep water out of excavated pits and trenches by pumping or other means of dewatering. Water level shall be kept below the bottom of concrete pours before, during, and for a minimum of three days thereafter.
- E. Protect excavated material, stockpiled for use as backfill, from contamination by other materials and from damage by weather by covering with waterproof sheeting or other suitable means.
- F. **Unsuitable Structural and Trench Excavation:** Shall consist of unstable materials, such as peat, muck, water-impregnated clays, swampy or other undesirable materials, including buried logs, stumps, or trash. Unsuitable excavation materials shall be removed to the depth designated by the Engineer.

Unsuitable material excavated shall be replaced with Gravel Backfill for Drains per paragraph 2.04 as directed by the Engineer.

Unsuitable materials, excess material and excavated material not approved by the Engineer for use as fill or backfill shall be transported off-site by the Contractor in accordance with Section 01 35 43.19, Export Soil Management.

### 3.03 FILL AND BACKFILL FOR STRUCTURES AND UTILITIES

- A. All underground structures including manholes, catch basins, oil/water separators, flow splitters, vaults, and/or other structures, shall be over excavated by one foot. The subgrade shall be prepared, and a minimum of 12 inches of Aggregate Base Course shall be placed and compacted.

- B. Place backfill and structural backfill to lines and grades indicated on the Drawings.
- C. Remove water from excavated areas, by pumping or other means, before placing any fill material.
- D. Compact subgrade, as specified in paragraph 3.04, before placing any fill or backfill material.
- E. Do not place any fill against concrete walls/structures until the concrete has attained its specified design strength and/or certain other construction sequence criteria, if noted on the drawings, are met, or as specifically approved by the Port.
- F. Place fill in layers not exceeding 12 inches (loose thickness) and compact to at least 95% of dry density (ASTM D 1557).

#### 3.04 COMPACTION

- A. Compaction shall be performed with approved compaction equipment suited to the soil and the area being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Each lift of material placed shall be uniformly compacted to the density indicated for the specific material and use set forth in these Specifications. The percent of density required is in relation to the maximum density obtainable at optimum moisture content (Compaction Control Density) as determined in paragraph 3.05 "Compaction Control Tests."

#### 3.05 COMPACTION CONTROL TESTS

- A. Laboratory and field tests shall be performed in accordance with the applicable provisions of these Specifications.
  - 1. Compaction control density shall be the maximum density at optimum moisture content as determined by ASTM D-1557, Standard Methods for Moisture-Density Relationships of Soil and Soil Aggregates, Methods B, C or D as applicable but shall be no less than 95% of dry density for Select Fill and Backfill and no less than 98% of dry density for Base Course Material.
  - 2. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D1556, D2167, or D2922.

#### 3.06 EXISTING TRACKBED BACKFILL

- A. Backfill depressed areas of existing trackbed where track removal has occurred as indicated on the Drawings. Backfill existing trackbed with aggregate base course conforming to Section 32 11 23, Aggregate Base Courses. Place backfill within depressed areas to a depth of 2 inches above the surrounding surface grade.

#### 3.07 PREPARATION FOR BASE COURSE OR GRAVEL SURFACING:

- A. Preparation of Subgrade: Immediately prior to placement of surfacing materials, clean the entire width of the area of all debris and dispose of as directed by the Engineer. All depressions or ruts which contain storm water shall be drained.  
Shape the entire subgrade to a smooth uniform surface, true to line, grade, and cross section as staked by the Engineer. Compact the roadbed material for a depth of six-inches below the subgrade to 95% of the maximum density as determined by compaction tests ASTM Designation D1557. If soft or spongy material underlying the upper six inches of the area being prepared precludes satisfactory compaction of the upper six inches, loosen, aerate, or excavate, replace and compact to the required density as directed by the Engineer.

Remove and dispose of excess material which cannot be disposed of by normal drifting to low spots during blading and shaping operations or by placing in subgrade areas deficient in materials or by wasting, all as directed by the Engineer. Subgrade areas deficient in materials shall be brought to grade by importing suitable materials from other subgrade areas or other sources as directed by the Engineer. Materials added to subgrade areas deficient in materials shall be watered and compacted as necessary to yield a true finished subgrade as described above.

Once it is prepared, maintain the subgrade for surfacing in the finished condition until the first course of surfacing has been placed.

B. Finishing Subgrades: Before any paving or base material is placed, the subgrade shall be brought to the proper line, grade and cross section and shall be so maintained until the base course and paving is placed.

Compact the subgrade for pavement to 95% of maximum density as defined for Compaction Control Density, Article "Compaction Control Tests" these Specifications, to a minimum depth of six inches.

C. Subgrade Protection: Take all precautions necessary to protect the subgrade from damage; hauling over the finished subgrade shall be limited to that which is essential for construction purposes. Equipment used for hauling over the prepared subgrade which, in the opinion of the Engineer, is causing undue damage to the prepared subgrade or to the underlying materials, shall be removed from the work at the request of the Engineer. Repair at the Contractor's expense all cuts, ruts and breaks in the surface of the subgrade prior to placing surfacing, treated base, or paving materials. Protect the prepared subgrade from both the Contractor's traffic and public traffic and maintain the subgrade by blading and rolling as frequently as may be necessary to preserve the subgrade in a completely satisfactory condition.

**END OF SECTION**