Klickitat County Port District No. 1

ADDENDUM NO. 2

2013-10 – Marina Way Overlay Project
September 18, 2012

THIS ADDENDUM MAY CHANGE THE TERMS AND CONDITIONS OF THE CONTRACT
*** * * REMEMBER TO ACKNOWLEDGE RECEIPT OF THIS ADDENDUM * * ***

The Contractor is to note the following changes to the Scope of Work for the Marina Way Overlay Project.

Summary: This Addendum will eliminate the spot repair, geotextile and pre-level work and will replace those items with a HMA pre-level and geotextile installation over the entire roadway surface identified for an overlay.

Narrative: This narrative of Work supersedes and modifies that shown in the Plan set. The Contractor shall:

1. Provide appropriate traffic control. Construction of the detour road is not required. The Contractor may elect to close one-lane of traffic at a time, with proper traffic control / flaggers, for paving operations;
    a. If the Contractor elects not to construct the detour road then lane closure on Marina Way will be limited to a maximum of three (3) calendar days.
2. Prepare the roadway surface for pre-level by cleaning, removing any loose material and sweeping;
3. Provide a tack coat of CSS-1 emulsified asphalt (undiluted) at an application rate of 0.10 gallons per square yard;
4. Provide HMA for Pre-Leveling throughout the overlay area identified in the Plans;
    a. The HMA for Pre-Level can be either Cl. 1/2” or Cl. 3/8” at the Contractors discretion
    b. The screed is to be pulled ‘tight’ at the crown and the edge of the roadway
    c. Each lane is to be pre-leveled in one (1) pass
5. Provide a tack coat of CSS-1 emulsified asphalt (undiluted) at an application rate of 0.20 gallons per square yard;
6. Provide MiraPave MPV500 (or equal) geotextile pavement reinforcement in a 12.5’ roll width in each lane for the entire length of the overlay area;
7. Provide HMA for Overlay throughout the overlay area identified in the Plans;
    a. The HMA for Overlay is to be Cl. 1/2”
    b. The width of the overlay is to match the existing roadway
    c. The compacted thickness of the overlay is to be 1-1/2”
8. Provide asphalt removal as identified in the Plans;
9. Grade and re-compact the existing aggregate at the removal areas;
10. Provide HMA for Approach as identified in the Plans;
11. Remove all debris and traffic control devices upon completion of the Work.

Changes: The modifications to the Scope of Work described above and the Sections described below are hereby made a part of the Contract Documents:

1. Section 00 43 22 – **Unit Prices** is hereby replaced with the following revised Section;
2. Section 01 55 26 – **Traffic Control**
   a. The first sentence of paragraph 1.1.B is modified as follows:

      "The Contractor may, at their option, provide and maintain a temporary detour route and proper traffic control devices to allow for full closure of the section of roadway being worked on."
3. Section 32 01 17.61 – **Sealing Cracks in Asphalt Paving** is hereby eliminated;
4. Section 32 01 17.62 – **Geotextile Interlayer for Bituminous Pavement Overlays** is hereby replaced with the following revised Section;
5. Section 32 12 16 – **Asphalt Paving** is hereby replaced with the following revised Section.

Section 00 43 22 – **UNIT PRICES** ----------

The undersigned bidder proposes and agrees, if its bid is accepted, to furnish the goods and services for the following prices:

Bid Item	Spec. Section	Est. Qty.	Unit of Measure	Item Description	Unit Price	Total Amount
1	01 71 13	1	L.S.	Mobilization	$_____	$_____
2.	01 55 26	1	L.S.	Project temporary traffic control	$_____	$_____
3.	02 41 13	88	S.Y.	Removing asphalt concrete pavement	$_____	$_____
4.	32 01 17	4902	S.Y.	Paving Geotextile reinforcement	$_____	$_____
5.	32 12 16	6	Ton	Emulsified asphalt for Tack Coat	$_____	$_____
6.	32 12 16	210	Ton	HMA for Pre-Leveling Cl. 1/2 in. PG 64-22	$_____	$_____
7.	32 12 16	420	Ton	HMA for Overlay Cl. 1/2 in. PG 64-22	$_____	$_____
8.	32 12 16	60	Ton	HMA for Approach Cl. 1/2 in. PG 64-22	$_____	$_____
				TOTAL BID	**$**_____	

End of Section 00 43 22

Section 32 01 17.62 – **GEOTEXTILE INTERLAYER FOR BITUMINOUS PAVEMENT OVERLAYS** ---------

Part 1 – **GENERAL**

1.1 **Summary**

A. This specification is applicable to the use of a geosynthetic paving fabric saturated with asphalt cement between pavement layers.

B. The function of the geosynthetic paving fabric is to act as a waterproofing and stress relieving membrane within the pavement structure.

C. This specification is not intended to describe fabric membrane systems specifically designed for pavement joints and localized (spot) repairs.

1.2 **References**

A. American Association of State Highway and Transportation Officials (AASHTO) “Standard Specification for Geotextile Specification for Highway Applications” Designation M 288-05.

B. Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP).

1.3 **Definitions**

A. “Hot mix asphalt” (HMA) shall mean a paving material comprised of a combination of stone, sand, or gravel bound together by asphalt cement.

B. “Minimum Average Roll Value” (MARV) shall mean the property value calculated as typical minus two standard deviations. Statistically, it yields a 97.7 percent degree of confidence that any sample taken during quality assurance testing will exceed the value reported.

C. “Typical Roll Value” shall mean the property value calculated from the average or mean obtained from the test data.

D. “WSDOT specifications” shall mean the *Standard Specifications for Road, Bridge, and Municipal Construction (M41-10)*, Washington State Department of Transportation and Washington State Chapter of the American Public Works Association, latest edition.

1.4 **Submittals**

A. Submit under provisions of Section 01 33 23:

B. The Contractor shall provide the Engineer a certificate stating the name of the geotextile manufacturer, product name, style, chemical compositions of filaments or yarns and other pertinent information to fully describe the geotextile.

C. The Manufacturer is responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request.

D. The Manufacturer’s certificate shall state that the furnished geotextile meets MARV requirements of the specification as evaluated under the Manufacturer’s quality control program. A person having legal authority to bind the Manufacturer shall attest to the certificate.

1.5 **Delivery, Storage and Handling**

A. Geotextile labeling, shipment, and storage shall follow ASTM D 4873.

B. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

C. Each shipping document shall include a notation certifying that the material is in accordance with the Manufacturer’s certificate.

D. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants.

E. The protective wrapping shall be maintained during periods of shipment and storage. If the wrapping is damaged prior to installation, the outer wrap of geotextile material shall be discarded before installation.

F. During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from site construction damage, extended exposure to ultraviolet (UV) radiation, precipitation, chemicals that are strong acids or strong bases, flames, sparks, temperatures in excess of one hundred sixty degrees Fahrenheit (160º F), and any other environmental condition that might damage the geotextile.

Part 2 – **PRODUCTS**

2.1 **Manufacturers**

A. The geotextile used shall be from one of the following manufacturers:
   1. Propex Inc.; Chattanooga, Tennessee; 800-621-1273
   2. TenCate Geosynthetics Americas; Pendergrass, Georgia; 888-795-0808

B. Substitutions may be made subject to the provisions of Section 01 25 13.

2.2 **Materials**

A. Geotextile Interlayer (Paving Fabric):
   1. Acceptable materials include:
      a. Petromat 4598 as manufactured by Propex Inc.
      b. MiraPave MPV500 as manufactured by TenCate Geosynthetics Americas
   2. Substitutions may be made subject to the provisions of Section 01 25 13 conforming to the following requirements:
      a. Polypropylene, staple fiber, needle punched nonwoven geotextile, calendared on one side.
      b. Resistant to ultraviolet degradation.
      c. Minimum Average Roll Values as follows:

Property	Test Method	Units	Results
Grab Tensile Strength	ASTM D 4632	N (lbs)	450 (101)
Grab Elongation	ASTM D 4632	Percent	50
Mullen Burst	ASTM D 3786	kPa (psi)	1370 (200)
Mass Per Unit Area	ASTM D 5261	g/sm (oz/sy)	140 (4.1)
Asphalt Retention	ASTM D 6140	l/sm (gal/sy)	0.9 (0.20)
Melting Point	ASTM D 276	Degrees C (Degrees F)	160 (320)
UV Resistance	ASTM D 4355	Percent	70 at 150 hrs

B. Tack Coat:
   1. The sealant material used to impregnate and seal the geotextile, as well as bond it to both the base pavement and overlay, shall be Cationic Emulsified Asphalt (CSS-1) in accordance with Section 9-02.1(6) of the WSDOT specifications.
   2. Cutbacks and emulsions containing solvents shall not be used.

2.3 **Equipment**

A. Asphalt distributor capable of spraying the asphalt sealant at the prescribed uniform application rate without streaking, skipping, or dripping. The asphalt distributor shall be equipped with a hand spray having a single nozzle and positive shut-off valve.

B. Mechanical or manual lay down equipment capable of laying the geotextile smoothly.

C. Pneumatic rolling equipment capable of smoothing the geotextile into the sealant. Rolling is required where thin lifts or chip seals are used to ensure the geotextile bonds to the adjoining pavement layers in the absence of heat and weight associated with thicker lifts of asphaltic pavement.

D. Sanding equipment may be required.

2.4 **Accessories**

A. Stiff bristle brooms or squeegees to smooth the geotextile.

B. Scissors or blades to cut the geotextile

C. Brushes for applying asphalt sealant to geotextile overlaps

2.5 **Source Quality Control**

A. All geotextile material (paving fabric) shall be tested at a laboratory accredited by GAI-LAP for tests required for the geotextile, at frequency meeting ASTM D 4354.

Part 3 – **EXECUTION**

3.1 **Preparation**

A. Washed concrete sand may be spread over an asphalt-saturated geotextile to prevent geotextile adhesion to construction vehicle tires, facilitate movement of equipment during construction, and prevent tearing or delamination of the geotextile. HMA broadcast in front of construction vehicle tires may also serve this purpose. If sand is applied, excess quantities shall be removed from the geotextile prior to placing the surface course.

B. Neither the asphalt sealant nor the geotextile shall be placed when, in the opinion of the Engineer, weather conditions are not suitable. Air and pavement temperatures shall be sufficient to allow the asphalt sealant to hold the geotextile in place. For asphalt emulsions, the air and surface temperature shall be fifty degrees Fahrenheit (50º F) and rising.

C. The surface on which the geotextile is to be placed shall be reasonably free of dirt, water, vegetation, or other debris. Fillers shall be allowed to cure prior to geotextile placement.

3.2 **Installation of Tack Coat**

A. The specified rate of asphalt sealant application must be sufficient to satisfy the asphalt retention properties of the geotextile and bond the geotextile and overlay to the old pavement.

B. Application of the sealant shall be by distributor spray bar with hand spraying kept to a minimum. The temperature of the asphalt sealant shall be sufficiently high to permit a uniform spray pattern. To avoid damage to the geotextile, the distributor tank temperature shall not exceed three hundred twenty degrees Fahrenheit (320º F).

C. To improve the spray pattern, the temperature of the asphalt emulsion shall be no less than one hundred thirty degrees Fahrenheit (130º F) and no greater than one hundred sixty degrees Fahrenheit (160º F).

D. The target width of asphalt sealant application shall be the geotextile width plus six inches (6”). The asphalt sealant shall not be applied any farther in advance of geotextile placement than the distance the Contractor can maintain free of traffic.

E. The Contractor shall clean all asphalt spills from the road surface to avoid flushing and geotextile movement.

F. When asphalt emulsions are used, the emulsion shall be cured prior to placing the geotextile and final wearing surface. This means essentially no moisture remaining.

3.3 **Installation of Geotextile Paving Fabric**

A. The geotextile shall be placed onto the asphalt sealant (calendared or smooth side up) with minimum wrinkling prior to the time the asphalt has cooled and lost tackiness. Wrinkles or folds in excess of one inch (1") shall be slit and laid flat as directed by the Engineer.

B. Brooming and/or pneumatic rolling shall be required to maximize geotextile contact with the pavement surface.

C. Overlap of geotextile joints shall be sufficient to ensure full closure of the joint, but should not exceed six inches (6"). Transverse joints shall be lapped in the direction of paving to prevent edge pickup by the paver. A second application of asphalt sealant to the geotextile overlaps may be required if, in the judgment of the Engineer, additional asphalt sealant is needed to ensure proper bonding of the double geotextile layer.

D. The Contractor shall be responsible for the removal and replacement of geotextile that is damaged.

3.4 **Protection**

A. Traffic on the geotextile shall be limited to emergency and construction vehicles only.

B. Placement of the HMA overlay shall closely follow geotextile laydown. The temperature of the HMA shall not exceed three hundred twenty degrees Fahrenheit (320º F). In the event asphalt bleeds through the geotextile causing construction problems before the overlay is placed, the affected areas shall be blotted by spreading sand. To avoid movement of, or damage to, the saturated geotextile, turning of the paver and other vehicles shall be gradual and kept to a minimum.

End of section 32 01 17.62

Section 32 12 16 – **ASPHALT PAVING** ----------

Part 1 – **GENERAL**

1.1 **Summary**

A. This section includes materials testing and installation/preparation of aggregate base course, tack coat, asphalt concrete pavement and pavement repair.

1.2 **Definitions**

A. "Asphalt concrete" shall mean the composite material consisting of asphalt cement mixed with aggregate.

B. "Asphalt cement" shall mean a liquid asphalt (or binder) used to bind the aggregate.

C. "Hot mix asphalt" (HMA) shall mean a paving material comprised of a combination of stone, sand, or gravel bound together by asphalt cement.

D. "Relative compaction" shall mean the ratio, expressed as a percentage, of the in-place dry density to the laboratory maximum dry density.

E. "WSDOT specifications" shall mean the *Standard Specifications for Road, Bridge, and Municipal Construction (M41-10)*, Washington State Department of Transportation and Washington State Chapter of the American Public Works Association, latest edition.

1.3 **Quality Control**

A. The Port or its representative will test for compaction as described below.
1. Determine the density of the material in-place by nuclear methods, ASTM D 2922 and D 3017.

2. Determine laboratory moisture-density relations of soils and aggregate by ASTM D 698.

B. Compaction shall be deemed to comply with the specifications when no more than one test of any 10 consecutive tests falls below the specified relative compaction. Any one test shall be no more than 2 percentage points below the specified compaction. The Contractor shall pay the cost of any retesting of work not conforming to the specifications.

Part 2 – **PRODUCTS**

2.1 **Asphalt Concrete Paving**

A. Asphalt concrete paving for overlay and approach shall conform to commercial HMA Cl. 1/2 in. as described in Section 5-04 of the WSDOT specifications.

B. Asphalt concrete paving for pre-level shall conform to commercial HMA Cl. 1/2 in. or 3/8 in. as described in Section 5-04 of the WSDOT specifications.

2.2 **Asphalt Cement**

A. Asphalt cement shall be Performance Grade (PG) 64-22. Asphalt cement content in the HMA shall be 5.5% to 6.0%.

2.3 **Aggregate for Asphalt Concrete**

A. Aggregate shall be in accordance with Section 9-03.8 of the WSDOT specifications.

2.4 **Tack Coat**

A. Tack Coat shall be Cationic Emulsified Asphalt (CSS-1) in accordance with Section 9-02.1(6) of the WSDOT specifications.

Part 3 – **EXECUTION**

3.1 **Preparation of Existing Paved Surfaces**

A. Before the construction of HMA on an existing paved surface the entire surface of the pavement shall be clean. All fatty spots, asphalt patches, grease drippings, and other objectionable matter shall be entirely removed from the existing pavement. All pavement surfaces shall be thoroughly cleaned of dust, soil, pavement grindings, and other foreign matter. All holes and small depressions shall be filled with an appropriate class of HMA. The surface of the patched area shall be level and compacted thoroughly.

B. A tack coat of emulsified asphalt shall be applied to all paved surfaces upon which any course of HMA is to be placed or to which any course of HMA is to be abutted. The tack coat shall be uniformly applied to cover the existing pavement with a thin film of residual asphalt free of streak and bare spots. A heavy application of tack coat shall be applied to all joints. For roadways open to traffic the application of tack coat shall be limited to surfaces that will be paved during the same working shift. Spreading machinery shall be equipped with a thermometer to indicate the temperature of the tack coat material. Equipment shall not operate on any surface to which tack coat has been applied until the tack has broken and cured. If the Contractor's operation damages the tack coat, Contractor shall repair it prior to placement of the HMA. The emulsified asphalt may not be further diluted and shall not exceed the maximum temperature recommended by the emulsified asphalt manufacturer.
   1. Tack Coat Application Rates:
      a. Prior to Pre-Level Course—0.10 gallons per square yard on existing paved surface
      b. Prior to Geotextile Placement—0.20 gallons per square yard on pre-level course
   2. Tack coat shall not be applied when the ground temperature is below fifty degrees Fahrenheit (50º F) without written approval from the Engineer.

C. The Contractor shall place a pre-level course of HMA as shown in the plans and as stated. The Contractor shall conduct their operations in a manner that will protect the pavement that is to remain. Pavement that is damaged as a result of Contractor's operation shall be repaired by the Contractor to the satisfaction of Engineer at no cost to the Port.

D. The pre-level operation must fully encompass one lane width at a time. The paving machine screed must rest directly upon the crown and the edge of the existing roadway. Minor deviations from the existing grade and alignment may be allowed by the Engineer to maintain a smooth and consistent surface.

3.2 **Preparation of Unpaved Surfaces**

A. Before construction of HMA on existing unpaved surfaces the Contractor shall prepare said surfaces by blading and compacting the existing aggregate to provide a sound base for paving.

B. Compact the top 6" of subgrade to 95% relative compaction. Remove all soft material exposed by the compacting and replace with suitable, compacted material. The finish subgrade shall be within a tolerance of +/- 0.05 feet and shall be smooth and free from irregularities and at the specified relative compaction. The subgrade shall be extended over the full width of the base course.

3.3 **Installation**

A. Producing, hauling, placing, compacting, and finishing of HMA shall conform to Section 5-04 of the WSDOT specifications.

B. Prepare existing paved surface and provide HMA for Pre-Level per this Section.

C. Provide Geotextile Interlayer for Bituminous Pavement per Section 32 01 17.62.

D. Provide HMA for Overlay per this Section.

E. Remove existing pavement per Section 02 41 13.13.

F. Prepare existing unpaved surface and provide HMA for Approach per this Section.

G. The HMA shall be laid upon an approved surface, spread and struck off to the grade and elevation established. HMA pavers shall be utilized to distribute the mixture. On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the paving may be done with other equipment or by hand as approved by the Engineer.

H. Immediately after the HMA has been spread and struck off and after surface irregularities have been adjusted, the mix shall be thoroughly and uniformly compacted. The completed course shall be free of ridges, ruts, humps, depressions, objectionable marks, checking, cracking, and irregularities and shall conform to the line, grade, and cross sections shown in the plans. Compaction shall take place when the mixture is in the proper condition so that no undue placement, cracking, or shoving occurs. Areas inaccessible to large compaction equipment shall be compacted by mechanical or hand tampers. Any HMA that becomes loose, broken or contaminated, shows an excess or deficiency of asphalt, or is in any way defective shall be removed and replaced with new hot mix that shall be immediately compacted to conform to the surrounding areas. The type of rollers to be used and their relative position and the compaction sequence shall be the Contractors option provided the specified densities are obtained. Unless the Engineer has otherwise approved, rollers shall only be operated in the static mode when the internal temperature of the mix is less than one hundred seventy-five degrees Fahrenheit (175º F).

I. The completed surface of all courses shall be of uniform texture, smooth, uniform as to crown and grade, and free from defects of all kinds. The completed surface of the wearing course shall not vary more than one-eighth inch (1/8") from the lower edge of a ten foot (10') straight edge placed on the surface parallel to the centerline. The transverse slope of the completed surface of the wearing course shall not vary more than one-half inch (1/2") in ten feet (10') from the rate of transverse slope shown in the plans. When deviations in excess in the above tolerances are found that result from a high place in the HMA, the pavement surface shall be corrected by one of the following methods:

1. Removal of material from the high places by grinding with an approved grinding machine

2. Removal and replacement of the wearing course of HMA
3. Another method approved by the Engineer

The correction of defects shall be carried out until there are no deviations greater than the allowable tolerances. Deviations in excess of the above tolerances that result from a low place in the HMA and deviations resulting from a high place where corrective action, in the opinion of the Engineer, will not produce satisfactory results may be accepted with a price adjustment determined by the Engineer.

J. HMA shall not be placed on any roadway beginning November 1 through March 31 of the following year without written approval from the Engineer. HMA shall not be placed on any wet surface or when the average surface temperature is less than thirty-five degrees Fahrenheit (35º F) or when weather conditions otherwise prevent the proper handing or finishing of the HMA.

End of Section 32 12 16