



**PROJECT 33-SBC-1003 CONTRACT DOCUMENTS**

**NORTH BRANCH CANAL LINING PHASE IIIA**

**MATERIAL PURCHASE REQUISITION -  
IMPERMEABLE GEOSYNTHETIC**

FOR

**KITTITAS RECLAMATION DISTRICT**

315 NORTH WATER STREET

P.O. BOX 276

ELLENSBURG, WA 98926

(509) 925-6158

DECEMBER 2018

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**SECTION 00 10 00 – INVITATION TO BID**

NOTICE: The Kittitas Reclamation District ("District") hereby gives notice that it will accept sealed Bids for the supply and delivery of impermeable geotextile membrane material in support of the planned North Branch Canal Lining Phase IIIA.

PART 1 – GENERAL

1.01 BID SUBMISSION

The District will receive sealed Bids at the location listed below until **2:00 p.m. local time on December 28, 2018**, and will then and there open and publicly read the Bids for the supply and delivery of materials.

Kittitas Reclamation District  
315 North Water Street  
Ellensburg, Washington 98926

1.02 WORK DESCRIPTION

Requested materials consist of 200,000 square feet (minimum to the manufacturers nearest full roll) impermeable, three-layer minimum, composite geosynthetic membrane for reservoir or canal lining. The District requires the material to be manufactured, supplied, and delivered by February 15, 2019. The District shall take possession of the material and store it for later use and integration as owner supplied material into the anticipated North Branch Canal Lining Phase IIIA work.

1.03 BID INSTRUCTIONS

Bidders will submit sealed Bids stating their price quote for supply and delivery of the stated materials. Refer to Section 31 05 19 (Geosynthetics) for required material specifications and associated submittal documentation to be included with sealed Bids submitted to the District. Bid price shall include all related manufacturing, shipping, handling, fees, and taxes as applicable.

1.04 BID PREPARATION COSTS

Bidders are solely responsible for the cost of preparing their Bids.

1.05 RESERVATION OF RIGHTS

The District specifically reserves the right, in its sole discretion, to reject any or all Bids or re-Bids or to waive inconsequential deviations from Bid requirements not involving time, price, or work quality.

KITTITAS RECLAMATION DISTRICT

Dated this 5th day  
of December, 2018

By:   
Urban Eberhart

Title: District Manager

PART 2 – PRODUCTS

(Not used)

PART 3 – EXECUTION

(Not used)

END OF SECTION

## SECTION 31 05 19 – GEOSYNTHETICS FOR EARTHWORK

### PART 1 – GENERAL

#### 1.01 SECTION INCLUDES

- A. Impermeable membrane.

#### 1.02 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

##### A. ASTM INTERNATIONAL (ASTM)

1. ASTM D4354..... Sampling of Geosynthetics for Testing
2. ASTM D4355/D4355M ..... Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
3. ASTM D4491/D4491M ..... Standard Test Methods for Water Permeability of Geotextiles by Permittivity
4. ASTM D4533/D4533M ..... Standard Test Method for Trapezoid Tearing Strength of Geotextiles
5. ASTM D4632/D4632M ..... Grab Breaking Load and Elongation of Geotextiles
6. ASTM D4751..... Standard Test Method for Determining Apparent Opening Size of a Geotextile
7. ASTM D4759..... Standard Practice for Determining the Specification Conformance of Geosynthetics
8. ASTM D4833/D4833M ..... Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products
9. ASTM D4873/D4873M ..... Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples
10. ASTM D5199..... Standard Test Method for Measuring the Nominal Thickness of Geosynthetics
11. ASTM D5261..... Standard Test Method for Measuring Mass per Unit Area of Geotextiles

12. ASTM D6241..... Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe

1.03 SUBMITTALS

- A. Representative sample (8- by 10-inch nominal).
- B. Manufacturer's data for the following:
  - 1. Impermeable Membrane: Submit for approval manufacturer's literature, specifications, storage, handling, and installation instructions for the geomembrane composite.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Ship, handle, store, and care for geosynthetics in accordance with manufacturer's instructions.
- B. Wrap geosynthetics in opaque plastic to prevent damage during transit and handling.
- C. Use 2 to 3 slings for lifting and positioning the rolls of geosynthetics.
- D. Mark each roll of geosynthetics with name of material, approved roll good numbers, specifications number, quantity contained, and order or purchase number.
- E. Do not stack rolls more than 3 rolls high.

PART 2 – PRODUCTS

2.01 IMPERMEABLE MEMBRANE

- A. The impermeable membrane shall be a minimum three-layer geomembrane composite consisting of two layers (top and bottom) of minimum polyester or polypropylene nonwoven geotextile factory-bonded to either a non-reinforced or reinforced PVC geomembrane meeting the following performance characteristics:
  - 1. Formulated for use as a reservoir and canal liner.
  - 2. Integrated stabilizers and biocides for durability.
  - 3. Uniform throughout and free from dirt, oil, foreign matter, scratches, cracks, creases, bubbles, tears, holes, pinholes, or other defects which may affect its serviceability.

4. Unless otherwise indicated, required values in the table below are nominal values when tested in weaker principle direction.

Property	Test Method	Value for non-reinforced Impermeable Membrane	Value for reinforced Impermeable Membrane
Mass per Unit Area, nominal	ASTM D5261	44 oz/yd <sup>2</sup>	40 oz/yd <sup>2</sup>
Membrane Thickness, minimum	ASTM D5199	30 mils	24 mils
Grab Tensile, machine direction	ASTM D4632	450 lbs	450 lbs
Grab elongation, minimum	ASTM D4632	50 percent	15 percent
Trapezoid Tear, minimum	ASTM D4533	180 lbs	200 lbs
Puncture Strength, minimum (5/16 inch diameter)	ASTM D4833	250 lbs	300 lbs
Permeability at 15 psi, maximum	ASTM D4491	4.5x10 <sup>-11</sup> cm/s	4.5x10 <sup>-11</sup> cm/s
UV Resistance, minimum strength retained at 500 hours	ASTM D4355 ASTM D4632	90 percent	90 percent

B. Preapproved impermeable membrane products:

1. Canal<sup>3</sup> 123012 geomembrane composite (nonreinforced) manufactured by Huesker (P.O. Box 411529, Charlotte, NC 28241-1529; (800) 942-9418; [www.huesker.com](http://www.huesker.com))
2. Versa Shield 8/24/8 24mil Western Series geomembrane composite (reinforced) manufactured by Western Environmental Liner (8120 W. Harrison St., Tolleson, AZ 85353, (623) 232-8215, [www.westernliner.com](http://www.westernliner.com))

**PART 3 – EXECUTION**

**3.01 DELIVERY**

Material to be delivered to KRD facility and as specified in section 1.04 Delivery and Handling. Vendor to offload material to neat stacks.

END OF SECTION

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