



Ducks Unlimited, Inc.



METRO

## SCOPE OF CONSULTANT SERVICES PHASE 2

DESIGN, CONTRACT ASSISTANCE, AND CONSTRUCTION MANAGEMENT FOR ALTERATIONS OF WATER CONTROL STRUCTURES AT SMITH/BYBEE AND MULTNOMAH CHANNEL NORTH AND SOUTH.

SCOPE OF DESIGN SHALL INCLUDE ELEMENTS AS LISTED BELOW AND DEFINED ON THE FOLLOWING PAGES. A 90% DESIGN SHALL BE SUBMITTED TO METRO FOR REVIEW:

1. GATES
2. STOPLOGS
3. TRASH RACKS
4. FISH LADDER
5. WALKWAY AND RAILINGS
6. DEBRIS BOOM
7. CULVERTS & SLOPES

SCOPE OF CONTRACT ASSISTANCE SHALL INCLUDE ELEMENTS AS LISTED BELOW:

1. PROVIDE ELECTRONIC PLANS AND SPECIFICATIONS FOR PROCUREMENT.
2. ATTEND PREBID CONFERENCE AT PROJECT SITE.
3. REVIEW AND APPROVE QUALIFIED BIDS. RECOMMEND AWARD.

SCOPE OF CONSTRUCTION MANAGEMENT SERVICES SHALL INCLUDE ELEMENTS AS LISTED BELOW:

1. ATTEND PRECONSTRUCTION CONFERENCE.
2. REVIEW CONTRACTOR SCHEDULE AND SUBMISSIONS.
3. REVIEW CONTRACTOR CHANGE REQUESTS.
4. PERFORM 6 SITE VISITS TO MONITOR CONTRACTOR PERFORMANCE.

## SCOPE OF DESIGN SMITH-BYBEE

### DESIGN ELEMENT 1 GATES

#### Lockable Combination Sliding-Flap Gate

Design gates to replace 2 existing Flap gates (54' Diameter). Existing gates would be removed. New gates would be installed in place of existing gates. Gates will be capable of both hand-wheel and/or motor driven.

Gate material (2-54" diameter)	\$26,000
Gate installation (dewater)	<u>\$18,000</u>
Total	\$44,000

### DESIGN ELEMENT 2 STOPLOGS

#### Aluminum Stoplogs

Design aluminum stoplogs to replace wood stoplogs. A locking mechanism would be installed to secure stoplogs and restrict removal.

Stoplog material (6"ht. by 48" lg)	\$5,500
Stoplog guide material	\$3,000
Lock Rod and Railing	\$4,600
Stoplog and Lock installation	<u>\$5,500</u>
Total	\$18,600

**DESIGN ELEMENT 3 TRASH RACKS**

**Vertical Swivel Trash Rack**

Design vertical swivel trash racks (with construction option N.I.C.) to replace vertical trash racks at outlet of culverts. Trash racks shall swivel about vertical axis to allow an open and closed position. Operation would allow removal of debris trapped inside culverts.

Trash Rack material (10'ht. by 8' wide)	\$26,000
Concrete Wall modification	\$8,000
Trash Rack installation (dewater)	<u>\$12,500</u>
Total	\$46,500

**DESIGN ELEMENT 4 FISH LADDER**

**Modify lower weir/pool ladder**

Modify lower weir/pool ladder by removing center portion concrete baffles. This will convert weir pool type ladder to vertical slot- type ladder.

Dewater ladder	\$4,000
Cut 4" wide slot	\$5,500
Install baffle wall stiffener	<u>\$4,500</u>
Total	\$14,000

**DESIGN ELEMENT 5 WALKWAY AND RAILINGS**

**Grating**

Maintain existing operable grating over ladder access. Design new static grating to cover all openings between stoplog guides and culvert opening. In addition provide operable grating over upper fish ladder area.

Grating materials(\$25/sf,500sf)	\$12,500
Grating installation	<u>\$8,500</u>
Total	\$21,000

**Railings**

Remove existing railing system of structure. Install new railings.

Rail materials (\$45/lf,120lf)	\$5,400
Gate material	\$600
Rail installation	<u>\$4,500</u>
Total	\$10,500

**DESIGN ELEMENT 6 DEBRIS BOOM**

**Perma Fence by Elastec.**

Remove existing wooden log booms at lake and slough. Install anchoring system for boom floating boom. Install boom.

Perma Fence Boom materials(\$40/lf,240lf)	\$9,600
Anchorage system	\$6,000
Boom installation	<u>\$5,500</u>
Total	\$21,100

**SMITH-BYBEE**

**ENGINEER ESTIMATE OF CONSTRUCTION COST**

**TOTAL CONSTRUCTION COST ESTIMATE 1:** Design elements 1-6

1) Gate	Locking flap gate	\$44,000
2) Stoplogs	Aluminum stoplogs, guides, lock rods	\$18,600
3) Trash Rack	Vertical swivel trash rack	N.I.C.
4) Fish ladder	Lower ladder modifications	\$14,000
5) Walkways and railings	Grating and fencing	\$31,500
6) Debris Boom	Perma fence	\$21,100
7) Culverts and Slopes	N/A	N/A

Subtotal	\$129,200
Contingency 15%	\$19,380
<u>Total</u>	<u>\$148,580</u>

## SCOPE OF DESIGN MULTNOMAH CHANNEL SOUTH

### DESIGN ELEMENT 1 GATES

#### Retrofit existing gate with new stem and side operator.

Existing gate (one) shall be retrofitted with new stainless steel stem and bevel gear operator for manual operation and/or actuation by electric or gas portable operator.

Bevel gear and stem materials	\$1,500
Stem and bevel gear installation	<u>\$2,000</u>
Total	\$3,500

### DESIGN ELEMENT 2 STOPLOGS

#### Aluminum Stoplogs

Aluminum stoplogs would replace wood stoplogs in the fish ladder. A locking mechanism would be installed to secure stoplogs and restrict removal. A stoplog storage box would be secured to site metal works.

Stoplog material (6" ht. by 18" lg)	\$500
Stoplog guide material	\$500
Lock Rod and Railing	\$1,200
Stoplog and Lock installation	<u>\$1,500</u>
Total	\$3,700

### DESIGN ELEMENT 3 TRASH RACKS

#### Horizontal Swivel Trash Rack

Horizontal swivel trash racks would replace vertical trash racks at outlet of culverts.

Trash Rack material (two-8'ht. by 9' wide, one-5'by5')	\$14,000
Trash Rack installation (no dewater)	<u>\$4,000</u>
Total	\$18,000

### DESIGN ELEMENT 4 FISH LADDER

Replace wood stoplogs with aluminum stoplogs. Cost included in design element 2

**DESIGN ELEMENT 5 WALKWAY AND RAILINGS**

**Grating**

Install metal grating for access to headworks and tailworks of structure. Headworks grating shall include stair access and cantilevered platform upstream of stoplog guide. Tailworks grating shall include stair access to trash racks and working platform at culvert outlet.

Grating & support materials(\$40/sf,300sf)	\$12,000
Grating installation	<u>\$7,500</u>
Total	\$19,500

**Railings**

Install metal railings to upstream side of structure and along grating stairway on downstream side of structure.

Metal railing materials (\$65/lf,50lf)	\$3,500
Railing installation	<u>\$2,800</u>
Total	\$6,300

**DESIGN ELEMENT 7 CULVERTS AND SLOPES**

**Repair soil piping problem on both sides of structure**

Excavate for installation of concrete cutoff wall. Install concrete cutoff wall.

Excavation	\$6,500
Install Concrete cutoff walls(24yds)	<u>\$18,000</u>
Total	\$24,500

## MULTNOMAH CHANNEL SOUTH

### ENGINEER ESTIMATE OF CONSTRUCTION COST

<u>TOTAL COST ESTIMATE 1:</u>	Design elements 1-7_option 1	
1) Gate	Retrofit 1 gate with new stem & bevel gear operator	\$3,500
2) Stoplogs	Aluminum stoplogs, guides, lock rods, lock box	\$3,700
3) Trash Rack	Three horizontal swivel trash racks	\$18,000
4) Fish ladder	Replace stoplogs (price in item 2)	N/A
5) Walkways and railings	Grating and railing	\$25,800
6) Debris Boom	N/A	N/A
7) Repair soil piping	Concrete cutoff wall	\$24,500
	Subtotal	\$75,500
	Contingency 15%	<u>\$11,325</u>
	Total	\$86,825

## SCOPE OF DESIGN MULTNOMAH CHANNEL NORTH

### DESIGN ELEMENT 1 GATES

Retrofit 3 existing gates with new stem and side operator.

Existing gates (three) shall be retrofitted with new stainless steel stem and bevel gear operator for manual operation and/or actuation by electric or gas portable operator.



Install metal grating for access to headworks and tailworks of structure. Headworks grating shall include stair access and cantilevered platform upstream of stoplog guide. Tailworks grating shall include stair access to trash racks and working platform at culvert outlet.

Grating & support materials(\$40/sf,200sf)	\$8,000
Grating installation	<u>\$8,500</u>
Total	\$16,500

Railings

Install metal railings to upstream side of structure and along grated stairway on downstream side of structure.

Metal railing materials (\$65/lf,80lf)	\$5,200
Railing installation	<u>\$4,000</u>
Total	\$9,200

DESIGN ELEMENT 6 DEBRIS BOOM

NO OPTIONS

DESIGN ELEMENT 7 CULVERTS AND SLOPES

NO OPTIONS

Bevel gear and stem materials	\$4,500
Stem and bevel gear installation	<u>\$3,500</u>
Total	\$8,000

**DESIGN ELEMENT 2 STOPLOGS**

**Aluminum Stoplogs**

Aluminum stoplogs would replace wood stoplogs in the fish ladder. A locking mechanism would be installed to secure stoplogs and restrict removal. A stoplog storage box would be secured to site metal works.

Stoplog material (6"ht. by 18" lg)	\$500
Stoplog guide material	\$500
Lock Rod and Railing	\$1,200
Stoplog and Lock installation	<u>\$1,500</u>
Total	\$3,700

**DESIGN ELEMENT 3 TRASH RACKS**

**Horizontal Swivel Trash Rack**

Horizontal swivel trash racks would replace two trash racks at outlet of culverts.

Trash Rack material (6'ht. by 7' wide)	\$8,500
Trash Rack installation (no dewater)	<u>\$3,200</u>
Total	\$11,700

**DESIGN ELEMENT 4 FISH LADDER**

Replace stoplogs with aluminum stoplogs. Cost included in design element 2

**DESIGN ELEMENT 5 WALKWAY AND RAILINGS**

**Grating**

## MULTNOMAH CHANNEL NORTH

### ENGINEER ESTIMATE OF CONSTRUCTION COST

<u>TOTAL COST ESTIMATE 1:</u>	Design elements 1-7_option 1	
1) Gate	Retrofit 3 gates with new stem & bevel gear operator	\$8,000
2) Stoplogs	Aluminum stoplogs, guides, lock rods, lock box	\$3,700
3) Trash Rack	Two horizontal swivel trash rack	\$11,700
4) Fish ladder	Replace stoplogs (price in item 2)	N/A
5) Walkways and railings	Grating and railing	\$25,700
6) Debris Boom	N/A	N/A
7) Culverts & Slopes	N/A	N/A
	Subtotal	\$49,100
	Contingency 15%	<u>\$7,365</u>
	Total	\$56,465