"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria **Date:** July 07, 2008

cost summary

	Conifer	Hardwood	Total
Gross Timber Sale Value	$2,030,244.49	$329,629.10	$2,359,873.59
		Project Work:	$(557,985.00)
		Advertised Value:	$1,801,888.59

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria **Date: July 07, 2008**

timber description

Location: Portions of Sections 16, 17, 20, 21, 28, 29, & 32, T6N, R7W, W.M., Clatsop County, Oregon.

Stand Stocking: 100%

SpecieName	AvgDBH	Amortization (%)	Recovery (%)
Douglas - Fir	20	0	97
Western Hemlock / Fir	18	0	96
Sitka Spruce	32	0	96
Red Cedar	24	0	96
Alder (Red)	16	0	95

Volume by Grade	2S	3S	4S	Camprur	Total
Douglas - Fir	4,377	916	218	0	5,511
Western Hemlock / Fir	2,511	1,213	220	0	3,944
Sitka Spruce	109	51	0	0	160
Red Cedar	1	0	0	0	1
Alder (Red)	0	0	0	794	794
Total	6,998	2,180	438	794	10,410

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria **Date: July 07, 2008**

comments: Pond Values Used: 2nd Quarter Calendar Year 2008.

Log Markets: Mist, Clatskanie, Tillamook, Forest Grove.

SCALING COST ALLOWANCE = $5.00/MBF

FUEL COST ALLOWANCE = $4.50/Gallon

HAULING COST ALLOWANCE
Hauling costs equivalent to $700 daily truck cost.

Other Costs (with Profit & Risk to be added):
100% Branding and Painting: $1MBF x 10,410 MBF = $10,410
Additional log loader piling: 3 Hours x $85/hr x 12 landings =$3,060
Area 2: Use of dump truck to haul slash to waste area - 20 hrs. x $59/hr. = $1,180
Additional shovel time to load slash - 10 hrs. x $87.50 =$875
Burning Slash Piles at Swede Quarry: 0.10 Ac.X$1,980 = $198
TOTAL Other Costs (with Profit & Risk to be added) = $15,723

Other Costs (No Profit & Risk added):
Excavator Slash Piling: 115.5 hrs x $120/hr = $13,860
Excavator move-in: $945 X 2 = $1,890
TOTAL Other Costs (No Profit & Risk added) = $15,750

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria **Date: July 07, 2008**

logging conditions

combination#: 1	Douglas - Fir	38.00%	
	Western Hemlock / Fir	38.00%	
	Sitka Spruce	38.00%	
	Red Cedar	38.00%	
	Alder (Red)	38.00%	
yarding distance:	Medium (800 ft)	**downhill yarding:**	No
logging system:	Cable: Large Tower >=70	**Process**:	Stroke Delimber
tree size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
loads / day:	8.0	**bd. ft / load:**	4,000
cost / mbf:	$119.58		
machines:	Log Loader (A) Stroke Delimber (A) Tower Yarder (Large)		

combination#: 2	Douglas - Fir	35.00%	
	Western Hemlock / Fir	35.00%	
	Sitka Spruce	35.00%	
	Red Cedar	35.00%	
	Alder (Red)	35.00%	
yarding distance:	Short (400 ft)	**downhill yarding:**	No
logging system:	Shovel	**Process**:	Manual Delimbing
tree size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
loads / day:	10.0	**bd. ft / load:**	4,000
cost / mbf:	$62.62		
machines:	Shovel Logger		

combination#: 3	Douglas - Fir	27.00%	
	Western Hemlock / Fir	27.00%	
	Sitka Spruce	27.00%	
	Red Cedar	27.00%	
	Alder (Red)	27.00%	
yarding distance:	Medium (800 ft)	**downhill yarding:**	No
logging system:	Cable: Medium Tower >40 - <70	**Process**:	Manual Delimbing
tree size:	Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF		
loads / day:	8.0	**bd. ft / load:**	4,000
cost / mbf:	$108.13		
machines:	Log Loader (A) Tower Yarder (Medium)		

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria

Date: July 07, 2008

logging costs

Operating Seasons:	3.00	**Profit Risk:**	14.00%
Project Costs:	$557,985.00	**Other Costs (P/R):**	$15,723.00
Slash Disposal:	$0.00	**Other Costs:**	$15,750.00

Miles of Road

Road Maintenance: $3.13

Dirt	Rock (Contractor)	Rock (State)	Paved
0.0	0.0	0.0	0.0

Hauling Costs

Species	$ / MBF	Trips/Day	MBF / Load
Douglas - Fir	$0.00	3.0	4.0
Western Hemlock / Fir	$0.00	2.0	3.8
Sitka Spruce	$0.00	1.0	4.5
Red Cedar	$0.00	2.0	3.8
Alder (Red)	$0.00	2.0	3.3

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: Astoria **Date:** July 07, 2008

logging costs breakdown

Logging	Road Maint	Fire Protect	Hauling	Other P/R appl	Profit & Risk	Slash Disposal	Scaling	Other	Total
Douglas - Fir									
$96.55	$3.22	$1.26	$52.71	$1.51	$21.74	$0.00	$5.00	$1.51	$183.50
Western Hemlock / Fir									
$96.55	$3.26	$1.26	$84.02	$1.51	$26.12	$0.00	$5.00	$1.51	$219.23
Sitka Spruce									
$96.55	$3.26	$1.26	$141.91	$1.51	$34.23	$0.00	$5.00	$1.51	$285.23
Red Cedar									
$96.55	$3.26	$1.26	$84.02	$1.51	$26.12	$0.00	$5.00	$1.51	$219.23
Alder (Red)									
$96.55	$3.29	$1.26	$97.69	$1.51	$28.04	$0.00	$5.00	$1.51	$234.85

Specie	Amortization	Pond Value	Stumpage	Amortized
Douglas - Fir	$0.00	$465.34	$281.84	$0.00
Western Hemlock / Fir	$0.00	$336.45	$117.22	$0.00
Sitka Spruce	$0.00	$371.81	$86.58	$0.00
Red Cedar	$0.00	$1,075.00	$855.77	$0.00
Alder (Red)	$0.00	$650.00	$415.15	$0.00

"STEWARDSHIP IN FORESTRY"

Timber Sale Appraisal
Rising Tide
Sale 341-09-25

District: **Astoria** **Date:** **July 07, 2008**

summary

Amortized

Specie	MBF	Value	Total
Douglas - Fir	0	$0.00	$0.00
Western Hemlock / Fir	0	$0.00	$0.00
Sitka Spruce	0	$0.00	$0.00
Red Cedar	0	$0.00	$0.00
Alder (Red)	0	$0.00	$0.00

Unamortized

Specie	MBF	Value	Total
Douglas - Fir	5,511	$281.84	$1,553,220.24
Western Hemlock / Fir	3,944	$117.22	$462,315.68
Sitka Spruce	160	$86.58	$13,852.80
Red Cedar	1	$855.77	$855.77
Alder (Red)	794	$415.15	$329,629.10

Gross Timber Sale Value

Recovery: $2,359,873.59

Prepared by: Ty Williams **Phone:** 503-325-5451

SUMMARY OF ALL PROJECT COSTS

SALE NAME: Rising Tide

NEW CONSTRUCTION:

	Road segment	Length/Sta		Cost	
Project No. 1					
Dirt Roads	1A-1B & 1C-1D.	24.25		$8,479	
Surfaced Roads	A-B, 2A-2B, 3A-3B,	37.0		$33,785	
	4A-4B, 4C-4D, 4E-4F,				
	4G-4H, and 4I-4J.				
Project No. 2	K-L	5.1		$10,075	
Project No. 3	C-D, E-F, G-H, & I-J.	69.5		$108,875	
	TOTALS	135.85	2.6 mi.		$161,214

ROAD IMPROVEMENT:

	Road segment	Length/Sta		Cost	
Project No. 1	I1-I2, I2-I3, I5-I6,	381.89		$108,992	
	I7-I8, I9A-I9, I9-I10				
	I17-I18, & I19-I20.				
Project No. 3	I9-I11, I12-I13, I14-I15,	74.5		$58,410	
	& I15-I16.				
	TOTALS	456.34	8.6 mi.		$167,402

SPECIAL PROJECTS:

Project No. 4	Tidewater Loop Quarry Development and Rock Crushing	$122,250
Project No. 5	Road Vacating	$52,658
Project No. 6	Roadside Brushing	$28,191
Project No. 7	Stream Enhancement	$5,432
Project Work	Road Maintenance	$7,608

MOVE IN:

Equipment	Cost	
Dozer (D8) x 3	$3,600	
Dump Trucks (12 cy x 4)	$556	
Dump Trucks (20 cy x 3)	$492	
F E Loader (C966)	$664	
Grader (14G)	$664	
Vibratory Roller	$664	
Vibratory Grid Roller	$664	
Air Track Drill	$138	
Brush Cutter	$274	
Rubber Tire Skidder (C518)	$612	
Water Truck (2,500 gallon)	$162	
Excavator (C330) x 3	$3,600	
TOTAL		$13,230

GRAND TOTAL **$557,985**

Compiled By: J. Long Date: 05/01/2008

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Project No. 1 **SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rising Tide (Field Design) (Dirt) **NEW CONSTRUCTION:** 24.25 **STATIONS** 0.46 **MILES**
ROAD: 1A to 1B (18.0) and 1C to 1D (6.25) **IMPROVEMENT:** **STATIONS** 0.00 **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	2.2	x	$1,142.00	=	$2,512.40

SUB TOTAL FOR CLEARING & GRUBBING $2,512

EXCAVATION

Material	Sta/amount	x	Rate	=	Cost
Common (Drift Earth up to 200') $$/sta.	24.25	x	$162.00	=	$3,928.50
Landing Construction $$/landing	4	x	$332.00	=	$1,328.00
Sta. 16+25 (1A to 1B), 1B,					
Sta. 3+40 (1C to 1D), 1D.					

SUB TOTAL FOR EXCAVATION $5,257

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Grade 14' outslope	24.25	$15.67	$380.00
	Waterbar and block	24.25	$13.63	$330.53

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $711

Subtotal **$8,479**

Project No. 1 **SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rising Tide (Field Design) (Surfaced) **NEW CONSTRUCTION:** 8.75 **STATIONS** 0.17 **MILES**
ROAD: 3A-3B (1.7), 3C, 4C-4D (1.6), 4E to 4F (1.75), 4G to 4H (2.3), and 4I to 4J (1.4) **IMPROVEMENT:** **STATIONS** 0.00 **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter Outside of R/W	0.8	x	$1,142.00	=	$913.60

SUB TOTAL FOR CLEARING & GRUBBING $914

EXCAVATION

Material	Sta/amount	x	Rate	=	Cost
Common (Drift Earth up to 200') $$/sta.	8.75	x	$162.00	=	$1,417.50
Landing Construction $$/landing	5	x	$332.00	=	$1,660.00
3B, 3C, 4D, 4F, and 4H					

SUB TOTAL FOR EXCAVATION $3,078

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
				$0.00			
				$0.00			
				$0.00			

Other/miscellaneous:	Description	Quantity hrs	Rate	Cost

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $0

Subtotal **$3,991**

Project No. 1

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide (Designed Roads)
ROADS: A to B (3.7), 2A to 2B (.75), and 4A to 4B (23.8)

NEW CONSTRUCTION: 28.25 **STATIONS** 0.54 **MILES**
IMPROVEMENT: **STATIONS** 0.00 **MILES**

CLEARING & GRUBBING

Method	Acres/amount		Rate	=	Cost
Scatter Outside of R/W	1.1	x	$1,142.00	=	$1,256.20

SUB TOTAL FOR CLEARING & GRUBBING $1,256

EXCAVATION

Material	Cy/amount/station		Rate	=	Cost
Common drift excavation $$/cy	1,059	x	$1.50	=	$1,588.50
Embankment comapaction $$/cy	1,279	x	$0.60	=	$767.40
Truck End Haul	856	x	$3.40	=	$2,910.40
Cut Slope Rounding	9	x	$37.00	=	$333.00
Wast material compaction	856	x	$0.30	=	$256.80
Road prism drilling and shooting (2A to 2B)	500	x	$5.80	=	$2,900.00
Landing Construction 2B, Sta 4+30 (4A-4B), and Sta 9+25 (4A-4B),	3	x	$332.00	=	$996.00

SUB TOTAL FOR EXCAVATION $9,752

CULVERT MATERIALS AND INSTALLATION

	Location	Dia/type	Lineal ft.	Rate	Cost	No. bands	Rate	Cost
					$0.00			
					$0.00			
					$0.00			
					$0.00			
					$0.00			
					$0.00			
					$0.00			
					$0.00			

		Description	Quantity	Rate	Cost
Other/miscellaneous:	Install Gate at Point B:	Excavator	4	$138.00	$552.00
		Labor	4	$37.00	$148.00
Culvert stakes & markers:					$0.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $700

Subtotal **$11,708**

Project No. 1 New Road Construction

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: A-B (3.7), 1A-1B (18.0), 1C-1D (6.25), 2A-2B (.75), 3A-3B (1.7), 4A-4B (23.8), 4C-4D (1.6), 4E-4F (1.75), 4G-4H (2.3), 4I-4J (1.4)

NEW CONSTRUCTION: 61.25 STATIONS 1.16 MILES
IMPROVEMENT: 0.00 STATIONS 0.00 MILES

SURFACING

Subgrade prep:

Description	Stations/ amount	x	Rate/ sta/amt	Cost
Grade, Shape and Ditch 16'	37.00	x	$21.20	$784.40
Subgrade Compaction	37.00	x	$17.24	$637.88

ROAD SEGMENT	A-B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	A-B Volume (CY) per		0+00 to 3+70 Number of					
Base Rock	4"-0" Crushed	A-B	10	station	54	stations	3.70	200	$3.51	$701	
Traction Rock	1 1/2"-0" Stockpile	0+00 to 3+70	2	station	11	stations	3.70	41	$3.51	$143	
Turnout	1 1/2"-0" Stockpile		2	turnout	10	turnouts	1	10	$3.51	$35	
Turnout	4"-0" Crushed		10	turnout	24	turnouts	1	24	$3.51	$84	
Total Rock for Road Segment:			A-B					275			$963

ROAD SEGMENT	2A-2B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	2A-2B Volume (CY) per		0+00 to 0+75 Number of					
Base Rock	6"-0" Pit-run	2A-2B	8	station	43	stations	0.50	22	$3.51	$75	
Junction	1"-0" Stockpile	2A	3	junction	24	junctions	1	24	$3.63	$87	
Landing	6"-0" Pit-run	2B	N/A	landing	80	landings	1	50	$3.51	$176	
Total Rock for Road Segment:			2A-2B					96			$87

ROAD SEGMENT	3A-3B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	3A-3B Volume (CY) per		0+00 to 1+70 Number of					
Base Rock	6"-0" Pit-run	3A-3B	12	station	65	stations	1.70	111	$4.19	$463	
Turn-Around	6"-0" Pit-run		12	TA	24	TA's	1	24	$4.19	$101	
Landing	6"-0" Pit-run	3B	N/A	landing	80	landings	1	80	$4.19	$335	
Total Rock for Road Segment:			3A-3B					215			$899

ROAD SEGMENT	4A-4B			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	4A-4B Volume (CY) per		0+00 to 23+80 Number of					
Base Rock	4"-0" Crushed	4A-4B	10	station	54	stations	23.80	1,285	$3.51	$4,511	
Traction Rock	1 1/2"-0" Stockpile	0+00 to 23+80	2	station	13	stations	23.80	309	$3.51	$1,086	
Turnouts	1 1/2"-0" Stockpile		2	turnout	10	turnouts	3	30	$3.51	$105	
Turnouts	4"-0" Crushed		10	turnout	24	turnouts	3	72	$3.51	$253	
Turn-Arounds	4"-0" Crushed		10	TA	24	TA's	1	24	$3.51	$84	
Junction	4"-0" Crushed	4B, 4C, 4E, 4G, 4I	10	junction	24	junctions	5	120	$3.51	$421	
Landing	6"-0" Pit-run	4+30, 9+25	N/A	landing	50	landings	2	100	$4.19	$419	
Total Rock for Road Segment:			4A-4B					1,941			$6,880

ROAD SEGMENT	4C-4D			POINT TO POINT	4C-4D	Sta. to Sta.	0+00 to 1+60	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	4C-4D	12	station	65	stations	1.60	104	$4.19	$436	
Landing	6"-0" Pit-run	4D	N/A	landing	50	landings	1	50	$4.19	$210	
Total Rock for Road Segment:			4C-4D					154			$645
ROAD SEGMENT	4E-4F			POINT TO POINT	4E-4F	Sta. to Sta.	0+00 to 1+75	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	4E to 4F	12	station	65	stations	1.75	114	$4.19	$477	
Landing	6"-0" Pit-run	2F	N/A	landing	50	landings	1	50	$4.19	$210	
Total Rock for Road Segment:			4E-4F					164			$686
ROAD SEGMENT	4G-4H			POINT TO POINT	4G-4H	Sta. to Sta.	0+00 to 2+30	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	4G-4H	12	station	65	stations	2.30	150	$4.19	$626	
Turn-Arounds	6"-0" Pit-run		12	TA	24	TA's	1	24	$4.19	$101	
Landing	6"-0" Pit-run	2F	N/A	landing	80	landings	1	80	$4.19	$335	
Total Rock for Road Segment:			4G-4H					254			$1,062
ROAD SEGMENT	4I-4J			POINT TO POINT	4I-4J	Sta. to Sta.	0+00 to 1+40	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of					
Base Rock	6"-0" Pit-run	4I-4J	12	station	65	stations	1.40	91	$4.19	$381	
Total Rock for Road Segment:			4I-4J					91			$381

Processing:	Description	No.sta	Rate/sta	Cost
	Water, Process & Compact Crushed Rock:(2 lifts)	27.50	$48.23	$1,326
	Water, Process & Compact Crushed Rock:(2nd lift)	27.50	$48.23	$1,326
	Process traction rock	27.50	$48.23	$1,326
	Compact Pit run Rock	9.5	$50.55	$480
SUB TOTAL FOR SURFACING				**$17,485**

SPECIAL PROJECTS

Description	Cost
Seed and Mulch Waste Area 0.3acresx$1000	$300
Straw 1acresX$10/bale	$300

SUB TOTAL FOR SPECIAL PROJECTS $600

GRAND TOTAL **$33,785**

Compiled By: Jasen McCoy Date: 03/31/2008

Project No. 2

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: Tidewater Road
POINTS: K to L

NEW CONSTRUCTION: 5.10 **STATIONS** 0.10 **MILES**
IMPROVEMENT: **STATIONS** **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside of R/W	0.53	x	$1,142	=	$605.26
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $605

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Drift Common Excavation to fills	418	x	$1.50	=	$627.00
Drift Common Excavation to waste area	129	x	$1.50	=	$193.50
24"-6" free draining fill material	206	x	$9.16	=	$1,886.96
Embankment Compaction	624	x	$0.60	=	$374.40
Sidecast Pullback old road (sta)	1.20	x	$309	=	$370.80
15' ditch at outlet of culvert @ sta. 1+03 (hrs	0.50	x	$138	=	$69.00
Aggregate Salvage (1.50 sta)	115	x	$1.90	=	$218.50
Utilize salvaged aggregate as Sub Reinf.	115	x	$1.82	=	$209.30
Geotextile 6 1/2 oz woven x 16' wide	180	x	$1.50	=	$270.00
Place fill armor and free drain material (hrs)	4	x	$138	=	$552.00
		x		=	

SUB TOTAL FOR EXCAVATION $4,771

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
1+03	18	40	$17.64	$705.60					
2+60	18	40	$17.64	$705.60					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	2 1/2" x 6' Carsonite post (Installed)	2	$18.00	$36.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $1,447

Subtotal of Clearing, Exc., Culv. ***$6,824***

SURFACING

Subgrade prep:

Description	Stations/ amount	x	Rate/ sta/amt	Cost
Grade, Shape and Ditch 16'	5.10	x	$21.20	$108.12
Subgrade Compaction	5.10	x	$17.24	$87.92

ROAD SEGMENT	K to L			POINT TO POINT		Sta. to Sta.				
				K to L		0+00 to 5+10				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock	4"-0" Stockpile		10	station	54	stations	5.10	275	$3.14	$865
Turnouts	4"-0" Stockpile		10	TO	24	TO's	1	24	$3.14	$75
Curve Widening	4"-0" Stockpile		10	curve	n/a	curves	5	30	$3.14	$94
Surface Rock	1"-0" Stockpile		4	station	22	stations	5	112	$3.14	$352
Turnouts	1"-0" Stockpile		4	TO	10	TO's	1	10	$3.14	$31
Curve Widening	1"-0" Stockpile		4	curve	n/a	curves	5	15	$3.14	$47
Free Draining Rock	24"-6" Riprap							206	*	*	
Fill Armor	24"-6" Riprap							60	$9.16	$550	
Dissipator Rock	24"-6" Riprap							10	$9.16	$92	
Total Rock for Road Segment:			K to L					743			$2,106

ROAD SEGMENT	0			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Subgrade Leveling			N/A							$0	
Traction Rock			N/A	station		stations		0		$0	
Culvert Bedding/Backfill			N/A	culvert		culverts		0		$0	
Turnouts			N/A	TO		TO's		0		$0	
Trurnarounds			N/A	TA		TA's		0		$0	
Junctions			N/A	junction		junctions		0		$0	
Total Rock for Road Segment:			0					0			$0

ROAD SEGMENT	0			POINT TO POINT		Sta. to Sta.				
Application	Rock Size and Type	Location	Depth of Rock (inches)	Volume (CY) per		Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Base Rock			5	station		stations		0		$0	
Junctions			N/A	junction		junctions		0		$0	
Culvert Bedding/Backfill			N/A	culvert		culverts		0		$0	
Landings			N/A	Landing		Landings		0		$0	
Total Rock for Road Segment:			0					0			$0

Processing:

Description	# lifts	No.sta	Rate/sta	Cost
Water, Process & Compact, 4"-0" Crushed (two lifts):	2	5.10	$48.23	$492
Water, Process & Compact, 1"-0" Crushed (one lift):	1	5.10	$48.23	$246

Note *: 206 cy of 24"-6" is free draining rock costed under excavation

	24"-6"	4"-0"	1"-0"			Total	
SUB TOTAL FOR SURFACING	276	329	137			743	**$3,040**

SPECIAL PROJECTS

Description	Cost
Seeding and Mulching	$211.00

SUB TOTAL FOR SPECIAL PROJECTS $211

Subtotal of Surfacing & Spec. Proj. *$3,251*

Subtotal of Clearing, Exc.,Culv. *$6,824*

GRAND TOTAL **$10,075**

Compiled By: d.mellison Date: 03/31/08

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: Tidewater Loop (New Const.)
POINTS: C-D (Project No. 3)

NEW CONSTRUCTION: 14.30 **STATIONS** 0.27 **MILES**
IMPROVEMENT: **STATIONS** **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside right of way ($/ac)	1.40	x	$1,142.00	=	$1,598.80
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $1,599

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Common Drift to Fills < 50% slopes ($/cy)	1,710	x	$1.50	=	$2,565.00
Common Haul to Fills ($/cy)	170	x	$1.60	=	$272.00
Embankment Compaction ($/cy)	1,880	x	$0.60	=	$1,128.00
Cut slope rounding ($/sta)	6.5	x	$37.00	=	$240.50
Develop Stream Channel ($/hr)	1	x	$138.00	=	$138.00
-1 hour large excavator		x		=	
		x		=	
End-haul to waste area ($/cy)	680.00	x	$1.60	=	$1,088.00
Waste material compaction ($/cy)	680.00	x	$0.30	=	$204.00
		x		=	
Waterbar across spur road (sta 14+10)	1	x	$30.00	=	$30.00

SUB TOTAL FOR EXCAVATION $5,666

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft	Rate	Cost	Location	Dia/type	Lineal ft	Rate	Cost
4+82	24" CPP	40	$24.64	$985.60					
9+20	72" ALCSP	55	**	$9,622.00					
	12 gauge								
11+00	18" CPP	40	$17.64	$705.60					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	Install 6" X 2.5" White fiberglass post	2	$18.00	$36.00

** See 72" CMP Installation Cost Sheet

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $11,349

Subtotal of Clearing, Exc., Culv. ***$18,614***

Point C to D
Stream Crossing - 6' diameter pipe
Tidewater Loop Road

Sale Name: Rising Tide Date: 3/13/08 S. Bushnell

Construction Phase	QTY	Equipment Hours									Labor	Culvert		Erosion Control		Total
	BCY	C330	Hammer	Dmp Tr	Gdr 14G	Cat 966	Roller	Buggy	Pump	Tamper	hr	Ft	$/ft.	Acres	$/Acre	$
Unload and move cmp to site		1									1					
Excavate Culvert Bed	37	1	1													
De-watering (w/pump) (24hrs/day)									10		4					
Build culvert bed (crushed rock) **	13	1		0.5						1	1					
Place culvert \ tamp flanks (c.rock) **	20	1.5		0.5						1.5	1.5					
Backfill culvert w / crushed rock **	15	1		0.5						1	1					
Remaining Backfill *										1	1					
Fill Compaction							2									
Remove Waste Material	37	0.5		0.5												
Seed culvert w\onsite cobble																
Embedded Riprap (Dissipator)	3	0.5														
Place Fill Armor/ Free Draining Fill	463	10		15												
Total Hours		16.5	1	17	0	0	2	0	10	4.5	9.5					
Equipment Rates:		$138	$15		$90	$74	$72	$20	$9	$9	$37					
Sub total Hourly rates:		**$2,277**	**$15**	***	**$0**	**$0**	**$144**	**$0**	**$90**	**$41**	**$352**					**$2,918**
72" Aluminized Steel Culvert (12 ga)												55	$109			**$5,993**
72" x 12" band												2	$86			**$172**
Step Beveling (both ends)												2	$116			**$233**
Neoprene Gasket 12" wide												2	$50			**$100**
Sub total Culvert Material Cost:																**$6,497**
Sub total Seeding and Mulching:																
Project site & Waste area														0.200	$536	**$107**
Straw Bales (10 bales @$10/bale)																**$100**

Total Installation Cost: **$9,622**

Notes:
1) Cost to build road segment C to D is on a Summary of Construction Costs sheet.
2) * Remaining backfill composed of drifted material from surrounding road construction. Costed for on Summary of Construction.
3) Mobilization costs are in the Move-In portion of the SUMMARY OF ALL PROJECT COSTS.
4) ** Crushed rock source is Tidewater Loop Quarry
5) Riprap comes from the Old Tidewater Loop Quarry.
6) *** All rock haul is costed for on haul sheets.

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: Tidewater Loop
POINTS: E to F

NEW CONSTRUCTION: 4.33 **STATIONS** 0.08
IMPROVEMENT: **STATIONS**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside right of way	0.51	x	$1,142.00	=	$582.42
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $582

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Common drift to fills > 50% slopes ($/cy)	419	x	$1.50	=	$628.50
Common haul to fills ($/cy)	54	x	$3.40	=	$183.60
Embankment compaction ($/cy)	473	x	$0.60	=	$283.80
Cut slope rounding 0+60 to 2+80 ($/sta)	2.2	x	$37.00	=	$81.40
		x		=	
End-haul to waste area ($/cy)	48	x	$3.40	=	$163.20
Waste material compaction ($/cy)	48	x	$0.30	=	$14.40
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION $1,355

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft	Rate	Cost	Location	Dia/type	Lineal ft	Rate	Cost
2+80	18" CPP	32	$17.64	$564.48					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	Install 6" X 2.5" White fiberglass post	1	$18.00	$18.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $582

Subtotal of Clearing, Exc., Culv. ***$2,520***

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: G to H (12.2 stations)
POINTS:

NEW CONSTRUCTION: 12.20 **STATIONS** 0.23 **MILES**
IMPROVEMENT: **STATIONS** **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside of right of way	1.54	x	$1,142.00	=	$1,758.68
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $1,759

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Common drift <50% slopes ($/cy)	2,272.00	x	$1.50	=	$3,408.00
End-haul excavation ($/cy)	643.00	x	$3.40	=	$2,186.20
Embankment compaction ($/cy)	2,384.00	x	$0.60	=	$1,430.40
Cut slope rounding ($/sta)	7.50	x	$37.00	=	$277.50
Waste material compaction ($/cy)	560.00	x	$0.30	=	$168.00
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION $7,470

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
4+65	18" CPP	34	$17.64	$599.76					
7+20	18" CPP	40	$17.64	$705.60					
9+20	48" ALCSP	90	**	$10,686.00					
	12 gauge								

	Description	Quantity	Rate	Cost
Other/miscellaneous:	**See 48" CMP Installation sheet			
Culvert stakes & markers:	Install 6" X 2.5" White fiberglass post	2	$18.00	$36.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $12,027

Subtotal of Clearing, Exc., Culv. ***$21,256***

9+20 Stream Crossing Cost
Project No. 1
Location: G to H, Station 9+20

Cullen Bangs
03/14/2008

Materials	Quantity		$	Total	
48" x 90' ALCSP, 12 gauge	90	ft	$ 61.05	$5,495	
Step Bevel Inlet	1		$ 75.00	$75	
Culvert Bands	2		$ 60.00	$120	
Neoprene Gasket	2		$ 26.99	$54	
Pipe delivery	1		$ 250.00	$250	
24"-6" Riprap - Fill Armor and free draining fill	920	cy		**	
4"-0" Crushed Rock for Road		cy			
1 1/2"-0" Crushed Rock for Bedding/Backfill	100	cy		**	
1 1/2"-0" Crushed Rock for Road		cy		**	
10 oz. non-woven Fabric, 8' wide	420	ft	$2.22	$932	**$6,926**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	20	$2,760	
	Stand-By	1		$82.80	1	$83	
Dump Truck							
	Operating					$0	
	Stand-By					$0	
Vibratory Roller							
	Operating	1		$72.00	7	$504	
						$0	
Front-End Loader, Medium							
	Operating					$0	
	Stand-By					$0	
Road Grader, Large							
	Operating					$0	
	Stand-By					$0	
Hand Held Tamper							
	Operating	1		$9.00	6	$54	
	Stand-By					$0	
Water Pump							
	Operating	1		$9.00	5	$45	
Laborer		2		$37.00	8.5	$315	**$3,760**

** Cost included in summary of construction
Equipment/Labor Costs:
For culvert installation, construction of free draining fill and fill armoring
Costs for construction of remaining fill included in summary of construction

Project Total	**$10,686**

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide
ROAD: Tidewater Loop
POINTS: I to J (38.67 stations)

NEW CONSTRUCTION: 38.67 **STATIONS** 0.73 **MILES**
IMPROVEMENT: **STATIONS** **MILES**

CLEARING & GRUBBING

Method	Acres/amount	x	Rate	=	Cost
Scatter outside right of way ($/ac)	4.53	x	$1,142.00	=	$5,173.26
		x		=	
		x		=	

SUB TOTAL FOR CLEARING & GRUBBING $5,173

EXCAVATION

Material	Cy/amount	x	Rate	=	Cost
Common Drift to Fills < 50% slopes ($/cy)	2,568	x	$1.50	=	$3,852.00
Common Haul to Fills ($/cy)	2,104	x	$3.40	=	$7,153.60
Embankment Compaction ($/cy)	4,672.00	x	$0.60	=	$2,803.20
Cut slope rounding ($/sta)	12.00	x	$37.00	=	$444.00
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	
		x		=	

SUB TOTAL FOR EXCAVATION $14,253

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
0+70	18" CPP	40	$17.64	$705.60					
8+70	18" CPP	34	$17.64	$599.76					
12+65	18" CPP	34	$17.64	$599.76					
33+25	18" CPP	34	$17.64	$599.76					
36+65	18" CPP	50	$17.64	$882.00					

	Description	Quantity	Rate	Cost
Other/miscellaneous:	Dissipator construction (0+70, 12+65)	1.00	$138.00	$138.00
Culvert stakes & markers:	Install 6" X 2.5" White fiberglass post	5	$18.00	$90.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $3,615

Subtotal of Clearing, Exc., Culv. ***$23,041***

Project No. 3 New Construction	Subgrade prep:	Description	Stations/ amount	x	Rate/ sta/amt	Cost
		Grade, Shape and Ditch 16'	69.50	x	$21.20	$1,473.40
Surfacing C-D, E-F, G-H, & I-J		Subgrade Compaction	69.50	x	$17.24	$1,198.18
		Install 6.5 oz. X 16' wide, woven geotextile fabric (3+80 to 13+25 C to D) ($/	950.00	x	$1.50	$1,425.00
		Install 10 oz. non-woven fabric (free draining fill at 9+20 C to D) ($/ft)	584.00	x	$2.22	$1,296.48

ROAD SEGMENT	C to D			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	C to D Volume (CY) per		0+00 to 14+30 Number of					
Base Rock	4"-0" Crushed	0+00 to 14+30	9	station	49	stations	14.3	701	$3.51	$2,459	
Fill Widening	4"-0" Crushed	3+00 to 4+00	9	fill	7	fills	1	7	$3.51	$25	
Fill Widening	4"-0" Crushed	9+50 to 10+50	9	fill	14	fills	1	14	$3.51	$49	
Turnout	4"-0" Crushed	0+25 and 7+50	9	TO	19	Tos	2	38	$3.51	$133	
Curve Widening	4"-0" Crushed	0+24 to 1+48	9	curve	24	curves	1	24	$3.51	$84	
Curve Widening	4"-0" Crushed	3+98 to 5+62	9	curve	10	curves	1	10	$3.51	$35	
Curve Widening	4"-0" Crushed	9+65 to 11+06	9	curve	28	curves	1	28	$3.51	$98	
Surfacing	1 1/2"-0" Crushed	0+00 to 14+30	4	station	27	stations	14.3	386	$3.51	$1,355	
Fill Widening	1 1/2"-0" Crushed	3+00 to 4+00	4	fill	3	fills	1	3	$3.51	$11	
Fill Widening	1 1/2"-0" Crushed	9+50 to 10+50	4	fill	6	fills	1	6	$3.51	$21	
Turnout	1 1/2"-0" Crushed	0+75 and 7+50	4	TO	10	Tos	2	20	$3.51	$70	
Curve Widening	1 1/2"-0" Crushed	0+24 to 1+48	4	curve	12	curves	1	12	$3.51	$42	
Curve Widening	1 1/2"-0" Crushed	3+98 to 5+62	4	curve	5	curves	1	5	$3.51	$18	
Curve Widening	1 1/2"-0" Crushed	9+65 to 11+06	4	curve	14	curves	1	14	$3.51	$49	
Culvert bedding and backfill	1 1/2"-0" Stockpile	9+65	N/A	fill	62	fills	1	62	$3.51	$218	
Fill Armor	24"-6" Riprap	9+65	N/A	fill	556	fills	1	556	$3.74	$2,079	
										$0	
Total Rock for Road Segment:			C to D					1,886			$6,747

ROAD SEGMENT	E to F			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	E to F Volume (CY) per		0+00 to 4+33 Number of					
Base Rock	4"-0" Crushed	0+00 to 4+33	9	station	49	stations	4.33	212	$3.51	$745	
Turnout	4"-0" Crushed	1+60	9	turnout	19	turnouts	1	19	$3.51	$67	
Junctions	4"-0" Crushed		9	junction	10	junctions	2	20	$3.51		
Surfacing	1 1/2"-0" Stockpile	0+00 to 4+33	4	station	22	stations	4.33	95	$3.51	$334	
Turnout	1 1/2"-0" Stockpile	1+60	4	turnout	10	turnouts	1	10	$3.51	$35	
Junctions	1 1/2"-0" Stockpile		4	junction	10	junctions	2	20	$3.51	$70	
Total Rock for Road Segment:			E to F					376			$1,251

ROAD SEGMENT	G to H			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	G to H Volume (CY) per		0+00 to 12+20 Number of					
Base Rock	4"-0" Crushed	0+00 to 12+20	9	station	49	stations	12.20	598	$3.51	$2,098	
Fill Widening	4"-0" Crushed		9	fill	14	fills	1.00	14	$3.51	$49	
Curve Widening	4"-0" Crushed		9			curves	6	115	$3.51	$404	
Thru-cut Widening	4"-0" Crushed		9	thru-cut	14	thru-cut	1	14	$3.51	$49	
Turnouts	4"-0" Crushed	2+00, 6+00, 11+00	9	turnout	22	turnouts	3	66	$3.51	$232	
Junctions	4"-0" Crushed		9	junction		junctions	2	30	$3.51	$105	
Surfacing	1 1/2"-0" Crushed	0+00 to 12+20	4	station	22	stations	12.20	268	$3.51	$942	
Fill Widening	1 1/2"-0" Crushed		4	fill	5	fills	1	5	$3.51	$18	
Curve Widening	1 1/2"-0" Crushed		4			curves	6	51	$3.51	$179	
Thru-cut Widening	1 1/2"-0" Crushed		4	thru-cut	5	thru-cut	1	5	$3.51	$18	
Turnouts	1 1/2"-0" Crushed		4	turnout	10	turnouts	3	30	$3.51	$105	
Junctions	1 1/2"-0" Crushed		4			junctions	2	30	$3.51	$105	
Culvert Bedding/Backfill	1 1/2"-0" Stockpile	9+20				culvert	1	100	$3.51	$351	
Fill Armor/Free Draining	24"-6" Riprap	9+20		fill	920	fills	1	920	$3.74	$3,441	
Total Rock for Road Segment:			G to H					2,246			$8,096

ROAD SEGMENT	I to J			POINT TO POINT		Sta. to Sta.		TOTAL	Rate/	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I to J Volume (CY) per		0+00 to 38+67 Number of		VOLUME (CY)	Sta./ amt.	
Base Rock	4"-0" Crushed	0+00 to 38+67	9	station	49	stations	38.67	1,895	$3.51	$6,651
Turnouts	4"-0" Crushed	2+30, 11+35, 14+25, 18+40, 23+70, 28+50, 31+60, 36+10	9	turnout	22	turnout	8	176	$3.51	$618
Curve Widening	4"-0" Crushed	-	9	curve	-	curves	8	192	$3.51	$674
Fill Widening	4"-0" Crushed	-	9	fill	-	fills	-	34	$3.51	$119
Junctions	4"-0" Crushed	-	9	junction	10	junctions	2	20	$3.51	$70
Surfacing	1 1/2"-0" Stockpile	-	4	station	22	stations	38.67	851	$3.51	$2,986
Turnouts	1 1/2"-0" Stockpile	2+30, 11+35, 14+25, 18+40, 23+70, 28+50, 31+60, 36+10	4	turnout	10	turnout	8	80	$3.51	$281
Curve Widening	1 1/2"-0" Stockpile	-	4	curve	-	curves	8	86	$3.51	$302
Fill Widening	1 1/2"-0" Stockpile	-	4	fill	-	fills	-	16	$3.51	$56
Junctions	1 1/2"-0" Stockpile	-	4	junction	10	junctions	2	20	$3.51	$70
Dissipator	24"-6" Riprap							20	$3.74	$75
Total Rock for Road Segment:			I to J					3,390			$11,902

Processing:

Description	No.sta	Rate/sta	Cost
Water, Process & Compact 4"-0" Base First Lift:	69.50	$48.23	$3,352
Water, Process & Compact 4"-0" Base Second Lift	69.50	$48.23	$3,352
Water, Process & Compact 1 1/2"-0" Surfacing Rock	69.50	$48.23	$3,352

	24"-6" rr	6"-0"pr	4"-0"	1 1/2"-0"		Total		
SUB TOTAL FOR SURFACING	1,496		4,227	2,176		7,898		**$43,445**

SPECIAL PROJECTS

Description	Cost

SUB TOTAL FOR SPECIAL PROJECTS $0

Subtotal of Surfacing & Spec. Proj. *$43,445*

Subtotal of Clearing, Exc., Culv. *$65,430*

GRAND TOTAL **$108,875**

Compiled By: J. Long, C. Bangs, S. Bushnell, D. Mellison, J. McCoy Date: 03/31/08

Project No. 1 Road Improvement **SUMMARY OF CONSTRUCTION COSTS**

SALE NAME: Rising Tide **NEW CONSTRUCTION:** 0.00 **STATIONS** 0.00 **MILES**

ROAD: I1-I2 (70+22), I2-I3 (59+92), I5-I6 (21+10), I7-I8 (3+95), I9A-I9 (3+00), I9-I10 (50+00), I17-I18 (118+80), I19-I20 (60+00) **IMPROVEMENT:** 381.89 **STATIONS** 7.23 **MILES**

SURFACING Subgrade prep:	Description	Stations/ amount	x	Rate/ sta/amt	Cost
	Grade, Shape and Ditch	381.89	x	$21.20	$8,096.07
	Surfacing Rock Processing and Compaction (Subgrade Leveling)	381.89	x	$17.24	$6,583.78

ROAD SEGMENT	I1 to I2 Tidewater Road			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I1 to I2 Tidewater Road Volume (CY) per		0+00 to 33+37, 38+47 to 70+22 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1"-0" Stockpile			station		stations		100	$3.14	$314	
Total Rock for Road Segment:		I1 to I2 Tidewater Road						100			$314
ROAD SEGMENT	I2 to I3 Tidewater Road			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I2 to I3 Tidewater Road Volume (CY) per		0+00 to 59+92 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1"-0" Stockpile	I2 to I3	N/A					100	$3.14	$314	
Surface Rock	1 1/2"-0" Stockpile	I2 to I3	3	station	16	stations	18.92	303	$3.51	$1,063	
Culv. Bedding/Backfill	1 1/2"-0" Stockpile	4+97, 9+88, 15+63	N/A	culvert	20	culverts	3.00	60	$3.51	$211	
Turnouts	1 1/2"-0" Stockpile	I2 to I3	3	turnout	7	turnouts	3.00	21	$3.51	$74	
Removed Culv. Backfill	1 1/2"-0" Stockpile							24	$3.51	$84	
Base Rock	4"-0" Crushed		6	station	33	stations	19	624	$3.51	$2,192	
Turnouts	4"-0" Crushed		6	turnout	14	turnouts	3	42	$3.51	$147	
Removed Culv. Backfil	4"-0" Crushed							24	$3.51	$84	
Dissipator Rock	24"-6" Riprap	4+97, 9+88, 15+63	N/A	culvert	12	culverts	3	36	$3.74	$135	
Total Rock for Road Segment:		I2 to I3 Tidewater Road						1,234			$4,303
ROAD SEGMENT	I5 to I6 Tidewater Loop			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I5 to I6 Tidewater Loop Volume (CY) per		0+00 to 21+10 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1 1/2"-0" Crushed	I5 to I6	N/A					100	$3.51	$351	
Surface Rock	1 1/2"-0" Crushed	I5 to I6	4	station	22	stations	21.10	464	$3.51	$1,629	
Turnouts	1 1/2"-0" Crushed	I5 to I6	4	turnout	10	turnouts	4	40	$3.51	$140	
Junctions	1 1/2"-0" Crushed	I5 to I6	N/A	junction	10	junctions	1	10	$3.51	$35	
Curve Widening	1 1/2"-0" Crushed	I5 to I6	4	curve	N/A	curves		30	$3.51	$105	
Culvert Bedding	1 1/2"-0" Stockpile	0+00, 14+78, 20+05	N/A	culvert	20	culverts	3	60	$3.51	$211	
Energy Dissipators	24"-6" Riprap	14+78, 20+05	N/A	dissipator	10	dissipators	2	20	$3.74	$75	
Fill Construction	6" -0" Pit-run	2+80	N/A	fill	40	fills	1	40			On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	2+80	N/A	culvert	50	culverts	1	50			On Fill Sheets*
Base Rock	4"-0" Crushed	2+80	10	fill	50	fills	1	50			On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	2+80	4	fill	24	fills	1	24			On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	2+80	N/A	fill	90	fills	1	90			On Fill Sheets*
Fill Construction	6" -0" Pit-run	10+40	N/A	fill	60	fills	1	60			On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	10+40	N/A	culvert	50	culverts	1	50			On Fill Sheets*
Base Rock	4"-0" Crushed	10+40	10	fill	70	fills	1	70			On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	10+40	4	fill	24	fills	1	24			On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	10+40	N/A	fill	110	fills	1	110			On Fill Sheets*
Box Culvert footing	1 1/2"-0" Stockpile	15+40	N/A					15			On Fill Sheets*
Box Culvert footing	24"-6" Riprap	15+40	N/A					36			On Fill Sheets*
Fill Armor	24"-6" Riprap	15+40	N/A					324			On Fill Sheets*
Base Rock	4"-0" Crushed	15+40	N/A					37			On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	15+40	N/A					20			On Fill Sheets*
Total Rock for Road Segment:		I5 to I6 Tidewater Loop						1,724			$2,547

ROAD SEGMENT	I7 to I8 Tidewater Loop			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I7 to I8 Tidewater Loop Volume (CY) per		0+00 to 3+95 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1 1/2"-0" Stockpile	I7 to I8	N/A					20	$3.51	$70	
Surface Rock	1 1/2"-0" Stockpile	I7 to I8	N/A	station	22	stations	3.95	87	$3.51	$305	
Culvert Bedding	1 1/2"-0" Stockpile	0+90	N/A	culvert	20	culvert	1	20	$3.51	$70	
Total Rock for Road Segment:		I7 to I8 Tidewater Loop						127			$445
ROAD SEGMENT	I9A to I9 Tidewater Loop			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I9A to I9 Tidewater Loop Volume (CY) per		0+00 to 3+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1 1/2"-0" Stockpile		N/A					20	$3.51	$70	
Total Rock for Road Segment:		I9A to I9 Tidewater Loop						20			$70
ROAD SEGMENT	I9 to I10 Tidewater Loop			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I9 to I10 Tidewater Loop Volume (CY) per		0+00 to 50+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1 1/2"-0" Stockpile	I9 to I10	N/A					200	$3.51	$702	
Total Rock for Road Segment:		I9 to I10 Tidewater Loop						200			$702
ROAD SEGMENT	I17 to I18 Swede Road			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I17 to I18 Swede Road Volume (CY) per		0+00 to 118+80 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Subgrade Leveling	1"-0" Stockpile	I17 to I18	N/A					250	$3.14	$785	
Surface Rock	1"-0" Stockpile	0+00 to 26+40	2	station	11	stations	26.40	290	$3.14	$912	
Turnouts	1"-0" Stockpile	I17 to I18	N/A	turnout	10	turnouts	1	10	$3.14	$31	
Base Rock	4"-0" Stockpile	1+70 (Fish Pipe)	9	station	49	stations	1	49	$3.14	$154	
Fill Widening	4"-0" Stockpile	1+70 (Fish Pipe)	9	fill	14	fills	1	14	$3.14	$44	
Surface Rock	1"-0" Stockpile	1+70 (Fish Pipe)	4	station	22	stations	1	22	$3.14	$69	
Fill Widening	1"-0" Stockpile	1+70 (Fish Pipe)	4	fill	6	fills	1	6	$3.14	$19	
Culvert Bedding	1"-0" Stockpile	1+70 (Fish Pipe)	N/A	culvert	146	culverts	1	146	$3.14	$458	
Fill Armor/Dissipator	24"-6" Riprap	1+70 (Fish Pipe)	N/A	fill	112	fills	1	112	$7.06	$791	
Dissipator Rock	24"-6" Riprap	3+00	N/A	culvert	10	culverts	1	10	$7.06	$71	
Culvert Bedding	1"-0" Stockpile	3+00	N/A	culvert	20	culverts	1	20	$3.14	$63	
Total Rock for Road Segment:		I17 to I18 Swede Road						929			$3,397
ROAD SEGMENT	I19 to I20 Wooden Road			POINT TO POINT		Sta. to Sta.					
Application	Rock Size and Type	Location	Depth of Rock (inches)	I19 to I20 Wooden Road Volume (CY) per		0+00 to 60+00 Number of		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Junctions	1"-0" Stockpile	0+00	N/A	junction	20	junctions	1	20	$3.14	$63	
Total Rock for Road Segment:		I19 to I20 Wooden Road						20			$63

Processing:	Description	No.sta	Rate/sta	Cost	
	Water, Process & Compact Crushed Rock:	70.37	$48.23	$3,394	
SUB TOTAL FOR SURFACING					**$29,914**

SPECIAL PROJECTS

Description		Cost
Construct Dissipaters W/Excavator @$138hr. x 0.5/dissipator x 4 dissipators	=	$276
5 hours Labor @$37/hour	=	$185
Develop riprap rock at Old Tidewater Pit for Box Culvert on I5-I6. 360cy x $3.70/cy	=	$1,332
SUB TOTAL FOR SPECIAL PROJECTS		$1,793

GRAND TOTAL **$108,992**

SUMMARY OF CONSTRUCTION COSTS
FILL COSTS/X-DRAINS

SALE NAME: Rising Tide — NEW CONSTRUCTION: _____ STATIONS _____ MILES
ROAD: Tidewater Loop Road — IMPROVEMENT: _____ STATIONS _____ MILES
POINTS: I2-I3, I5-I6, I7-I8, I17-I18

Project No. 1 Rd. Improvement

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I2-I3					**I5-I6**				
4+97	18/CPP	36	$17.64	$635.04	15+40	Concrete	20	Fill Sheet	$38,560.00
9+88	18/CPP	40	$17.64	$705.60	20+05	18/CPP	40	$17.64	$705.60
15+63	18/CPP	40	$17.64	$705.60					
					I7-I8				
I5-I6					0+90	18/CPP	30	$17.64	$529.20
0+00	18/CPP	40	$17.64	$705.60					
2+80	24/ALCSP	60	Fill Sheet	$6,871.52	**I17-I18**				
10+40	24/ALCSP	60	Fill Sheet	$7,973.32	1+70	96/ALCSP	50	Fill Sheet	$17,888.00
14+78	18/CPP	40	$17.64	$705.60	3+00	18/CPP	30	$17.64	$529.20

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	22 Culvert Markers @$18.00 ea.	22	$18.00	$396.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $76,910

ROCKING

	Subgrade prep: Description	Stations	x	Rate/sta	Cost
*Grading Fills	2 lifts @$23.65 per lift=$47.30 x 2 sta.	2.00	x	$47.30	$94.60
*Vibratory Roller	2 lifts @$21.78 per lift= $43.56 per station	2.00	x	$43.56	$87.12

*4"-0" crushed rock only

Processing: Description	sta	Rate/sta	Cost
Grade, Compaction @48.23 per lift x's 2 lifts =$96.46	2.00	$96.46	$192.92

ROCKING $375

SUB TOTAL $77,285

Compiled By: L. Freeman Date: 04/30/2008

Fill Reconstruction Cost Estimate

Lanny Freeman
04/30/2008

Segment: I5 to I6 Station: 2+80
Fill: 1 Height: 11

Materials	Quantity		$	Total	
24"x60', 14ga, ALCSP	60		$24.40	$1,464.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	80	cy	$3.90	$312.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	50	cy	$3.38	$169.00	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
6"-0" pit-run fill reconstruction	40	cy	$4.19	$167.60	
1 1/2"-0" Crushed Rock for	24	cy	$3.38	$81.12	
4"-0" Crushed Rock for Road	50	cy	$3.38	$169.00	
Erosion Control	0.05	ac	$1,532.00	$76.60	
Mulch, seed and fert.					**$2,502.32**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	10	$1,380.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	8	$1,168.00	
	Stand-By	2		$43.80	4	$350.40	
Vibratory Roller							
	Operating	1		$72.00	4	$288.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	5	$370.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	4	$36.00	
	Stand-By	1		$5.40	4	$21.60	
Laborer		1		$37.00	10	$370.00	**$4,369.20**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$6,872**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I5 to I6 Station: 10+40
Fill: 2 Height: 12

Materials	Quantity		$	Total	
24"x60', 14ga, ALCSP	60		$24.40	$1,464.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	100	cy	$3.90	$390.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	50	cy	$3.38	$169.00	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
6"-0" pit-run fill reconstruction	60	cy	$4.19	$251.40	
1 1/2"-0" Surfacing Rock	24	cy	$3.38	$81.12	
4"-0" Crushed Rock for Road	70	cy	$3.38	$236.60	
Erosion Control Mulch, seed and fert.	0.05	ac	$1,532.00	$76.60	**$2,731.72**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	12	$1,656.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	10	$1,460.00	
	Stand-By	2		$43.80	4	$350.40	
Vibratory Roller							
	Operating	1		$72.00	6	$432.00	
	Stand-By	1		$43.20	4	$172.80	
Front-End Loader, Medium							
	Operating	1		$74.00	6	$444.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	4	$36.00	
	Stand-By	1		$5.40	4	$21.60	
Laborer		1		$37.00	10	$370.00	**$5,241.60**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$7,973**

Sale Name: Rising Tide **BOX CULVERT** **Prepared by:** d.mellison
Project: No. 1
Project Type: Type F Stream Crossing **Station 15+40 I5 to I6** **Date:** 3/25/08

Phase I: Fill, Culvert Removal and Disposal

Qty.	Equipment/Activity	Qty (Cy)	($/Cy)	Hours	($/Hr)	Cost ($)
1	C330 Excavator w/ 2 cy bucket (Site Exc and sort)	501		8	$138.00	$1,104.00
	Sorting and stockpiling cobble	34		2	$138.00	$276.00
	12 yard Dump Truck (Culvert Disposal)			3	$73.00	$219.00
	Load and Haul Waste material	347	$3.55			$1,231.85
						$2,830.85

Phase II: Development of Footings, Channel and De-watering

Qty.	Equipment/Activity	Qty (Cy)	($/Cy)	Hours	($/Hr)	Cost ($)
	Assisting Contractor's Engineer/ staking site			6	$42.00	$252.00
1	C330 Excavator w/ 2 cy bucket (set footings)			6	$138.00	$828.00
	Load, haul, dump footing mat. (11/2"-0") Cr. Rock	15	$3.51			$52.65
	24"-6" Rip Rap under 11/2"-0" crushed footings	36	$4.35			$156.60
2	Laborer			6	$37.00	$444.00
1	Water Pump			24	$10.00	$240.00
	Dig Sump to pump from (C330)			1	$138.00	$138.00
	Water Pump labor			9	$37.00	$333.00
	Footing Fabric	50	$2.50			$125.00
1	Hand Held Tamper			6	$8.00	$48.00
						$2,617.25

Phase III: Install box segments

Qty.	Equipment/Activity	Qty	($/Qty)	Hours	($/Hr)	Cost ($)
2	Unloading box culvert components (C330's)			5	$138.00	$1,380.00
2	Setting Components (C330)			3	$138.00	$828.00
	Labor unloading and setting box culvert components			8	$37.00	$296.00
	Joint Grouting (sacks)	45	$21.09			$949.05
2	Joint grouting labor			5	$37.00	$370.00
1	Portable grout mixer			8	$4.00	$32.00
1	Concrete Open Bottom Slab Culvert (E-80 loading), 12' x 10' x 20'					$18,000.00
						$21,855.05

Phase IV: Approach Backfills and Riprap/cobble placement

Qty.	Equipment/Activity	Qty	($/Qty)	Hours	($/Hr)	Cost ($)
	Backfill with Borrow Material	100	$3.55			$355.00
	Utilize suitable excavated material to backfill	120		4	$138.00	$552.00
1	Hand Held Tamper			8	$8.00	$64.00
	Labor			8	$37.00	$296.00
	Fill Armor and channel ripraping	324	$4.35			$1,409.40
	Spread Cobble	34		2	$138.00	$276.00
1	Small tractor to aide in cobble placement			3	$94.00	$282.00
	Armor/Riprap placement, Channel Development			12	$138.00	$1,656.00
						$4,890.40

Phase V: Surfacing and Mulching

Qty.	Equipment	Qty (Cy)	($/Cy)	Unit	($/Unit)	Cost ($)
	4"-0" Base Rock ($/cy)	37	$3.51			$129.87
	1 1/2"-0" Surface Rock ($/cy)	20	$3.51			$70.20
	Processing Crushed Rock			1	$94.84	$94.84
	Straw Mulch w/Seed Application EC mix ($/ac.)			0.04	$619	$24.76
						$319.67

Miscellaneous Costs

Qty.	Equipment	Qty.	$	Ft.	($/Ft.)	Cost ($)
2	Mobilization, extra excavator		$1,030			$1,030.00
1	Waste area clean up, small tractor ($/hr)	2	$94.00			$188.00
	Engineering Fees					$5,000.00
						$6,218.00

Total Project Cost = $38,731.22

Point I17 to Point I18
Type F Replacement & Road Improvement
Swede Road

Sale Name: Rising Tide Date: 3/10/08

Construction Phase	QTY BCY	Equipment Hours									Labor	Culvert		Erosion Control		Total
		C330	Hammer	Dmp Tr	Gdr 14G	Cat 966	Roller	Buggy	Pump	Tamper		Ft	$/ft.	Acres	$/Acre	$
Unload, move cmp to site, and band		4									6					
Fill and Culvert Excavation	455	6.5	3	6.5												
De-watering (w/pump) (24hrs/day)									10		4					
Build culvert bed (crushed rock) **	26	1.5		***		***				2	2					
Place culvert \ tamp flanks (c.rock) **	60	2		***		***				2	2					
Backfill culvert w / crushed rock **	60	2		***		***				2	2					
Remaining Backfill *	198	4		3		3				4	4					
Fill Compaction					0.5		2									
Remove Waste Material	257	4		3.5												
Seed culvert w\onsite cobble	26	3						4			8					
Embedded Riprap (Dissipator)	12	1		***				1			2					
Develop and Place Riprap/Fill Armor	100	8		***												
Haul Away Old Culvert				1.5												
Total Hours		36	3	14.5	0.5	3	2	5	10	10	30					
Equipment Rates:		$138	$15	$73	$90	$74	$72	$20	$9	$9	$37					
Sub total Hourly rates:		**$4,968**	**$45**	**$1,059**	**$45**	**$222**	**$144**	**$100**	**$90**	**$90**	**$1,110**					**$7,873**
96" Aluminized Steel Culvert (10 ga)												50	$176			**$8,800**
96" x 26" band												2	$278			**$556**
Step Beveling (both ends)												2	$124			**$248**
96" Neoprene Gasket 12" Wide												2	$52			**$104**
Sub total Culvert Material Cost:																**$9,708**
Sub total Seeding and Mulching:																
Project site & Waste area														0.200	$536	**$107**
Straw Bales (20 bales @$10/bale)																**$200**

Total Installation Cost: **$17,888**

Notes:
1) Cost to improve road segment I17 to I18 is on a Summary of Construction Costs sheet.
2) * Remaining backfill composed of material from excavated fill.
3) Old culvert is to be disposed of off of State Lands.
4) Mobilization costs are in the Move-In portion of the SUMMARY OF ALL PROJECT COSTS.
5) ** 1"-0" crushed backfill and bedding rock located at the Swede Rd Stockpile.
6) Riprap rock is located at the Swede Rd Quarry.
7) ***Rock haul included on the Summary of Construction

Project No. 3 Road Improvement

SUMMARY OF CONSTRUCTION COSTS

SALE NAME: Rising Tide — NEW CONSTRUCTION: 0.00 STATIONS 0.00 MILES

ROAD: I9-I11 (28+75), I12-I13 (22+80), I14-I15 (15+90), and I15-I16 (7+00) — IMPROVEMENT: 74.45 STATIONS 1.41 MILES

SURFACING

Subgrade prep:

Description	Stations/ amount	x	Rate/ sta/amt	Cost
Grade, Shape and Ditch	74.45	x	$21.20	$1,578.34
Surfacing Rock Processing and Compaction (Subgrade Leveling)	74.45	x	$17.24	$1,283.52

ROAD SEGMENT	I9 to I11 Tidewater Loop			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I9 to I11 Tidewater Loop Volume (CY) per		0+00 to 28+75 Number of					
Subgrade Leveling	1 1/2"-0" Crushed	I9 to I11	N/A					250	$3.51	$878	
Culvert Bedding	1 1/2"-0" Stockpile	10+25	N/A	culvert	20	culverts	1	20	$3.51	$70	
Fill Construction	6" -0" Pit-run	11+80	N/A	fill	40	fills	1	40		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	11+80	N/A	culvert	40	culverts	1	40		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	11+80	10	fill	40	fills	1	40		$0	On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	11+80	4	fill	24	fills	1	24		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	11+80	N/A	fill	50	fills	1	50		$0	On Fill Sheets*
Fill Construction	6" -0" Pit-run	24+75	N/A	fill	80	fills	1	80		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	24+75	N/A	culvert	90	culverts	1	90		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	24+75	10	fill	80	fills	1	80		$0	On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	24+75	4	fill	36	fills	1	36		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	24+75	N/A	fill	170	fills	1	170		$0	On Fill Sheets*
Total Rock for Road Segment:		I9 to I11 Tidewater Loop						920		$948	

ROAD SEGMENT	I12 to I13 Tidewater Loop			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost	
Application	Rock Size and Type	Location	Depth of Rock (inches)	I12 to I13 Tidewater Loop Volume (CY) per		0+00 to 22+80 Number of					
Subgrade Leveling	1 1/2"-0" Crushed	I12 to I13	N/A					100	$3.51	$351	
Surface Rock	1 1/2"-0" Crushed	I12 to I13	4	station	22	stations	22.80	502	$3.51	$1,761	
Turnouts	1 1/2"-0" Crushed	I12 to I13	4	turnout	10	turnouts	3	30	$3.51	$105	
Junctions	1 1/2"-0" Crushed	I12 to I13	N/A	junction	10	junctions	1	10	$3.51	$35	
Curve Widening	1 1/2"-0" Crushed	I12 to I13	N/A	curve	N/A	curves	N/A	30	$3.51	$105	
Culvert Bedding	1 1/2"-0" Stockpile	13+00, 16+35	N/A	culvert	40	culverts	2	80	$3.51	$281	
Culvert Bedding	1 1/2"-0" Stockpile	4+00	N/A	culvert	20	culverts	1	20	$3.51	$70	
Energy Dissipators	24"-6" Riprap	13+00	N/A	dissipator	20	dissipators	1	20	$3.74	$75	
Fill Construction	6" -0" Pit-run	0+50	N/A	fill	50	fills	1	50		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	0+50	N/A	culvert	40	culverts	1	40		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	0+50	10	fill	40	fills	1	40		$0	On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	0+50	4	fill	24	fills	1	24		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	0+50	N/A	fill	60	fills	1	60		$0	On Fill Sheets*
Fill Construction	6" -0" Pit-run	5+05	N/A	fill	50	fills	1	50		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	5+05	N/A	culvert	60	culverts	1	60		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	5+05	10	fill	70	fills	1	70		$0	On Fill Sheets*

Surface Rock	1 1/2"-0" Crushed	5+05	4	fill	24	fills	1	24		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	5+05	N/A	fill	70	fills	1	70		$0	On Fill Sheets*
Fill Construction	6" -0" Pit-run	8+45	N/A	fill	40	fills	1	40		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	8+45	N/A	culvert	60	culverts	1	60		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	8+45	10	fill	60	fills	1	60		$0	On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	8+45	4	fill	24	fills	1	24		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	8+45	N/A	fill	20	fills	1	20		$0	On Fill Sheets*
Fill Construction	6" -0" Pit-run	22+50	N/A	fill	20	fills	1	20		$0	On Fill Sheets*
Culvert Bedding	1 1/2"-0" Stockpile	22+50	N/A	culvert	40	culverts	1	40		$0	On Fill Sheets*
Base Rock	4"-0" Crushed	22+50	10	fill	40	fills	1	40		$0	On Fill Sheets*
Surface Rock	1 1/2"-0" Crushed	22+50	4	fill	24	fills	1	24		$0	On Fill Sheets*
Fill Armor/Dissipator	24"-6" Riprap	22+50	N/A	fill	20	fills	1	20		$0	On Fill Sheets*
Total Rock for Road Segment:			I12 to I13 Tidewater Loop					1,628			$2,783

ROAD SEGMENT	I14 to I15 Tidewater Loop			POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I14 to I15 Tidewater Loop Volume (CY) per	0+00 to 15+90 Number of			
Subgrade Leveling	1 1/2"-0" Stockpile	I14 to I15	N/A			100	$3.51	$351
Total Rock for Road Segment:			I14 to I15 Tidewater Loop			100		$351

ROAD SEGMENT	I15 to I16 Tidewater Loop			POINT TO POINT	Sta. to Sta.	TOTAL VOLUME (CY)	Rate/ Sta./ amt.	Cost
Application	Rock Size and Type	Location	Depth of Rock (inches)	I15 to I16 Tidewater Loop Volume (CY) per	0+00 to 7+00 Number of			
Subgrade Leveling	1 1/2"-0" Stockpile	I15 to I16	N/A			20	$3.51	$70
Total Rock for Road Segment:			I15 to I16 Tidewater Loop			20		$70

Processing:	Description	No.sta	Rate/sta	Cost	**$8,114**
	Water, Process & Compact Crushed Rock:	22.80	$48.23	$1,100	
SUB TOTAL FOR SURFACING					

SPECIAL PROJECTS

Description		Cost
Construct Dissipaters W/Excavator @$138hr. x 0.5/dissipator x 4 dissipators	=	$276
5 hours Labor @$37/hour	=	$185
	=	
	=	

SUB TOTAL FOR SPECIAL PROJECTS $461

GRAND TOTAL **$58,410**

SUMMARY OF CONSTRUCTION COSTS
FILL COSTS/X-DRAINS

SALE NAME: Rising Tide — NEW CONSTRUCTION: ____ STATIONS ____ MILES
ROAD: Tidewater Loop Road — IMPROVEMENT: ____ STATIONS ____ MILES
POINTS: I9-I11, I12-I13

Project No. 3 Road Improvement

CULVERT MATERIALS AND INSTALLATION

Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
I9-I11					**I12-I13**				
10+25	18/CPP	30	$17.64	$529.20	5+05	24/ALCSP	50	Fill Sheet	$7,032.22
11+80	24/ALCSP	50	Fill Sheet	$5,310.72	8+45	36/ALCSP	60	Fill Sheet	$6,753.72
24+75	36/ALCSP	80	Fill Sheet	$14,086.08	13+00	18/CPP	35	$17.64	$617.40
					16+35	18/CPP	30	$17.64	$529.20
I12-I13					22+50	24/ALCSP	35	Fill Sheet	$4,595.72
0+50	24/ALCSP	50	Fill Sheet	$8,004.42					
4+00	18/CPP	30	$17.64	$529.20					

	Description	Quantity	Rate	Cost
Other/miscellaneous:				
Culvert stakes & markers:	8 Culvert Markers @$18.00 ea.	9	$18.00	$162.00

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION $48,150

ROCKING

Subgrade prep: Description	Stations	x	Rate/sta	Cost
Grading **I9-I11** Fills 11+80, 24+75, **I12-I13** 0+50, 5+05, 8+45, 22+50	6.00	x	$70.95	$425.70
3 lifts @$23.65 per lift=$70.95 x 6 fills (stations)				
Vibratory Roller 3 lifts @$21.78 per lift=$65.34 per fill (stations)	6.00	x	$65.34	$392.04

Processing: Description	sta	Rate/sta	Cost
Grade, Compaction @48.23 per lift x's 3 lifts =$96.46	6.00	$144.69	$868.14
I9-I11 11+80, 24+75, I12-I13 0+50, 5+05, 8+45, 22+50			

ROCKING $1,686

SUB TOTAL $49,836

Compiled By: L. Freeman Date: 04/30/2008

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I9 to I11 Station: 11+80
Fill: 3 Height: 8

Materials	Quantity		$	Total	
24"x50', 14ga, ALCSP	50		$24.40	$1,220.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	40	cy	$3.90	$156.00	
1 1/2"-0" Cr. bedding/backfull	40	cy	$3.38	$135.20	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
6"-0" pit-run fill reconstruction	40	cy	$4.19	$167.60	
1 1/2"-0" Surfacing Rock	24	cy	$3.38	$81.12	4"
4"-0" Crushed Rock for Road	40	cy	$3.38	$135.20	10"
Erosion Control	0.05	ac	$1,532.00	$76.60	
Mulch, seed and fert.					**$2,034.72**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	6	$828.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	6	$876.00	
	Stand-By	2		$43.80	2	$175.20	
Vibratory Roller							
	Operating	1		$72.00	4	$288.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	5	$370.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	4	$36.00	
	Stand-By	1		$5.40	4	$21.60	
Laborer		1		$37.00	8	$296.00	**$3,276.00**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$5,311**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I9 to I11 Station: 24+75
Fill: 4 Height: 16

Materials	Quantity		$	Total	
36"x80', 14ga, ALCSP	80		$37.00	$2,960.00	
Bevel Inlet End	1		$36.00	$36.00	
24"-6" Riprap Fill Armor	160	cy	$3.90	$624.00	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
1 1/2"-0" Cr. bedding/backfull	90	cy	$3.38	$304.20	
6"-0" Pit-run fill reconstructior	80	cy	$4.19	$335.20	
1 1/2"-0" Surfacing Rock	36	cy	$3.38	$121.68	4"
4"-0" Crushed Rock for Road	80	cy	$3.38	$270.40	10"
Erosion Control	0.1	ac	$1,532.00	$153.20	
Mulch, seed and fert.					**$4,843.68**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	20	$2,760.00	
	Stand-By	1		$82.80	4	$331.20	
Dump Truck							
	Operating	2		$73.00	20	$2,920.00	
	Stand-By	2		$43.80	4	$350.40	
Rubber Tire Skid							
er	Operating	1		$72.00	10	$720.00	
	Stand-By	1		$43.20	4	$172.80	
Vibratory Roller							
	Operating	1		$72.00	4	$288.00	
	Stand-By	1		$43.20	4	$172.80	
Front-End Loader, Medium							
	Operating	1		$74.00	8	$592.00	
	Stand-By	1		$44.40	4	$177.60	
Hand Held Tamper							
	Operating	1		$9.00	6	$54.00	
	Stand-By	1		$5.40	4	$21.60	
Water Pump							
	Operating	1		$9.00	10	$90.00	
Laborer		1		$37.00	16	$592.00	**$9,242.40**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$14,086**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I12 to I13 Station: 0+50
Fill: 5 Height: 9

Materials	Quantity		$	Total	
24"x50', 14ga, ALCSP	50		$24.40	$1,220.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	50	cy	$3.90	$195.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	40	cy	$3.38	$135.20	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
6"-0" pit-run fill reconstruction	50	cy	$4.19	$209.50	
1 1/2"-0" Crushed Top Course	24	cy	$3.38	$81.12	4"
4"-0" Crushed Rock for Road	40	cy	$3.38	$135.20	10"
Erosion Control Mulch, seed and fert.	0.05	ac	$1,532.00	$76.60	
					$2,115.62

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	12	$1,656.00	
	Stand-By	1		$82.80	3	$248.40	
Dump Truck							
	Operating	2		$73.00	12	$1,752.00	
	Stand-By	2		$43.80	2	$175.20	
Vibratory Roller							
	Operating	1		$72.00	5	$360.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	5	$370.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	6	$54.00	
	Stand-By	1		$5.40	4	$21.60	
Water Pump							
	Operating	2		$9.00	8	$144.00	
Laborer		2		$37.00	12	$888.00	**$5,888.80**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$8,004**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I12 to I13 Station: 5+05
Fill: 6 Height: 10

Materials	Quantity		$	Total	
24"x50', 14ga, ALCSP	50		$24.40	$1,220.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	60	cy	$3.90	$234.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	60	cy	$3.38	$202.80	
24"-6" Dissipator Rock	10	cy	$3.90	$39.00	
6"-0" pit-run fill reconstruction	50	cy	$4.19	$209.50	
1 1/2"-0" Surfacing Rock	24	cy	$3.38	$81.12	4"
4"-0" Crushed Rock for Road	70	cy	$3.38	$236.60	10"
Erosion Control Mulch, seed and fert.	0.1	ac	$1,532.00	$153.20	
					$2,400.22

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	10	$1,380.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	10	$1,460.00	
	Stand-By	2		$43.80	2	$175.20	
Vibratory Roller							
	Operating	1		$72.00	5	$360.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	5	$370.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	4	$36.00	
	Stand-By	1		$5.40	4	$21.60	
Laborer		1		$37.00	12	$444.00	**$4,632.00**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$7,032**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I12 to I13 Station: 8+45
Fill: 7 Height: 5

Materials	Quantity		$	Total	
36"x60', 14ga, ALCSP	60		$37.00	$2,220.00	
Bevel Inlet End	1		$36.00	$36.00	
24"-6" Riprap Armor	20	cy	$3.90	$78.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	60	cy	$3.38	$202.80	
6"-0" pit-run fill reconstruction	40	cy	$4.19	$167.60	
1 1/2"-0" Crushed Top Course	24	cy	$3.38	$81.12	4"
4"-0" Crushed Rock for Road	60	cy	$3.38	$202.80	10"
Erosion Control	0.1	ac	$1,532.00	$153.20	
Mulch, seed and fert.					**$3,141.52**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	8	$1,104.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	8	$1,168.00	
	Stand-By	2		$43.80	2	$175.20	
Vibratory Roller							
	Operating	1		$72.00	3	$216.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	3	$222.00	
	Stand-By	1		$44.40	3	$133.20	
Hand Held Tamper							
	Operating	1		$9.00	3	$27.00	
	Stand-By	1		$5.40	2	$10.80	
Water Pump							
	Operating	1		$9.00	5	$45.00	
Laborer		1		$37.00	7	$259.00	**$3,612.20**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$6,754**

Fill Reconstruction Cost Estimate

L. Freeman
04/30/2008

Segment: I12 to I13 Station: 22+50
Fill: 8 Height: 6

Materials	Quantity		$	Total	
24"x 35', 14ga, ALCSP	35		$24.40	$854.00	
Bevel Inlet End	1		$24.00	$24.00	
24"-6" Riprap Armor	20	cy	$3.90	$78.00	
1 1/2"-0" Crushed Rock for Bedding/Backfill	40	cy	$3.38	$135.20	
6"-0" pit-run fill reconstruction	20	cy	$4.19	$83.80	
1 1/2"-0" Crushed Top Course	24	cy	$3.38	$81.12	4"
4"-0" Crushed Rock for Road	40	cy	$3.38	$135.20	10"
Erosion Control	0.05	ac	$1,532.00	$76.60	
Mulch, seed and fert.					**$1,467.92**

Equipment/Labor Costs		Quantity		$/Hr.	Hours	Total	
Excavator, Large							
	Operating	1		$138.00	7	$966.00	
	Stand-By	1		$82.80	2	$165.60	
Dump Truck							
	Operating	2		$73.00	7	$1,022.00	
	Stand-By	2		$43.80	2	$175.20	
Vibratory Roller							
	Operating	1		$72.00	3	$216.00	
	Stand-By	1		$43.20	2	$86.40	
Front-End Loader, Medium							
	Operating	1		$74.00	3	$222.00	
	Stand-By	1		$44.40	2	$88.80	
Hand Held Tamper							
	Operating	1		$9.00	3	$27.00	
	Stand-By	1		$5.40	2	$10.80	
Laborer		1		$37.00	4	$148.00	**$3,127.80**

* Rock Cost shown on the Road Improvement cost sheet.

Project Total	**$4,596**

SUMMARY OF ROCK DEVELOPMENT AND CRUSHING COSTS

PROJECT NO. 4 **Timber Sale Name: Rising Tide**

Quarry: Tidewater Loop Swell:

Location: SE 1/4, Section 21, T6N, R7W Shrink: 16%

County: Clatsop

By: C.Bangs Loading Hopper: Yes

Date: 03/25/2008

ROCK SIZE	REJECT	GRADATION	STOCKPILE CU. YDS.	TRUCK MEAS CU. YDS.	TOTAL CU. YDS.
3/4"-0"		CR			
1-1/2"-0"	20%	CR		2,625	2,625
4"-0"	20%	CR		7,129	7,129
6"-0"		PR		1,758	1,758
24"-6"		RR		2,162	2,162
36"		RR			
TOTAL CUBIC YARDS OF ROCK:				13,674	**13,674**

1) MOBILIZATION & SET UP:

EQUIPMENT	QUANTITY	RATE	COST	EQUIPMENT	QUANTITY	RATE	COST
3 Stage Crusher	1	$2,694	$2,694				
Screening Plants	3	$515	$1,546				
D8 Cat	2	$1,200	$2,400				
Loader	2	$688	$1,376				
Excavator	1	$1,200	$1,200				
Dump Trucks	1	$139	$139				
Loading Hopper	1	$515	$515				

SUB TOTAL FOR MOBILIZATION $9,870

EQUIPMENT SET UP	TIMES	RATE	COST
3 Stage Crusher	1	$3,205	$3,205
Screening Plants	3	$273	$819
Loading Hopper	1	$273	$273
Original Calibration	1	$507	$507

SUB TOTAL FOR SET UP COSTS $4,804

TOTAL MOBILIZATION & SET UP COSTS $14,674

2) CLEARING & GRUBBING

DESCRIPTION	QUANTITY	UNIT	RATE	COST
Clear, Load, Haul to Waste Area	8.0	hr	$138	$1,104
Slash and Stumps (1 truck, 1 exc.)	4.0	hr	$73	$292
Pile & Burn Slash and Stumps(1 exc)	8.0	hr	$138	$1,104
Move-in Fire Truck for the burning of	1.0	ea	$162	$162
the Clearing Debris				

TOTAL CLEARING & GRUBBING COSTS $2,662

3) EXCAVATION

MATERIAL DESCRIPTION	QUANTITY	UNIT	RATE	COST	
Overburden Removal (drift)	5,000	bcy	$1.50	$7,500	
Overburden Removal (excavate, load	1,000	bcy	$2.60	$2,600	
haul, spread at waste area)					
Overburden Removal (excavate, load	2,400	bcy	*		*Cost included in
haul for borrow material)					fill reconstruction worksheets
Overburden Embankment	6,000	bcy	$0.30	$1,800	
(compaction and shaping)					

TOTAL EXCAVATION COSTS $11,900

4) DEVELOP ROCK

ROCK SUMMARY

Type	Cu. yd. Vol.	Weight
crushed	9,754	71%
pit run	1,758	13%
rip rap	2,162	16%
Total	13,674	
reject	1,951	14.3%

METHOD	%	QUANTITY	RATE	COST
Ripping	100%	13,674	$2.20	$30,083
Drill & shoot			$2.30	
Oversize red	2%	230	$5.80	$1,335
Pre-Screening	50%	4,877	$2.00	$9,754

TOTAL ROCK DEVELOPMENT COSTS $41,172

5) CALIBRATION & TESTING

DESCRIPTION	NO.	$/TEST	COST
Calibrate	1	$507.00	$507
Calibrate			
Test	6	$57.30	$344
Test			

TOTAL CALIBRATION & TESTING COSTS $851

6) FEEDING & LOADING

DESCRIPTION	CU. YD. QUANTITY	COST CU. YD.	TOTAL COST
Dig & Feed Rock	11,705	$0.92	$10,723

TOTAL FEEDING & LOADING COSTS $10,723

7) ROCK CRUSHING

ROCK SIZE	ROCK TYPE	CU. YD. QUANTITY	CRUSHER TYPE	HOURLY PRODUCTION	RATE CU. YD.	TOTAL COST
3/4"-0"	crushed		3 stage w/s			
1-1/2"-0"	crushed	2,625	3 stage w/s	100	$3.89	$10,211
4"-0"	crushed	7,129	2 stage w/s	120	$2.89	$20,615

TOTAL ROCK CRUSHING COSTS $30,826

8) STOCKPILING

STOCKPILE SITE PREPARATION

Equipment	Hours	Rate	Total
Dozer	1	$132.00	$132.00
Compactor		$72.00	
Grader		$90.00	
Excavator		$138.00	

Rock for Floor (CY)	$/CY Haul	Total

$132.00

SUB TOTAL $132

HAUL & STOCKPILE STOCKPILE LOCATION	SIZE	# of TRUCKS	CU. YDS.	RATE	COST
1.					
2.					
3.					
4.					
5.					
6.					

SUB TOTAL

TOTAL STOCKPILING COSTS $132

9) MISCELLANEOUS COSTS

DESCRIPTION	COST
Load, Haul, and Spread the reject material at the waste area.	$5,755
$3.78/CY 1,951 CY	
Final Quarry Dev., Access Road Const., Waterbarring, Drainage,	$2,500
Block Quarry Access, Seeding and mulching waste area	
Develop access roads into waste areas	$528
(4 hrs @ $132/hr w/ D8 cat)	
Drift and spread 400cy Pit run to facilitate rock removal.	$528
(4 hrs @ $132/hr w/D8 cat)	

TOTAL MISCELLANEOUS COSTS $9,311

10) GRAND TOTAL: **$122,250**

$/Cubic Yard $12.53

Footnotes:

Project #5 Vacating Cost Summary		
	Total Appraised Cost	
Mobilization	$	2,658.00
V1 to V2	$	8,451.00
V2 to V3	$	7,701.00
V4 to V5	$	3,084.00
V6 to V7	$	29,705.00
V8 to V9	$	1,059.00
Grand Total of Vacating	$	52,658

MOVE IN:

Road Segment	Description	Equipment		Cost
V1 to V2	Move from work on I2 to I3 and A to B			
	1 hour	Dozer (D8)	$	120.00
	1 hour	Excavator (C330)	$	138.00
V2 to V3	Mobilize after Area 4 logging is completed.			
	full mobilization cost	Dozer (D8)	$	1,200.00
	full mobilization cost	Excavator (C330)	$	1,200.00
		TOTAL	$	2,658.00

Rising Tide

Tidewater Loop Vacating. Project No. 5 Vacating. V1 to V2

Location/Description	330#1	330#2	D-8 CAT	10CY Truck #1	10 CY Truck #2	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 15+80 Waterbar/Block Road	3										
4+30 Remove Culvert/Fill Develop 5' stream channel	5		5					3	10	15	
10+20 Remove Culvert/Fill Restore natural contours	3							1	5	10	
11+00 Develop Waste Area for woody debris	1										
13+00 Remove Culvert/Fill Develop 4' Stream Channel	5		5					2	10	15	
13+40 to 15+00 Slide embankment removal and cleanup	4		4	4				4	15	30	
13+70 Remove Culvert/Fill Develop stream channel to natural contours	4							4	15	30	
15+30 Remove gate and accessories Transport to Point 4B	2			3							
15+80 Point V2 - pullback fill slopes widen stream channel	3							2	10	15	
Development of waste areas Sloping, compacting, mulching	2							2	10	15	
	32	0	14	7	0	0	0	18	75	130	0
	$ 4,416.00	$ -	$1,848.00	$ 511.00	$ -	$ -	$ -	$ 666.00	$ 750.00	$ 260.00	

Total Estimated Cost $ 8,451.00

Rising Tide

Tidewater Loop Vacating. Project No. 5 Vacating. V2 to V3

Location/Description	330#1	330#2	D-8 CAT	10 CY Truck #1	10 CY Truck #2	10 CY Truck #3	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 31+00 Waterbar/Block Road	4											
0+00 - Point V2 Pullback fill slopes, widen stream channel.	3								2	10	10	
11+10 to 12+60 Outslope and road fill removal. establish positive drainage across rd. prism	2											
17+90 Remove Culvert/fill Develop 9' stream channel, natural contours	5		5						3	10	15	
19+15 Remove Culvert/fill Develop 6' stream channel, natural contours	5		5						3	10	15	
19+50 to 21+30 Sidecast pullback	4								3	8	15	
26+40 to 27+00 Remove road fill to establish drainage	1											
29+40 Remove Culvert/fill Restore natural contours	5		5						2	15	20	
30+00 to 31+00 Sidecast pullback	3								2	5	10	
	32	0	15	0	0	0	0	0	15	58	85	0
	$ 4,416.00	$ -	$ 1,980.00	$ -	$ -	$ -	$ -	$ -	$ 555.00	$580.00	$ 170.00	

Total Estimated Cost $ 7,701.00

Rising Tide

Tidewater Loop Vacating. Project No. 5 Vacating. V4 to V5

Location/Description	330#1	330#2	D-8 CAT	10 CY Truck #1	10 CY Truck #2	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 3+30 Block road, remove road fill, outslope	4			4				2	10	16	
0+00 to 3+30 Salvage rock	2			2							
2+50 Remove Culvert/fill. Restore to natural contours. Develop minimum 10' stream channel	4			4				3	10	15	
Development of waste areas Sloping, compacting, mulching	2							4	8	12	
	12	0	0	10	0	0	0	9	28	42.5	0
	$ 1,656.00	$ -	$ -	$ 730.00	$ -	$ -	$ -	$ 333.00	$ 280.00	$ 85.00	$ -

Total Estimated Cost $ 3,084.00

Rising Tide

Tidewater Loop Vacating. Project No. 5 Vacating. V6 to V7

Location/Description	330#1	330#2	D-8 CAT	10 CY Truck #1	10 CY Truck #2	Off Road Truck	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 10+30 Waterbar/Block Road	1											
0+00 to 10+30 Salvage rock	6			6	6							
2+00 to 3+70 Sidecast pullback	4								2	8	10	
3+70 Remove Culvert/fill Develop 8' stream channel, natural contours	20	20		8	8				4	20	30	
5+40 Remove Culvert/fill Develop 10' stream channel, natural contours	30	30		30	30	30			4	20	30	
5+40 to 10+30 Sidecast pullback	12			4					6	20	30	
Development of waste areas Sloping, compacting, mulching	4								3	10	15	
	77	50	0	48	44	30	0	0	19	78	115	0
	$10,626.00	$6,900.00	$ -	$ 3,504.00	$ 3,212.00	$ 3,750.00	$ -	$ -	$ 703.00	$ 780.00	$ 230.00	

Total Estimated Cost $29,705.00

Rising Tide

Tidewater Loop Vacating. Project No. 5 Vacating. V8 to V9

Location/Description	330#1	330#2	D-8 CAT	10 CY Truck #1	10 CY Truck #2	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 3+50 Waterbar/Block Road	1										
0+00 to 2+80 Sidecast pullback	5							3	10	10	
	6	0	0	0	0	0	0	3	10	10	0
	$ 828.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 111.00	$ 100.00	$ 20.00	

Total Estimated Cost $ 1,059.00

Typical (Local) Project Work "Woods" Rates ~ Astoria District **November 2000**

Land Clearing

Windrowing/piling debris within R/W	$560.00	acre
Scatter outside of R/W (w/excavator or cat):	$840.00	acre
Piling, Burning	$1,720.00	acre
Chipping/Scatterring	$1,980.00	acre
Hauling clearing debris	Need cost appraisal	

Roadside Brushing

Light Brushing (alder, salmonberry)	$980.00	/mile
Medium Brushing (mixed brush, conifers)	$1,100.00	/mile
Heavy Brushing (dense conifer reproduction)	$1,300.00	/mile

Earth Excavation

Low use/risk, Field Design Construction		
Low use (field design) spur road construction	$117.00	/station
Low use (field design) landing construction	$270.00	/landing

High/Medium use, Full Design Construction		
Common excavation, drift up to 200'	$1.35	/bcy
End Haul up to 5000' (excavation, load, haul up to 5,000')	$2.75	/bcy
Embankment compaction (w/compaction equipment)	$0.40	/bcy
Cut slope rounding	$27.00	/station
Rock Drilling and shooting (road prism)	$3.50	/bcy
Production rock drilling and shooting (quarries)	$1.90	/bcy
Develop/rip/push pit run rock	$1.85	/bcy
Develop/rip/push/sort riprap rock	$2.60	/lcy
Screen quarry rock w/portable screening plant	$2.60	/lcy

Road Vacating		
Sidecast Pullback (<20'VD) w/materials placed	$220.00	/station
Sidecast Pullback (<20'VD) w/materials hauled	$335.00	/station
Sidecast Pullback (>20'VD) w/materials placed	$2.25-$4.45	/bcy
Sidecast Pullback (>20'VD) w/materials hauled	$3.35-$6.70	/bcy
Embankment Excavation	$2.25-$6.70	/bcy

Erosion Control

Straw	$4.50	/bale
Grass Seed, EC Mix (Ryes, fescue, clover)	1.10	/pound
Grass Seed, NS Mix (Ryes, clovers, orchard, trefoil)	$1.60	/pound
Fertilizer 16-20-0	$0.25	/pound
Hydro-seeding EC (1400# fiber, 100# seed, 50# tack, 100# fert)	$950.00	/acre
Hydro-seeding NS (1500# fiber, 100# seed, 50# tack, 200# fert)	$1,150.00	/acre
Hand Seeding, EC Mix (100# seed, 200# fert)	$400.00	/acre
Hand Seeding, NC Mix (100# seed, 200# fert)	$450.00	/acre
Straw Mulch Application (machine blower @ 2" depth)	$945.00	/acre
Straw Mulch w/Seed Application EC mix	$1,195.00	/acre
Straw Mulch w/Seed Application NS mix	$1,245.00	/acre

Culvert Materials

Round corrugated pipe. Prices per foot include delivery, bands and installation. *Indicates price is for materials only, does not include installation.* Costs do not include special installation techniques such as backfilling or bedding with crushed rock, tamping or rip rap dissipators. CMP rates are for galvanized steel (G) and aluminized coated steel (AC).

Diameter	CPP Double Wall	CMP 16 ga	CMP 16 ga	CMP 14 ga	CMP 14 ga

15"	$9.70	$12.30	G	$14.50	G
	$6.45	*$8.60*	*G*	*$10.05*	*G*
		$14.10	AC	$16.40	AC
		$9.90	*AC*	*$11.05*	*AC*
18"	$11.00	$14.00	G	$17.00	G
	$7.50	*$9.70*	*G*	*$11.80*	*G*
		$15.90	AC	$19.15	AC
		$10.20	*AC*	*$13.50*	*AC*
24"	$16.30	$18.40	G	$22.20	G
	$11.45	*$12.80*	*G*	$15.50	G
		$20.90	AC	$25.10	AC
		$14.70	*AC*	$17.80	AC
36"	$34.45	$29.00	G	$33.55	G
	$24.70	*$20.40*	*G*	*$23.60*	*G*
		$32.90	AC	$38.20	AC
		$23.50	*AC*	*$27.20*	*AC*
48"	$71.60	$38.40	G	$34.30	G
	$48.60	*$27.10*	*G*	*$28.45*	*G*
		$43.00	AC	$45.75	AC
		$31.15	*AC*	*$32.75*	*AC*

Add-on Costs:

Pipe end treatments, such as beveling	$25.00
6' x 2-1/2" white fibreglass (Carsonite) I beam posts	$14.10/stake, includes installatic

***Special installation materials such as crushed bedding rock, crushed backfill rock, riprap armor rock and/or riprap rock dissipators.

Geotextile Fabrics

Subgrade stabilization, separation, reinforcement ~ 12' width	$1.25	/lf
Subgrade stabilization, separation, reinforcement ~ 16' width	$1.70	/lf
10oz. Non-woven filtration cloth (free draining fill construction)	$2.00	/sq yd
4.5oz. Non-woven filtration cloth	$0.75	/sq yd

Note: Above rates include installation, decrease rates 20% for material cost only

Road Subgrade Prep.

Grading

Width	Ditch type	$/Station
14 & 16ft	Outslope	$11.20
16 ft	3 ft V ditch, Pull ditch material & Incorperate into Subgrade	$15.20
20 ft	3 ft V ditch, Pull ditch material & Incorperate into Subgrade	$16.90
14 & 16ft	No Ditch, Waterbar Road	$9.75

Compaction

Width	$/Station
16 ft	$12.50
20 ft	$15.63

Waste Ditch Material

Application	Equipment	$/Station
Scatter	Small Backhoe	$7.50
Load & Haul	Small Backhoe & Dump Truck	$14.00

Road Surfacing

Application	Material	Equipment	Rate
New	Crushed rock	Vibratory Roller, Grader (14G)	15.50/sta.
New/improve	Crushed rock	Vibratory Roller, Grader (14G), Water Truck	$37.00/sta./lift

New/improve	Pit run rock	Vibratory Grid Roller	$38.75/sta.

Equipment Rates

Brush Cutter	Hourly Rate w/Operator	Hourly Rate Equipment	Mobilization
Medium	$80.00		$225.00
Backhoe			
Small 4x4 (C580)	$65.00		$225.00
Compaction Equipment			
Vibratory Roller	$75.00		$540.00
Vibratory Grid Roller	$75.00		$540.00
Rubber Tire Skidder (C518)	$60.00		$520.00
Hand Held Tamper		$6.00	
Hydraulic Tamper Attachment		$8.00	
Drill and Compressor			
Air Track (2" - 3-1/2" hole)	$115.00		$540.00
Hydraulic (3-1/2" - 6" hole)	$225.00		$980.00
Jack Hammer		$9.00	
Dozers			
Small (D6)	$80.00		$540.00
Medium (D7)	$90.00		$560.00
Large (D8)	$120.00		$980.00
Excavators			
Small 1cy (C315)	$85.00		$540.00
Medium 1-1/2cy (C325)	$115.00		$900.00
Large 4-1/2 cy (C330)	$130.00		$980.00
Front End Loaders			
Small 2-1/2cy (C944)	$60.00		$520.00
Medium 3-1/2cy (C966)	$75.00		$540.00
Large 4-1/2cy (C980)	$90.00		$560.00
Graders			
Medium (12G)	$70.00		$520.00
Large (14G)	$80.00		$540.00
Trucks			
10-12cy Highway Dump Truck	$57.00		$114.00
20cy Highway Dump Truck w/Trailer	$67.00		$134.00
25cy Off-Road Dump Truck	$95.00		$540.00
Water Truck (1,500 gal)	$57.00		$114.00
Water Truck (2,500 gal)	$67.00		$132.00
Lowboy (5 axle)	$80.00		$160.00
Lowboy (9 axle)	$95.00		$190.00
Tilt Bed Truck and Trailer (40,000#)	$75.00		$150.00
Pick-up Truck	$40.00		$60.00
Miscellaneous			
Hydro-seeder	$90.00		$180.00
Mulch Chopper/Blower	$65.00		$130.00
Pump		$6.00	
Scraper	$105.00		$900.00

Project No. 6 Rising Tide Brushing

Segment	Name	Length (Miles)	Brush Type	Cost/Mile	Cost
B1-B2	Ebsen/Tidewater	0.6	L	1,318.00	$790.80
"	Ebsen/Tidewater	3.89	M	1,547.00	$6,017.83
"	Ebsen/Tidewater	0.59	H	1,890.00	$1,115.10
B3	Hamilton	2.10	H	1,890.00	$3,969.00
B4	TL70 (pit rd)	0.20	H	1,890.00	$378.00
B5-B6	Tidewater Loop	0.43	L	1,318.00	$566.74
B7	TL 80	0.36	M	1,547.00	$556.92
B8-B9	Tidewater Loop	0.60	L	1,318.00	$790.80
B10	TL90	0.25	L	1,318.00	$329.50
"	TL90	0.69	H	1,890.00	$1,304.10
B11	TL9010	0.44	M	1,547.00	$680.68
B12	TL9020	0.10	H	1,890.00	$189.00
B13	TL110	0.82	L	1,318.00	$1,080.76
B14-B15	Tidewater Loop	0.45	L	1,318.00	$593.10
B16-B17	Tidewater Loop	2.00	M	1,547.00	$3,094.00
"	"	0.40	VH	2,635.00	$1,054.00
B18-B19	Swede	2.30	L	1,318.00	$3,031.40
B20-B21	Wooden	0.40	L	1,318.00	$527.20
"	"	0.30	M	1,547.00	$464.10
"	"	0.45	VH	2,635.00	$1,185.75
B22	WO30	0.25	H	1,890.00	$472.50

Total Miles 17.62 **Total Project Cost** **$28,191**

L = Light brushing, red alder, salmonberry	$1,318.00 / mile
M = Medium brushing (mixed brush & conifer reproduction)	$1,547.00 / mile
H = Heavy brushing (dense conifer reproduction and saplings)	$1,890.00 / mile
VH = Very Heavy	$2,635.00 / mile

(1-14-08)

X/jewell_unit/timber sales/2008/rising tide/pre sale/projects/Project6_rising tide brushing

Rising Tide
Project No. 7 Stream Enhancement

Location	Site	No. Tops	Number of Logs	$/Tree*	Number of Straw Bales	$/Bale	Cost per Site
SE1	1	3	3	$225.00	2	$10.00	$695.00
SE2	2	5	5	$225.00	2	$10.00	$1,145.00
SE3	3	5	5	$225.00	2	$10.00	$1,145.00
SE4	4	4	4	$225.00	2	$10.00	$920.00

Subtotal	**$3,905**
Seed	**$56**
Labor	**$370**
Excavator Move-In	**$1,101**
Project Total	**$5,432**

Grass Seed 40lbs. @$1.40 lb=$56.00
Labor 10 hrs. @$37.00 hrs.=370.00

*$/Tree includes transportation cost of tree up to 1 mile.

CRUSHED ROCK COST

SALE NAME: Rising Tide
PROJECT: No. 1 and 3
QUARRY: Tidewater Loop Quarry
ROCK TYPE: Crushed
DATE: 03/24/2008
BY: J. Long

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
A-B	3.70	275				1.00	1.30	0.60	0.30	3.20
C-D	14.30	1,329				1.00	1.00	0.23	0.10	2.33
E-F	4.33	376				0.58	1.00	0.20	0.10	1.88
G-H	12.20	1,326				0.30	0.17	0.10	0.10	0.67
I-J	38.67	3,370					0.40	0.20	0.10	0.70
4A-4B	23.80	1,841				1.50	0.70	0.50	0.10	2.80
I2-I3	59.92	1,098				2.00	1.20	0.50	0.10	3.80
I5-I6	21.10	1,044				1.50	0.60	0.50	0.10	2.70
I7-I8	3.95	127				1.00	0.60	0.30	0.10	2.00
I9A-I9	3.00	20				1.00	0.50	0.30	0.10	1.90
I9-I10	50.00	200				1.40	0.50	0.30	0.10	2.30
I9-I11	28.75	580				0.80	0.40	0.20	0.10	1.50
I12-I13	22.80	1,218				0.50	0.40	0.20	0.10	1.20
I14-I15	15.90	100						0.10	0.10	0.20
I15-I16	7.00	20							0.10	0.10
TOTAL	309.42	12,924								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						0.79	0.60	0.30	0.10	1.79
						Average Round Trip Distance (miles)			3.59	

ROCK HAUL:

Truck type: D20 No. trucks: 1
Delay min.: 8 Efficiency: 85%

Truck type: D12 No. trucks: 3
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
Delay min.: 5 Efficiency: 85%

Ave haul: $2.33 /cy
Load: $0.45 /cy
Spread: $0.73 /cy

Production: cy/day = 1,073

CRUSHED ROCK HAUL COSTS 12,924 cy @ **$3.51 /cy**

CRUSHED ROCK COST

SALE NAME: Rising Tide
PROJECT: Nos. 1, 2, and 3
QUARRY: Swede and County Stockpiles
ROCK TYPE: Crushed
DATE: 03/24/2008
BY: J. Long

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
2A-2B	0.75	24	2					0.20	0.10	2.50
K-L	5.10	466	2	1	1	0.63	0.20	0.10	0.10	5.03
I1-I2	65.12	100		1		0.68	0.20	0.20	0.15	2.23
I2-I3	59.92	100		1	1	1.20	0.20	0.20	0.15	3.75
I17-I18	118.80	807					0.10	0.10	0.10	0.30
I19-I20	60.00	20			1	0.10	0.15	0.10	0.05	1.40
TOTAL	309.69	1,517								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL			**0.65**	**0.44**	**0.39**	**0.32**	**0.14**	**0.11**	**0.11**	**2.16**
								Average Round Trip Distance (miles)		4.31

ROCK HAUL:

Truck type: D20 No. trucks: 2
Delay min.: 8 Efficiency: 85%

Truck type: D12 No. trucks:
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks: 2
Delay min.: 5 Efficiency: 85%

Ave haul: $1.97 /cy
Load: $0.45 /cy
Spread: $0.73 /cy

Production: cy/day = 1,359

CRUSHED ROCK HAUL COSTS 1,517 cy @ **$3.14 /cy**

RIP RAP ROCK COST

SALE NAME: Rising Tide
PROJECT: Nos. 1 and 3
QUARRY: Tidewater Loop

ROCK TYPE: Riprap

DATE: 03/24/2008
BY: J. Long

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
I1-I2	59.92	36				2.00	1.20	0.50	0.10	3.80
I5-I6	21.10	220				1.50	0.60	0.50	0.10	2.70
I9-I11	28.75	220				0.80	0.40	0.20	0.10	1.50
I12-I13	22.80	190				0.50	0.40	0.20	0.10	1.20
C-D	14.80	556				1.00	1.00	0.23	0.10	2.33
G-H	12.20	920				0.30	0.17	0.10	0.10	0.67
I-J	38.67	20					0.40	0.20	0.10	0.70
TOTAL	198.24 STA./NO.	2,162 CU. YD.								
CUBIC YARD WEIGHTED HAUL						**0.70**	**0.49**	**0.20**	**0.10**	**AVERAGE HAUL 1.49**
						Average Round Trip Distance (miles)			2.97	

ROCK HAUL:

Truck type: D12 No. trucks:
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks: 2
Delay min.: 5 Efficiency: 85%

Ave haul: $2.46 /cy
Load: $1.29 /cy
Develop: ______ /cy

Production: cy/day = 475

RIP RAP ROCK HAUL COSTS 2,162 cy @ **$3.74 /cy**

PIT RUN ROCK COST

SALE NAME: Rising Tide
PROJECT: Nos. 1 and 3
QUARRY: Tidewater Loop Quarry
ROCK TYPE: Pit-Run
DATE: 03/24/2008
BY: J. Long

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
3A-3B	1.70	215				1.50	1.00	0.50	0.10	3.10
4A-4B	27.50	100				1.50	0.70	0.50	0.10	2.80
4C-4D	1.60	154				1.50	0.90	0.50	0.10	3.00
4E-4F	1.75	164				1.50	0.80	0.50	0.10	2.90
4G-4H	2.30	254				1.50	0.70	0.50	0.10	2.80
4I-4J	1.40	91				1.50	0.50	0.50	0.10	2.60
I5-I6	21.10	100				1.50	0.60	0.50	0.10	2.70
I9-I11	28.75	120				0.80	0.40	0.20	0.10	1.50
I12-I13	22.80	160				0.50	0.40	0.20	0.10	1.20
TOTAL	108.90 STA./NO.	1,358 CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL						**1.32**	**0.70**	**0.44**	**0.10**	**2.56**

Average Round Trip Distance (miles) 5.12

ROCK HAUL:

Truck type:	D20	No. trucks:	2
Delay min.:	8	Efficiency:	85%
Truck type:	D12	No. trucks:	
Delay min.:	6	Efficiency:	85%
Truck type:	D10	No. trucks:	2
Delay min.:	5	Efficiency:	85%

Ave haul:	$2.95	/cy
Load:	$0.45	/cy
Spread:	$0.78	/cy

Production: cy/day = 904

PIT RUN ROCK HAUL COSTS 1,358 cy @ **$4.19 /cy**

PIT RUN ROCK COST

SALE NAME: Rising Tide
PROJECT: No. 1
QUARRY: Swede Quarry

ROCK TYPE: Pit-Run

DATE: 03/24/2008
BY: J. Long

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
2A-2B	0.75	77						0.10	0.10	0.20
TOTAL	0.75 STA./NO.	77 CU. YD.								AVERAGE HAUL
CUBIC YARD WEIGHTED HAUL								0.10	0.10	0.20
						Average Round Trip Distance (miles)			0.40	

ROCK HAUL:

Truck type: D20 No. trucks:
Delay min.: 8 Efficiency: 85%

Truck type: D12 No. trucks: 1
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
Delay min.: 5 Efficiency: 85%

Ave haul: $1.04 /cy
Load: $0.78 /cy
Spread: $1.46 /cy

Production: cy/day = 562

PIT RUN ROCK HAUL COSTS 77 cy @ **$3.28 /cy**

RIP RAP ROCK COST

SALE NAME: Rising Tide
PROJECT: K to L
QUARRY: Tidewater Loop
ROCK TYPE: Riprap
DATE: 03/24/2008
BY: d.mellison

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
K to L	5+10	276	1	0	1	1.93	0.40	0.20	0.20	4.03
TOTAL		276								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL			**0.50**	**0.20**	**0.60**	**1.93**	**0.40**	**0.20**	**0.20**	**4.03**
								Average Round Trip Distance (miles)	8.06	

ROCK HAUL:

Truck type: D12 No. trucks:
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks: 4
Delay min.: 5 Efficiency: 85%

Ave haul: $4.45 /cy
Load: $1.01 /cy
Develop: $3.70 /cy

Production: cy/day = 524

RIP RAP ROCK HAUL COSTS 276 cy @ **$9.16 /cy**

RIP RAP ROCK COST

SALE NAME: Rising Tide
PROJECT: I17 to I18
QUARRY: Swede Road Quarry

ROCK TYPE: Riprap

DATE: 03/24/2008
BY: S. Bushnell

Road Segment	Station	Cubic Yards	ONE WAY HAUL IN MILES 50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	Total Haul
I17 to I18	1+50	112				1.00	0.50	0.40	0.20	2.10
I17 to I18	3+00	10				1.00	0.50	0.40	0.20	2.10
TOTAL		122								**AVERAGE HAUL**
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						**1.00**	**0.50**	**0.40**	**0.20**	**2.10**
						Average Round Trip Distance (miles)			4.20	

ROCK HAUL:

Truck type: D12 No. trucks: 3
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
Delay min.: 5 Efficiency: 85%

Ave haul: $2.95 /cy
Load: $0.41 /cy *
Develop: $3.70 /cy

Production: cy/day = 594

RIP RAP ROCK HAUL COSTS 122 cy @ **$7.06 /cy**

*($138 per hour * ((2 min per load * 10 loads / 60minutes per hour

RIP RAP ROCK COST

SALE NAME: Rising Tide
PROJECT: Hamilton Ck. Trib. Type F
QUARRY: . Tidewater Loop
ROCK TYPE: Rip Rap
DATE: 02/22/2008
BY: d.mellison

		Cubic Yards							
Segment	Stations	Dissapator	Armor	Footings				Misc	Total
Type F			387	30					417
Grand Total			387	30					417

Road Segment	Stations	Cubic Yards	ONE WAY HAUL IN MILES							Total Haul
			50 MPH	30 MPH	25 MPH	20 MPH	15 MPH	10 MPH	5 MPH	
Type F		417				2.90	0.24	0.10	0.10	3.34
TOTAL		417								AVERAGE HAUL
	STA./NO.	CU. YD.								
CUBIC YARD WEIGHTED HAUL						**2.90**	**0.24**	**0.10**	**0.10**	**3.34**
								Average Round Trip Distance (miles)		6.68

ROCK HAUL:

Truck type: D12 No. trucks: 3
Delay min.: 6 Efficiency: 85%

Truck type: D10 No. trucks:
Delay min.: 5 Efficiency: 85%

Ave haul: $3.34 /cy
Load: $1.01 /cy
Develop: /cy

Production: cy/day = 524

RIP RAP ROCK HAUL COSTS 417 cy @ **$4.35 /cy**

Road Maintenance after completion of Projects

Sale: Rising Tide
Date: 20-Mar-08
By: J. Long

Type	Equipment/Rationale			Hours	Rate	Cost	
	Grader 14G			32	$90	$2,880	
Final Haul	Dump Truck 12CY			8	$73	$584	
Road	FE Loader C966			8	$74	$592	
Maintenance	Vibratory Roller			32	$72	$2,304	
Haul Route	Water Truck 2,500 gallon			16	$78	$1,248	
Total							$7,608

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	4.8	3.2
Vibratory Roller	1.5	4.8	3.2

Road Maintenance Cost Summary

Sale: Rising Tide
Date: 07-Apr-08
By: J. McCoy

MBF: 10,410
$$/MBF: $3.13

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost
Progressive Operations 1st Entry	Grader 14G	$570	1	10	$90	$900
	Dump Truck 12CY x 2	$357	2	20	$73	$2,920
	FE Loader C966	$570	1	10	$74	$740
Progressive Operations 2nd Entry	Grader 14G	$570	1	10	$90	$900
	Dump Truck 12CY x 2	$357	2	20	$73	$2,920
	FE Loader C966	$570	1	10	$74	$740
Final Road Maintenance	Grader 14G	$570	1	60	$90	$5,400
	Dump Truck 12CY x 3	$357	3	45	$73	$9,855
	FE Loader C966	$570	1	20	$74	$1,480
	Vibratory Roller	$570	1	40	$72	$2,880
	Water Truck 2,500 gallon	$139	1	40	$78	$3,120
	Labor			20	$37	$740
Total						$32,595

Production Rates

Production Rates	Miles/day	Distance(miles)	Days
Grader	2.5	2.4	1.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	2.5	2.4	1.0

Production Rates	Miles/day	Distance(miles)	Days
Grader	1.5	8.0	5.3
Vibratory Roller*	1.5	5.4	3.6

*Final Road Maintenance Only

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Rising Tide
TIMBER CRUISE REPORT
FY 2008

1. **Sale Area Location:** Areas 1, 2, 3, 4, 5 R/W, and 6 R/W are located in portions of Sections 16, 17, 20, 21, 28, 29, and 32, T6N, R7W, W.M., Clatsop County, Oregon.

2. **Fund Distribution:** BOF 100%
   Tax Code 8-01 (100%)

3. **Sale Acreage by Area:**

Area	Treatment	Gross Acres	Existing R/W	New R/W	Non-Timber land	GTRA	Stream Buffer	Net Acres	Survey Method
1	Modified Clearcut	74.2	5.7	2.6	1.6	0	0.3	64.0	GIS
2	Modified Clearcut	55.3	0.3	0.2	0	2.0	0.8	52.0	GIS
3	Modified Clearcut	46.3	1.0	0.3	0	0	1.0	44.0	GIS
4	Modified Clearcut	83.0	5.8	2.9	0	0	4.3	70.0	GIS
5 R/W	In-Sale Right-of-way	6.0	0	0	0	0	0	6.0	GIS
6 R/W	Outside-Sale Right-of-way	8.0	0	0	0	0	0	8.0	GIS
TOTALS		**272.8**	**12.8**	**6.0**	**1.6**	**2.0**	**6.4**	**244**	

4. Cruisers and Cruise Dates: Areas 1, 2, 3, and 4 were cruised by Derek Bangs, Jon Long, Peter Stone, Jasen McCoy, Lanny Freeman, Dave Wolfgram, and Ty Wiliams, February 14, 2008.

5. Cruise Method and Computation:
Areas 1, 2, 3, and 4 are modified clearcut units and were variable plot cruised using a 40 BAF. These plots are located on a 3 chain by 9 chain grid, with every third plot measured and graded. A total of 94 plots were sampled, with 31 measured and graded plots, and 63 count plots. Cedar is a reserve species, and were recorded as "leave" trees.

Area 5 In-Sale R/W The right-of-way volume within the harvest areas was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 1 through 4. In-sale right-of-way totals 6 acres.

Area 6 Outside-Sale R/W The right-of-way volume outside the harvest areas was calculated by multiplying the R/W acreage and the average volume per acre from the plots in Areas 1 through 4. Outside-sale right-of-way totals 8 acres.

All cruisers used Corvallis MicroTechnology (CMT) and/or Allegro data collectors, and were downloaded to the Atterbury Super A.C.E. program in District for computing. See the attached Cruise Design for more details on the cruise method. The cruise calculations were processed in the Astoria district office.

AREA	CRUISE	TRACT	TYPE	ACRES
1, 2, 3, and 4	06N07W SEC 20	AREAS1234	TAKE	230
5 R/W	06N07W SEC 20	AREA 5	R/W	6
6 R/W	06N07W SEC 20	AREA 6	R/W	8

6. Timber Description Areas 1, 2, 3, and 4 are modified clearcut units, approximately 50 to 70 year-old, consisting of Douglas-fir, western hemlock, red alder, sitka spruce, and cedar. The average Douglas-fir tree size to be harvested is 20 inches DBH, with an average height of 66 feet to a merchantable top (6 inch d.i.b.). The

average hemlock tree size is 18 inches DBH and 75 feet to a merchantable top (6 inch d.i.b.). The average alder tree size is 15.4 inches DBH and 46 feet to a merchantable top (6 inch d.i.b.). The average volume per acre to be harvested (net) is 42.5 MBF.

Area 5 and 6 R/W is similar to the timber description mentioned above for Areas 1, 2, 3, and 4. The average volume (net) is approximately 44 MBF/acre.

7. Statistical Analysis and Stand Summary: (See "Statistics" - Type Reports, attached)

Statistics for Stand B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1, 2, 3, 4 (MC)	50%	8%	40.8%	4.2%

8. Volumes by Species and Log Grade: (See "Species, Sort, Grade - Type and Project Reports, attached, of individual sale areas and combined areas and two cruise types).
Volumes by Species and Grade for All Sale Areas: (MBF) Volumes do not include "in-growth."

Species	DBH	Net Vol.	2 Saw	3Saw	4 Saw	CampRun	% D & B	% Sale
Douglas-fir	20"	5,511	4,377	916	218	0	3%	53%
Hemlock/True-Fir	18"	3,944	2,511	1,213	220	0	2%	38%
Alder	16"	794	0	0	0	794	1%	7%
Spruce	32"	160	109	51	0	0	3%	1%
Cedar	24"	1	1	0	0	0	<1%	<1%
TOTALS		**10,410**	**6,998**	**2,180**	**438**	**794**		

9. Approvals:

Prepared by: Jasen McCoy **Date:** February 25, 2008

Unit Forester Approval: [signature] **Date:** April 7, 2008

10. Attachments:

Cruise Design - 2 pages
Cruise Maps- 2 pages
Volume Reports - 4 pages
Statistics Reports - 3 pages
Log Stock Tables – 3 pages

X:\Jewell_Unit\Timber Sales\2008\Rising Tide\Pre-sale\CruiseReport.doc

Revised August, 2002

CRUISE DESIGN
ASTORIA DISTRICT

Sale Name: Rising Tide **Area(s)** 1, 2, 3, and 4

Harvest Type: (MC) "Modified Clearcut"

Approx. Cruise Acres: 231 **Estimated CV%** 50 Net BF **SE% Objective** 8 Net BF

Planned Sale Volume : 7,500 MBF (All Sale Areas) **Estimated Sale Area Value/Acre:** $12,700/Ac (46 MBF/Ac.)

A. Cruise Goals: (a) Grade minimum 150 conifer:
(b) Sample 97 cruise plots (32 grade/ 65 count); (c) Other goals (____ Determine "automark" thinning standards; X Determine log grades for sale value; X Determine snag and leave tree species and sizes.

B. Cruise Design:

1. **Plot Cruises:** BAF 40 (Full point; Half point) (circle one)
   Cruise Line Direction(s) AZ= 90° (West/East)
   Cruise Line Spacing 9 (chains)
   Cruise Plot Spacing 3 (chains)
   Grade/Count Ratio 1/2

All merch. Cedar (8" or >) and marked wildlife trees are leave trees and are recorded as leave trees. Record Alder as camprun. Record snags (SN) as cull and estimate height and top diameter. Do not take plots in buffers.

C. Tree Measurements:

1. **Diameter:** Minimum DBH to cruise is 8" for conifers and 10" for hardwoods. Record dbh to nearest ½" for trees < 16", to nearest 1" for trees 16-24", and to nearest 2" for trees > 24". If tree diameters are estimated (only estimate on variable plot cruises), then record to closest estimate.

2. **Bole Length:** Record bole length to nearest foot at TCD. For trees greater than 100 feet in merchantable height, estimating to the nearest 5 feet is acceptable.

3. **Top Cruise Diameter (TCD):** Minimum top outside bark is 7" for conifers and 7" for hardwoods or 40 % of dob at 16' form point. Generally, use 7" outside bark for trees < 18" dbh and 40% of dob @ FP for trees > 18" dbh.

4. **Form Factors:** (1) Measure or estimate a 16' form factor for every conifer tree measured/graded; OR (2) Measure a minimum of 20 form factors for each major conifer species on the cruise area, and use these to calculate average FF for the species on the cruise. Hardwood form factors are a Standard 87.

5. **Tree Segments:** Record log segments in "standard" log lengths in general use, such as 32' and 40' lengths, whenever possible. Do not record odd segments just to maximize grade. Cull segments can be any length. For conifers, minimum merchantable segment length is 12'; for hardwoods, it's 8'. Maximum segment length is 40'. One foot of trim is assumed for each merch. segment. Do not use "double dash" (--) feature on the data recorder except for the top segment of the tree.

6. **Species, Sort, and Grade Codes:**

A. Species: Record as D (Douglas-fir); H (Western hemlock); S (Sitka Spruce); C (Western red cedar); NF (Noble fir); SF (Silver fir); A (Red alder); M (Bigleaf maple). For "leave trees" in partial cuts, or for marked "wildlife trees," add an "L" to the species code (such as DL, HL, CL, etc.)

B. Sort: Use code "1" (Domestic).

C. Grade: A = 1 Peeler; B = 2 Peeler; C = 3 Peeler; D = Special Mill; 2 = 2 Sawmill; 3 = 3 Sawmill; 4 = 4 Sawmill; R = Camprun; 0 = Cull

7. **Deductions:** Estimate visible defect or damage as a "length deduction" (most often), or as a "diameter deduction," as applicable. Estimate hidden defect and breakage (usually some breakage is encountered in trees > 100 feet in height) on a "per tree" basis. Steep and broken topography generally results in higher breakage percentages than gentler topography, and hemlock generally breaks more than D-fir and spruce.

8. **Standard Field Procedures:** Plot Type Cruises: Mark cruise line beginning and end points with blue/yellow flagging. Write plot identification numbers and line direction on the ribbon. At each plot, tie yellow flagging above eye level near plot center and another yellow flagging around a sturdy wooden stake marking plot center. On each yellow flagging, write the plot identification number. Between plots, along the cruise line, tie blue flagging at inter-visible points, not to exceed 100' apart. On "measure/grade" plots write the tree number and/or tree diameter on at least the first measured tree (clockwise from the line direction) in yellow paint. All trees on the plot may be marked this way, if the cruiser chooses.

9. **Cruising Equipment:** Relaskop, Rangefinder, Logger's Tape (with dbh on back) Biltmore Stick, Compass, Cruise Cards in Tatum OR Data Recorder, Cruise Design, Cruise Map, Yellow Flagging, Blue Flagging, Yellow Paint.

10. **Attachments:** A. Cruise Map (showing cruise unit boundaries, roads, streams, approx. acres/unit, cruise lines and plot locations, legal description and section lines, BAF or plot size, measure/count plot ratio, north arrow, and scale.

Cruise Design by: Jasen McCoy
Approved by: _____
Date: 1/18/08

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TC PSPCSTGR

Species, Sort Grade - Board Foot Volumes (Project)

TT6N RR7W S20 TyR/W	6.00
TT6N RR7W S20 TyR/W	8.00
TT6N RR7W S20 TyTAK	230.00

Project: RSNTIDE
Acres 244.00

Page 1
Date 3/11/2008
Time 7:51:46AM

Spp	S T	So Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
H		DOCU														9		0.00	7.9
H		DO2S	63	2.6	10,559	10,289	2,510		4	65	31		3	41	57	36	285	1.81	36.1
H		DO3S	31	.3	4,985	4,971	1,213		90	10		0	2	54	44	35	94	0.77	53.0
H		DO4S	6		901	901	220	3	97			35	30	16	19	23	31	0.43	28.7
H	**Totals**		38	1.7	16,445	16,161	3,943	0	36	44	20	2	4	43	51	31	129	1.05	125.7
A		DOCU														6		0.00	3.9
A		DOCR	100	.6	3,274	3,255	794		70	23	7	10	26	40	24	28	86	0.89	38.0
A	**Totals**		8	.6	3,274	3,255	794		70	23	7	10	26	40	24	26	78	0.87	41.9
D		DOCU														13		0.00	4.3
D		DO2S	79	3.3	18,549	17,940	4,377		1	41	58		0	31	69	37	396	2.35	45.3
D		DO3S	17	.7	3,784	3,756	916		92	8		2	11	31	56	34	80	0.77	47.0
D		DO4S	4	.6	895	890	217		100	0		28	55	17		23	34	0.51	26.2
D	**Totals**		53	2.8	23,228	22,586	5,511		20	34	46	1	4	30	64	32	184	1.39	122.8
C		DO2S	74		2	2	0			100				100		32	230	2.59	.0
C		DO3S	10		0	0	0		100			100				16	30	0.75	.0
C		DO4S	16		0	0	0	100					100			23	10	0.43	.0
C	**Totals**		0		2	2	0	15	10	75		10	15	75		23	46	0.91	.0
S		DOCU														10		0.00	.2
S		DO2S	68	3.8	466	448	109				100			64	36	36	720	4.27	.6
S		DO3S	32		207	207	51		27	11	61	3	68	1	27	32	226	2.09	.9
S	**Totals**		2	2.7	673	656	160		9	4	88	1	22	44	33	30	371	2.91	1.8
NF		DOCU														10		0.00	.0
NF		DO2S	83		3	3	1			100					100	40	360	1.88	.0
NF		DO3S	17		1	1	0		100					100		32	70	0.88	.0
NF	**Totals**		0		3	3	1		16	84				16	84	27	143	1.26	.0
Totals				2.2	43,626	42,663	10,410	0	30	36	34	2	6	36	56	31	146	1.19	292.2

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: RSNTIDE

Page 1
Date 3/11/2008
Time 7:42:52AM

TT6N RR7W S20 TTAKE

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
T6N	R7W	20	AREAS 1 2 3	TAKE	230.00	94	195	1	W

TT6N RR7W S20 TTAKE

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU														13		0.00	4.3
D		DO	2S	79	3.3	18,510	17,899	4,117		1	41	58		0	30	70	37	396	2.35	45.2
D		DO	3S	17	.7	3,782	3,754	863		91	9		2	11	31	56	34	80	0.77	46.9
D		DO	4S	4	.6	897	892	205		100			28	55	17		23	34	0.51	26.3
D	**Totals**			53	2.8	23,189	22,545	5,185		20	34	46	1	4	30	65	32	184	1.39	122.7
H		DO	CU														9		0.00	7.9
H		DO	2S	63	2.6	10,521	10,250	2,357		4	65	31		2	40	57	36	284	1.81	36.0
H		DO	3S	31	.3	4,984	4,970	1,143		90	10			2	55	44	35	94	0.77	53.1
H		DO	4S	6		894	894	206	3	97			35	30	16	19	23	31	0.43	28.6
H	**Totals**			38	1.7	16,399	16,114	3,706	0	36	45	19	2	4	43	51	31	128	1.05	125.5
A		DO	CU														6		0.00	3.9
A		DO	CR	100	.6	3,280	3,261	750		70	23	7	10	25	40	24	28	86	0.89	38.1
A	**Totals**			8	.6	3,280	3,261	750		70	23	7	10	25	40	24	26	78	0.87	42.0
S		DO	CU														10		0.00	.2
S		DO	2S	68	3.8	466	448	103				100			64	36	36	720	4.27	.6
S		DO	3S	32		208	208	48		28	10	62		72		28	32	227	2.09	.9
S	**Totals**			2	2.7	674	656	151		9	3	88		23	44	34	30	371	2.90	1.8
Type Totals					2.2	43,542	42,576	9,793	0	30	37	34	2	6	36	56	31	146	1.19	292.0

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: RSNTIDE

Page 1
Date 3/11/2008
Time 7:42:37AM

TT6N RR7W S20 TR/W

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
T6N	R7W	20	AREA 5	R/W	6.00	94	207	1	W

TT6N RR7W S20 TR/W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU														13		0.00	4.4
D		DO	2S	80	3.0	19,195	18,621	112		1	40	59		0	35	65	37	400	2.38	46.5
D		DO	3S	16	.7	3,811	3,784	23		92	8		2	13	31	55	34	79	0.78	47.8
D		DO	4S	4	.6	857	852	5		98	2		28	55	17		23	34	0.51	25.0
D	**Totals**			53	2.5	23,863	23,257	140		19	33	47	1	4	34	61	32	188	1.42	123.8
H		DO	CU														9		0.00	7.8
H		DO	2S	64	2.3	11,184	10,923	66		4	59	37		3	49	48	35	292	1.86	37.4
H		DO	3S	30	.3	5,007	4,992	30		91	9		0	4	53	43	35	95	0.79	52.5
H		DO	4S	6		1,012	1,012	6	3	97			33	28	22	17	23	32	0.45	31.3
H	**Totals**			38	1.6	17,203	16,927	102	0	35	41	24	2	5	49	45	30	131	1.07	129.0
A		DO	CU														6		0.00	3.8
A		DO	CR	100	.6	3,177	3,158	19		67	26	7	10	34	32	25	29	85	0.88	37.0
A	**Totals**			7	.6	3,177	3,158	19		67	26	7	10	34	32	25	27	77	0.86	40.8
S		DO	CU														10		0.00	.2
S		DO	2S	69	3.8	466	448	3				100			64	36	36	720	4.27	.6
S		DO	3S	31		199	199	1		14	32	54	54	11	22	14	30	217	2.11	.9
S	**Totals**			1	2.7	665	647	4		4	10	86	17	3	51	29	29	366	2.94	1.8
C		DO	2S	74		27	27	0			100				100		32	230	2.59	.1
C		DO	3S	10		3	3	0		100			100				16	30	0.75	.1
C		DO	4S	16		5	5	0	100					100			23	10	0.43	.5
C	**Totals**			0		35	35	0	15	10	75		10	15	75		23	46	0.91	.8
NF		DO	CU														10		0.00	.1
NF		DO	2S	83		49	49	0			100					100	40	360	1.88	.1
NF		DO	3S	17		9	9	0		100					100		32	70	0.88	.1
NF	**Totals**			0		58	58	0		16	84				16	84	27	143	1.26	.4
Type Totals					2.0	45,001	44,083	264	0	29	35	36	2	6	40	52	31	149	1.21	296.5

T TSPCSTGR

Species, Sort Grade - Board Foot Volumes (Type)

Project: RSNTIDE

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TT6N RR7W S20 TR/W

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
T6N	R7W	20	AREA 6	R/W	8.00	94	207	1	W

TT6N RR7W S20 TR/W

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
D		DO	CU														13		0.00	4.4
D		DO	2S	80	3.0	19,195	18,621	149		1	40	59		0	35	65	37	400	2.38	46.5
D		DO	3S	16	.7	3,811	3,784	30		92	8		2	13	31	55	34	79	0.78	47.8
D		DO	4S	4	.6	857	852	7		98	2		28	55	17		23	34	0.51	25.0
D	**Totals**			53	2.5	23,863	23,257	186		19	33	47	1	4	34	61	32	188	1.42	123.8
H		DO	CU														9		0.00	7.8
H		DO	2S	64	2.3	11,184	10,923	87		4	59	37		3	49	48	35	292	1.86	37.4
H		DO	3S	30	.3	5,007	4,992	40		91	9		0	4	53	43	35	95	0.79	52.5
H		DO	4S	6		1,012	1,012	8	3	97			33	28	22	17	23	32	0.45	31.3
H	**Totals**			38	1.6	17,203	16,927	135	0	35	41	24	2	5	49	45	30	131	1.07	129.0
A		DO	CU														6		0.00	3.8
A		DO	CR	100	.6	3,177	3,158	25		67	26	7	10	34	32	25	29	85	0.88	37.0
A	**Totals**			7	.6	3,177	3,158	25		67	26	7	10	34	32	25	27	77	0.86	40.8
S		DO	CU														10		0.00	.2
S		DO	2S	69	3.8	466	448	4				100			64	36	36	720	4.27	.6
S		DO	3S	31		199	199	2		14	32	54	54	11	22	14	30	217	2.11	.9
S	**Totals**			1	2.7	665	647	5		4	10	86	17	3	51	29	29	366	2.94	1.8
C		DO	2S	74		27	27	0			100				100		32	230	2.59	.1
C		DO	3S	10		3	3	0		100			100				16	30	0.75	.1
C		DO	4S	16		5	5	0	100					100			23	10	0.43	.5
C	**Totals**			0		35	35	0	15	10	75		10	15	75		23	46	0.91	.8
NF		DO	CU														10		0.00	.1
NF		DO	2S	83		49	49	0			100					100	40	360	1.88	.1
NF		DO	3S	17		9	9	0		100					100		32	70	0.88	.1
NF	**Totals**			0		58	58	0		16	84				16	84	27	143	1.26	.4
Type Totals					2.0	45,001	44,083	353	0	29	35	36	2	6	40	52	31	149	1.21	296.5

TC PSTATS

PROJECT STATISTICS

PROJECT RSNTIDE

DATE 3/11/2008

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
T6N	R7	20	AREAS 1 2 3	TAKE	230.00	94	641	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	94	641	6.8		
CRUISE	31	195	6.3	32,480	.6
DBH COUNT					
REFOREST					
COUNT	63	446	7.1		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	85	62.0	20.3	66		140.0	23,189	22,545	5,503	5,503
WHEMLOCK	76	53.6	18.1	75		96.2	16,399	16,114	4,063	4,063
R ALDER	31	24.9	15.4	46		32.3	3,280	3,261	949	949
S SPRUCE	3	.7	31.9	80		3.8	674	656	156	156
TOTAL	*195*	*141.2*	*18.8*	*66*		*272.3*	*43,542*	*42,576*	*10,671*	*10,671*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	72.8	7.9	566	615	663			
WHEMLOCK	72.3	8.3	381	415	450			
R ALDER	68.6	12.3	145	165	186			
S SPRUCE	66.3	45.9	583	1,077	1,571			
TOTAL	*84.6*	*6.1*	*444*	*473*	*501*	*286*	*71*	*32*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	97.9	10.1	56	62	68			
WHEMLOCK	103.0	10.6	48	54	59			
R ALDER	224.1	23.1	19	25	31			
S SPRUCE	345.0	35.6	0	1	1			
TOTAL	*41.0*	*4.2*	*135*	*141*	*147*	*67*	*17*	*7*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	93.3	9.6	127	140	153			
WHEMLOCK	101.2	10.4	86	96	106			
R ALDER	209.4	21.6	25	32	39			
S SPRUCE	344.8	35.5	2	4	5			
TOTAL	*36.8*	*3.8*	*262*	*272*	*283*	*54*	*13*	*6*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	92.8	9.6	20,390	22,545	24,700			
WHEMLOCK	103.6	10.7	14,394	16,114	17,834			
R ALDER	211.0	21.7	2,552	3,261	3,970			
S SPRUCE	356.2	36.7	415	656	897			
TOTAL	*40.8*	*4.2*	*40,787*	*42,576*	*44,366*	*66*	*17*	*7*

TC PSTATS

PROJECT STATISTICS

PROJECT RSNTIDE

DATE 3/11/2008

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
T6N	R7	20	AREA 5	R/W	6.00	94	666	1	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	94	666	7.1		
CRUISE	32	207	6.5	863	24.0
DBH COUNT					
REFOREST					
COUNT	62	450	7.3		
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	91	62.6	20.6	66		144.7	23,863	23,257	5,644	5,644
WHEMLOCK	78	54.8	18.3	74		100.4	17,203	16,927	4,214	4,214
R ALDER	32	24.9	15.5	45		32.8	3,177	3,158	935	935
S SPRUCE	3	.7	31.9	80		3.8	665	647	153	153
WR CEDAR	2	.7	15.4	29		.9	35	35	16	16
NOB FIR	1	.1	24.0	85	0	.4	58	58	14	14
TOTAL	*207*	*143.8*	*19.0*	*65*		*283.0*	*45,001*	*44,083*	*10,976*	*10,976*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	73.6	7.7	582	630	679			
WHEMLOCK	78.8	8.9	410	450	490			
R ALDER	72.4	12.8	139	159	180			
S SPRUCE	68.2	47.2	562	1,063	1,565			
WR CEDAR	130.9	122.6		135	301			
NOB FIR								
TOTAL	*86.7*	*6.0*	*461*	*490*	*520*	*300*	*75*	*33*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	95.5	9.8	56	63	69			
WHEMLOCK	101.2	10.4	49	55	60			
R ALDER	224.4	23.1	19	25	31			
S SPRUCE	377.5	38.9	0	1	1			
WR CEDAR	815.4	84.0	0	1	1			
NOB FIR	969.5	99.9	0	0	0			
TOTAL	*37.9*	*3.9*	*138*	*144*	*149*	*57*	*14*	*6*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	89.5	9.2	131	145	158			
WHEMLOCK	98.7	10.2	90	100	111			
R ALDER	208.7	21.5	26	33	40			
S SPRUCE	377.3	38.9	2	4	5			
WR CEDAR	681.9	70.3	0	1	1			
NOB FIR	969.5	99.9	0	0	1			
TOTAL	*32.0*	*3.3*	*274*	*283*	*292*	*41*	*10*	*5*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	88.9	9.2	21,127	23,257	25,387			
WHEMLOCK	100.8	10.4	15,169	16,927	18,686			
R ALDER	215.4	22.2	2,457	3,158	3,859			
S SPRUCE	389.3	40.1	387	647	906			

PROJECT STATISTICS

PROJECT RSNTIDE

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
T6N	R7	20	AREA 5	R/W	6.00	94	666	1	W

CL 68.1
SD: 1.00

	COEFF VAR.	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
WR CEDAR	833.0	85.8	5	35	66			
NOB FIR	969.5	99.9	0	58	116			
TOTAL	*37.0*	*3.8*	*42,404*	*44,083*	*45,762*	*55*	*14*	*6*

TC PLOGSTVB

Log Stock Table - MBF

TT6N RR7W S20 TyR/W	6.00
TT6N RR7W S20 TyR/W	8.00
TT6N RR7W S20 TyTAK	230.00

Project: RSNTIDE
Acres 0.00

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Spp	S T	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
H		DO	2S	24	1		1	.0								1				
H		DO	2S	26	30	10.5	27	.7							27					
H		DO	2S	30	36	2.5	35	.9								35				
H		DO	2S	32	1,014	2.7	987	25.0					62	296	196	137	238	58		
H		DO	2S	34	32		32	.8							32					
H		DO	2S	40	1,464	2.4	1,429	36.2					40	333	529	346	182			
H		DO	3S	14	0		0	.0						0						
H		DO	3S	24	11		11	.3				4		6						
H		DO	3S	27	6		6	.1				5	0							
H		DO	3S	28	0		0	.0			0									
H		DO	3S	30	6		6	.1			6									
H		DO	3S	31	6		6	.2				6								
H		DO	3S	32	619		618	15.7			144	134	259	81						
H		DO	3S	33	15		15	.4			15									
H		DO	3S	34	7		7	.2			7									
H		DO	3S	35	15		15	.4				15								
H		DO	3S	36	32	5.9	30	.8			26	4	0							
H		DO	3S	38	16		16	.4			8	7								
H		DO	3S	40	483		483	12.3			96	161	190	20	17					
H		DO	4S	12	8		8	.2			8									
H		DO	4S	15	8		8	.2		4	3									
H		DO	4S	16	28		28	.7		3	12	9	4							
H		DO	4S	17	0		0	.0				0								
H		DO	4S	19	10		10	.2			4	6								
H		DO	4S	20	23		23	.6			23									
H		DO	4S	21	8		8	.2			5	3								
H		DO	4S	22	17		17	.4			17									
H		DO	4S	24	24		24	.6			24									
H		DO	4S	26	12		12	.3			12									
H		DO	4S	28	5		5	.1			5									
H		DO	4S	32	35		35	.9			35									
H		DO	4S	40	42		42	1.1			42									
H		Totals			4,013	1.7	3,943	37.9		7	493	356	555	735	801	519	420	58		
A		DO	CR	12	7		7	.9					7							
A		DO	CR	16	40		40	5.1			28	3	9							
A		DO	CR	20	34		34	4.3			13				21					
A		DO	CR	21	5		5	.6			5									

TC PLOGSTVB

Log Stock Table - MBF

TT6N RR7W S20 TyR/W	6.00
TT6N RR7W S20 TyR/W	8.00
TT6N RR7W S20 TyTAK	230.00

Project: RSNTIDE
Acres 0.00

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Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
A		DO	CR	22	6		6	.8				6								
A		DO	CR	24	17		17	2.1			1		14	1		1				
A		DO	CR	25	11	25.0	8	1.0			8									
A		DO	CR	26	39		39	4.9			16	0	23							
A		DO	CR	28	40		40	5.0			14				26					
A		DO	CR	29	0		0	.0				0								
A		DO	CR	30	90		90	11.3			10	4	49		26					
A		DO	CR	32	314		314	39.5			34	45	102	79	30	24				
A		DO	CR	36	11		11	1.4			11									
A		DO	CR	40	184		182	23.0			43	51	57			32				
A		Totals			799		794	7.6			184	109	261	81	102	57				
D		DO	2S	28	9		9	.2					9							
D		DO	2S	32	1,294	1.4	1,276	23.2						214	107	581	257	117		
D		DO	2S	34	61		61	1.1							40	22				
D		DO	2S	40	3,161	4.1	3,030	55.0					54	336	626	875	758	381		
D		DO	3S	16	8		8	.1					8							
D		DO	3S	20	10		10	.2					10							
D		DO	3S	21	18		18	.3				4	14							
D		DO	3S	22	5		5	.1			5	0								
D		DO	3S	24	24		24	.4				11	14							
D		DO	3S	26	33		33	.6			5	27								
D		DO	3S	30	24		24	.4				15	9							
D		DO	3S	32	233	2.5	227	4.1			89	84	55							
D		DO	3S	34	53		53	1.0			22		31							
D		DO	3S	36	39		39	.7			20	9	1	10						
D		DO	3S	38	30		30	.5			20	10								
D		DO	3S	40	447		446	8.1			145	140	92	68						
D		DO	4S	12	2		2	.0			2									
D		DO	4S	13	3		3	.1			3									
D		DO	4S	16	33		33	.6			25	7		0						
D		DO	4S	18	10		10	.2				4	5							
D		DO	4S	19	2		2	.0			1		0							
D		DO	4S	20	12		12	.2			3	5	5							
D		DO	4S	22	11		11	.2			6	5								
D		DO	4S	24	55		55	1.0			50		6							
D		DO	4S	26	6		6	.1			6									
D		DO	4S	28	30	4.3	28	.5			28									

TC PLOGSTVB

Log Stock Table - MBF

TT6N RR7W S20 TyR/W	6.00
TT6N RR7W S20 TyR/W	8.00
TT6N RR7W S20 TyTAK	230.00

Project: RSNTIDE
Acres 0.00

Date 3/11/2008
Time 7:43:40AM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
D		DO	4S	29	6		6	.1			6									
D		DO	4S	30	13		13	.2			13									
D		DO	4S	32	36		36	.7			36									
D		Totals			5,668	2.8	5,511	52.9			485	322	313	628	773	1478	1015	498		
C		DO	2S	32	0		0	74.9							0					
C		DO	3S	16	0		0	9.8			0									
C		DO	4S	23	0		0	15.3	0											
C		Totals			0		0	.0	0		0				0					
S		DO	2S	32	70		70	43.8									24	46		
S		DO	2S	40	44	10.0	39	24.6								39				
S		DO	3S	20	2		2	.9									2			
S		DO	3S	22	5		5	3.2						5						
S		DO	3S	24	29		29	18.4									29			
S		DO	3S	32	1		1	.4						1						
S		DO	3S	36	7		7	4.6					7							
S		DO	3S	40	7		7	4.1				7								
S		Totals			164	2.7	160	1.5				7	7	6		39	55	46		
NF		DO	2S	40	1		1	83.7							1					
NF		DO	3S	32	0		0	16.3				0								
NF		Totals			1		1	.0				0			1					
Total		All Species			10,645	2.2	10,410	100.0	0	7	1161	794	1135	1450	1677	2093	1490	601		

LEGEND

- Timber Sale Boundary
- Landings To Be Constructed
- Paved Road
- Surfaced Existing Road
- New Construction Road
- Property Line
- Known Land Survey Corner
- Type F Stream
- Type N Stream
- Posted Stream Buffer
- Reforestation Area
- Buffer Zone
- Controlled Felling
- Green Tree Retention Area
- Seasonally Restricted Road
- T Tractor Logging Area
- Cable Logging Area

Logging Plan

OF TIMBER SALE CONTRACT NO. 341-09-25
RISING TIDE
PORTIONS OF SECTIONS
17, 20, 28, 29, AND 32, T6N, R7W,
W.M., CLATSOP COUNTY, OREGON

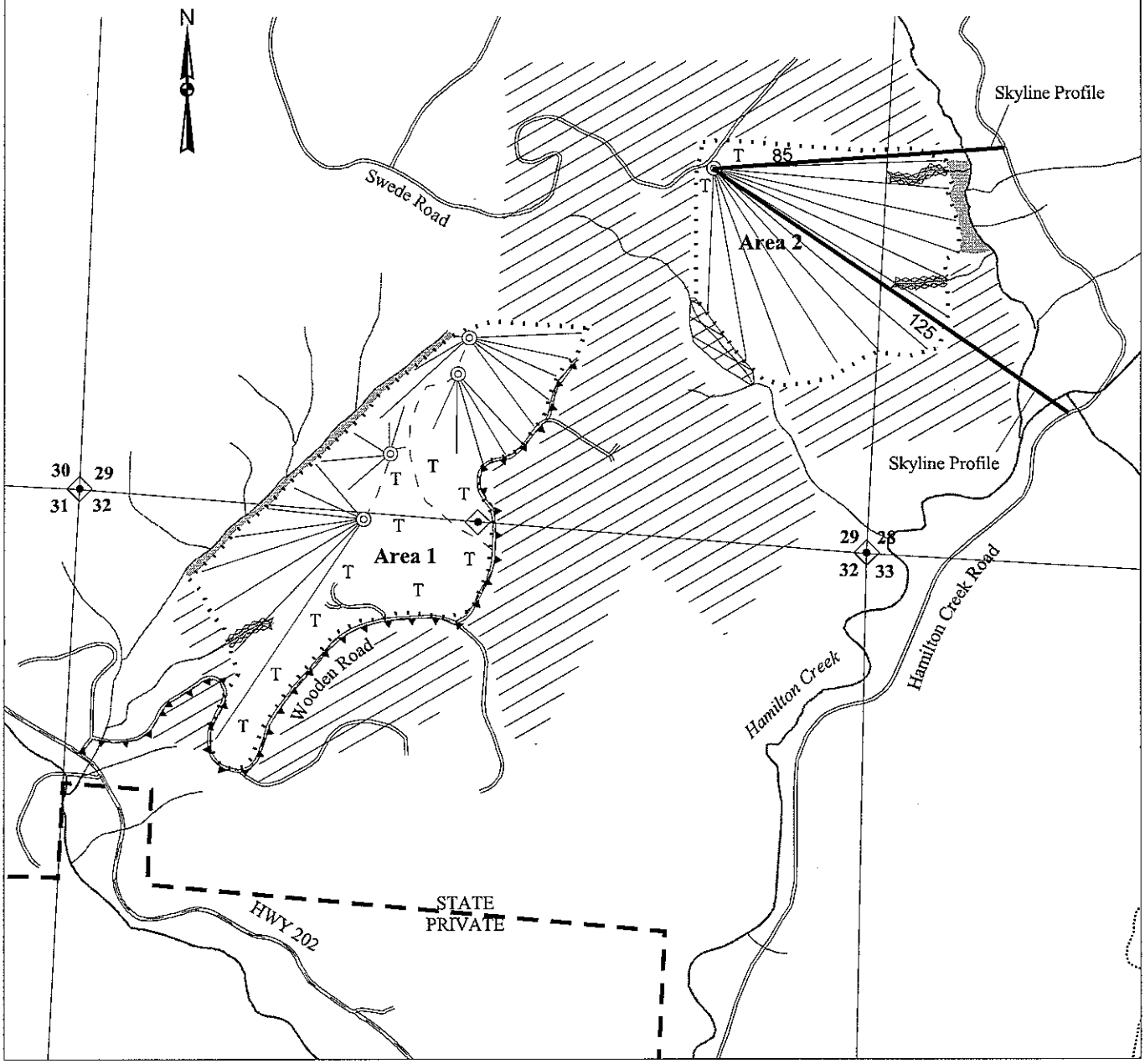
500 0 500 1000 Feet

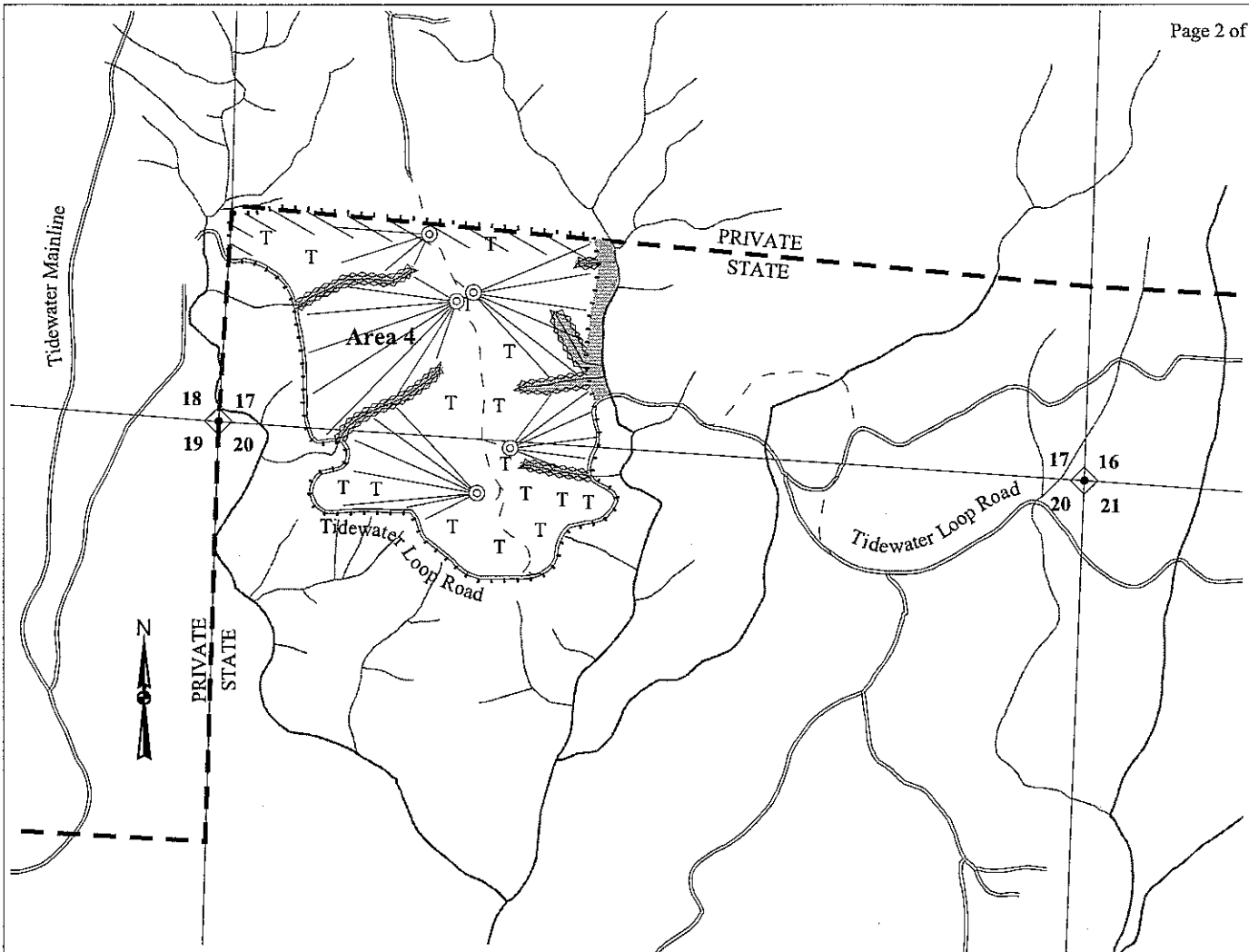
Approximate Scale= 1":1,000'

Approximate Net Acreage:

Area 1 (MC) -	64 Acres
Area 2 (MC) -	52 Acres
Area 3 (MC) -	44 Acres
Area 4 (MC) -	70 Acres
Area 5 (R/W) -	6 Acres
Area 6 (Out of Sale R/W)-	8 Acres
Total Sale Acreage	244 Acres

Logging Breakdown		
	Cable	Tractor
Area 1	50%	50%
Area 2	98%	2%
Area 3	98%	2%
Area 4	57%	43%
Area 5	0%	100%
Area 6	0%	100%
Total	68%	32%





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PORTIONS OF SECTIONS
17, 20, 28, 29, AND 32, T6N, R7W,
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LEGEND

- Timber Sale Boundary
- Landings To Be Constructed
- Seasonal Restricted Road
- Paved Road
- Surfaced Existing Road
- New Construction Road
- Right of Way Boundary
- Property Line
- Known Land Survey Corner
- Type F Stream
- Type N Stream
- Posted Stream Buffer
- Reforestation Area
- Buffer Zone
- Controlled Felling
- Quarry
- Stockpile
- Waste Area
- Pt. "A" Project Points
- Registered Water Use Site
- Green Tree Retention Area

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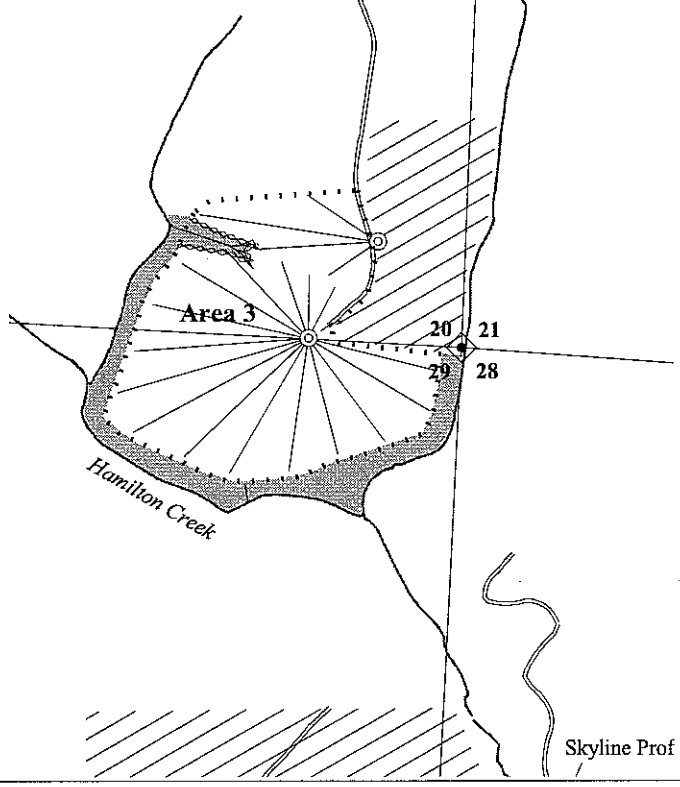

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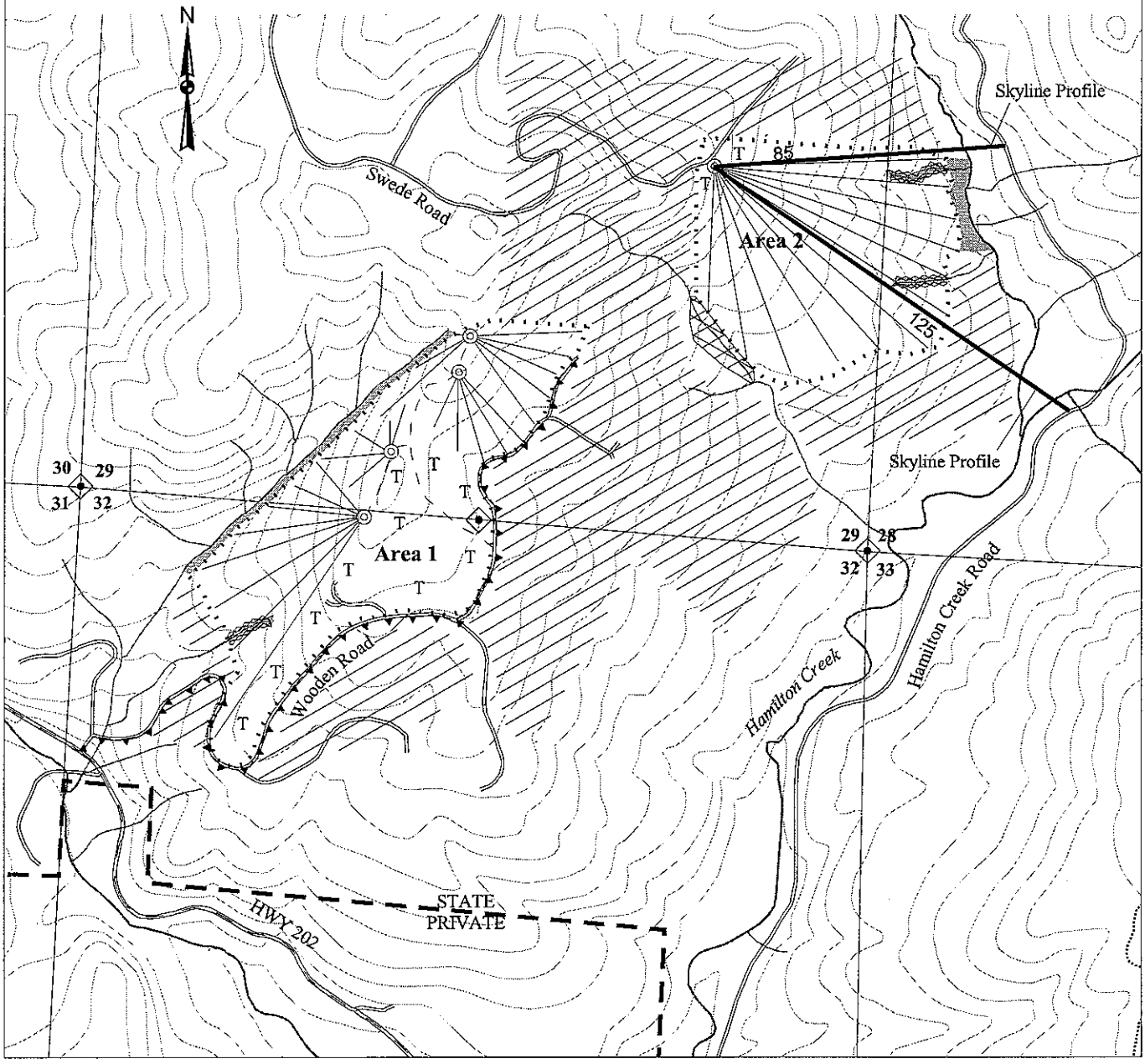

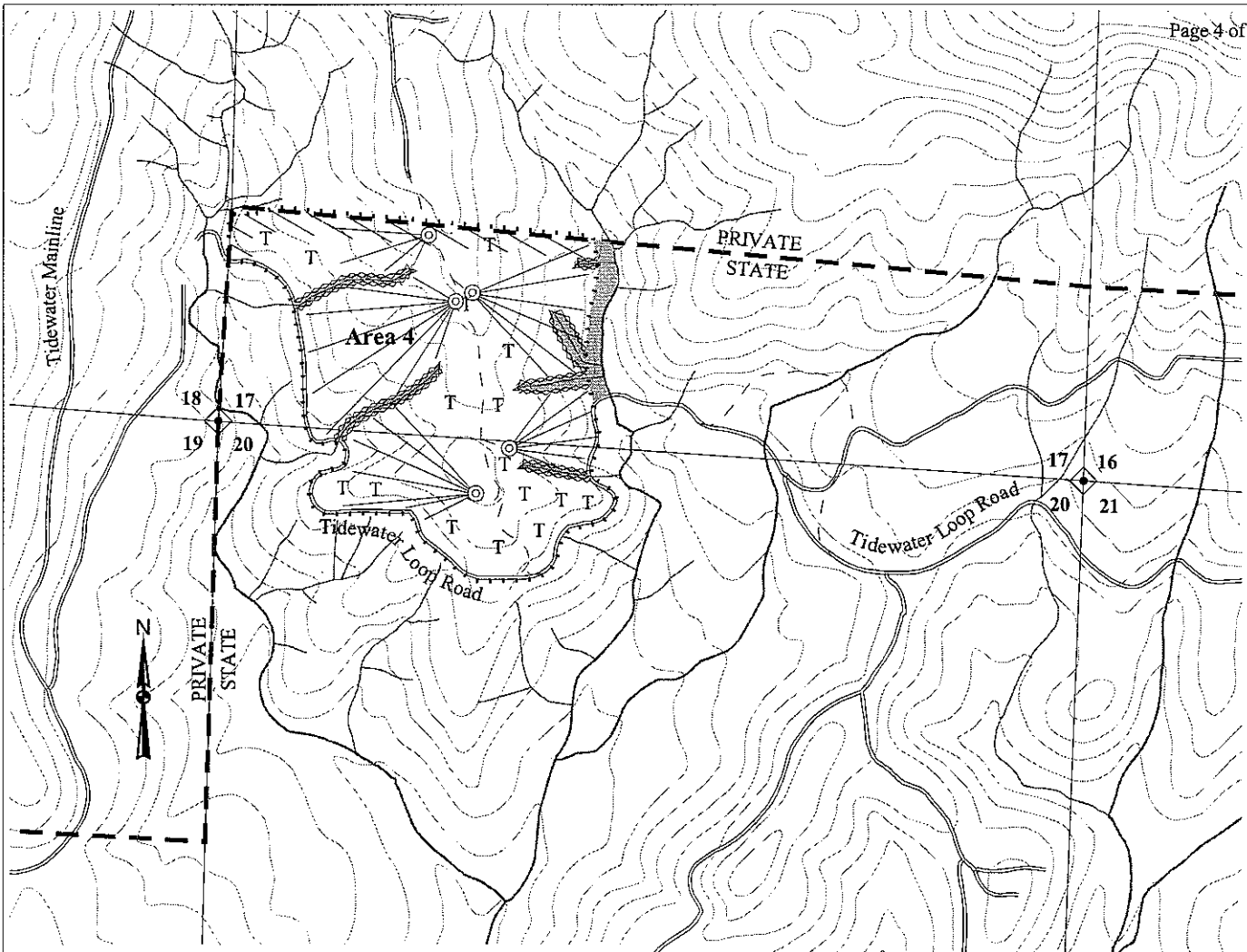

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