

# Timber Sale Appraisal Cost Summary Foster Divide Combination Sale 341-03-21

District: Astoria

**Date:** 4/14/03

		Conifer	Hardwood	Total
Gross	Timber	\$3,230,704.28	\$637,194.63	\$3,867,898.91
Sale \	/alue			
			Project Work	(\$471,421.00)
		Ad	lvertised Value	\$3,396,477.91



# Timber Sale Appraisal Timber Description Foster Divide Combination Sale 341-03-21

"STEWARDSHIP IN FORESTRY"

District: Astoria

Location: Portions of Sections 31 & 32, T7N, R6W and Portions of Sections 5, 6, 8, 9, & 16, T6N, R6W,

W.M., Clatsop County, Oregon

**Date:** 4/14/03

Stand Stocking: 60%

Species	Avg. DBH	Amortized%	Recovery%
Douglas - Fir	19	0	97
Western Hemlock / Fir	15	0	97
Alder (Red)	14	0	95
Maple	17	0	95

Volume by Grade	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Maple	Total	
28	5,792	158	0	0	5,950	
38	2,385	429	1,440	0	4,254	
45	414	53	354	7	828	
Total	8,591	640	1,794	7	11,032	

Comments: Pond Values Used: 1st Quarter 2003

Log Markets: Mist, Clatskanine, Tillamook

Additional Costs with P&R:

100% branding and painting: \$1/MBF x 11,032 MBF = \$11,032

Additional cutting costs for thinning (bucking tops, topping/girdling tail lift trees, etc.):

 $5/MBF \times 5,965 MBF = $29,825$ 

Additional costs for cable corridor layout:  $$3/MBF \times 5,965 = $17,895$ 

Placement of logs in Northrup Creek for stream enhancement:  $50 \log x \$60/\log = \$3,000$ .

Total Cost w/P&R = \$61,752

#### Costs without P&R:

Vacating dirt spur 7A to 7B after slash piling: \$45/station x 10.5 stations = \$473 Slash piling at Areas 2, 5, 6B, & 7 cable landings: \$65/landing x 18 landings = \$1,170.00 Slash piling in Areas 2, 5, 6B, & 7: 163 hrs x \$95/hr + \$1,000(two mobilizations) = \$16,485 Total Non-P&R Costs = \$18,128

3

4/14/03



### **Timber Sale Appraisal Logging Conditions Foster Divide Combination** Sale 341-03-21

"STEWARDSHIP IN FORESTRY"

Combination#: 1

Douglas - Fir

44.73%

Western Hemlock / Fir

80.46%

Alder (Red)

29.76%

Yarding Distance: Medium (800 ft)

Downhill Yarding: No

Logging System: Tree Size:

Cable: Medium Tower >40 - <70

Process: Manual Delimbing

Small / Thinning 12in (130 Bft/tree), 12-17 logs/MBF

Loads/Day:

Bd. Ft./Load: 4,000

Cost/MBF: \$138.19

Machines:

Log Loader (A)

Tower Yarder (Medium)

Combination#: 2

Douglas - Fir

9.82%

Western Hemlock / Fir

17.66%

Alder (Red)

6.53%

Yarding Distance: Short (400 ft)

Downhill Yarding: Yes

Logging System:

Shovel

Process: Manual Delimbing

Tree Size:

Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

Bd. Ft./Load: 4,000

Loads/Day: Cost/MBF:

\$96.74

Machines:

Shovel Logger

Combination#: 3

Douglas - Fir

27.27%

Western Hemlock / Fir

1.13%

Alder (Red)

38.23%

Yarding Distance: Short (400 ft)

Maple

60.00%

Logging System:

Cable: Medium Tower >40 - <70

Downhill Yarding: No Process: Stroke Delimber

Tree Size:

Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF Bd. Ft./Load: 4,500

Loads/Day:

Cost/MBF:

\$72.95

Machines:

Log Loader (A) Stroke Delimber (A) Tower Yarder (Medium)

Combination#: 4

Douglas - Fir

18.18%

Western Hemlock / Fir

0.75%

Alder (Red)

25.48%

Maple

40.00%

Yarding Distance: Short (400 ft)

Logging System: Shovel

Downhill Yarding: Yes
Process: Manual Delimbing

Tree Size: Mature / Regen Cut (900 Bft/tree), 3-5 logs/MBF

**Loads/Day:** 10 **Bd. Ft./Load:** 4,500

**Cost/MBF:** \$51.59

Machines:

Shovel Logger

4/14/03



# Timber Sale Appraisal Logging Costs Foster Divide Combination Sale 341-03-21

"STEWARDSHIP IN FORESTRY"

Date: 4/14/03

Operating Seasons: 2.0

Profit & Risk: 15%

Project Costs: \$471,421

Other Costs (P/R): \$61,752

Slash Disposal: \$0

**Other Costs:** \$18,128

Miles of Road

Dirt Rock Rock Paved (Contractor) (State)

0.0 0.0 0.0 0.0

Road Maintenance: \$3.34

#### Hauling Costs

Species	\$/MBF	Trips/Day	MBF/Load
Douglas - Fir	\$0.00	3.0	4.5
Western Hemlock / Fir	\$0.00	3.0	4.0
Alder (Red)	\$0.00	3.0	3.5
Maple	\$0.00	3.0	3.5



# Timber Sale Appraisal Logging Costs Breakdown Foster Divide Combination Sale 341-03-21

		ESTRY"

Costs	Douglas - Fir	Western Hemlock / Fir	Alder (Red)	Maple
Logging	100.58	129.49	88.47	64.41
Road Maintenance	3.44	3.44	3.52	3.52
Fire Protection	0.59	0.59	0.00	0.59
Hauling	35.15	39.54	46.11	46.11
Other (P/R appl.)	6.68	6.68	0.00	6.68
Profit & Risk	21.97	26.96	20.72	18.20
Slash Disposal	0.00	0.00	0.00	0.00
Scaling	2.00	2.00	2.00	2.00
Other	1.96	1.96	0.00	1,96
Total	172.37	210.66	160.82	143.47

Amortization	0.00	0,00	0.00	0.00
Pond Value	539.45	331.16	515.00	400.00
Stumpage	367.08	120.50	354.18	256.53
Amortized	0.00	0.00	0.00	0.00



# Timber Sale Appraisal Summary Foster Divide Combination Sale 341-03-21

#### **Amortized**

	Douglas - Fir	Western	Alder (Red)	Maple			
		Hemiock / Fir					
MBF	0.00	0.00	0.00	0.00			
Value	0.00	0.00	0.00	0.00			
Total	0,00	0.00	0.00	0.00			

#### Unamortized

	Douglas - Fir	Westem Hemlock / Fir	Alder (Red)	Maple
MBF	8,591.00	640.00	1,794.00	7.00
Value	367.08	120.50	354.18	256.53
Total	3,153,584.28	77,120.00	635,398.92	1,795.71

#### **Gross Timber Sale Value**

Recovery \$3,867,898.91

Prepared by: Ty Williams

Date: 4/14/03

District: Astoria

Phone: (503) 325-5451

#### **Road Maintenance Cost Summary**

Sale: Date: Foster Divide Combination

6-Feb-03

By:

J. Long

MBF:

11,032

\$\$/MBF:

\$3.34

Туре	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	
Progressive	Grader 14G	\$540	2	40	\$80	\$4,280	
Operations	Dump Truck 12CY x 2	\$114	4	40	\$57	\$2,736	
Entries (2)	FE Loader C966	\$540	2	20	\$75	\$2,580	
	•		,				
	Grader 14G	\$540	1	90	\$80	\$7,7 <del>4</del> 0	
Final Haul	Dump Truck 12CY x 3	\$114	3	60	\$57	\$3,762	
Road	FE Loader C966	\$540	1	20	\$75	\$2,040	
Maintenance	Vibratory Roller	\$540	1	90	\$75	\$7,290	
Haul Route	Water Truck 2,500 gallon	\$132	1	90	\$67	\$6,162	•
	Labor			10	\$25	\$250	
Total							\$36,840

Production Rates Grader Vibratory Roller\*

Miles/day	Distance(miles)	Days
1.5	12.7	8.5
1.5	12.7	8.5

<sup>\*</sup>Final Road Maintenance Only

#### SUMMARY OF ALL PROJECT COSTS

SALE NAME:	Foster Divide Combination	<u></u>		
NEW CONSTR	UCTION:	PROJECT NO. 1		
	Road segment 1A-1B, 1C-1D, 2A-2B 2A-2B, 2C-2D, 2E-2F, 2H-2I, 3C-3D, 3G-3H, 3I-3J, 3K-3L, 5A-5B, 5C-5D, 6E-6F,7A-7B.	Length/Sta 62.45	Cost \$57,122	
	3A-3B, 3E-3F, 4A-4B, 5E-5F, 6A-6B, 6C-6D.	31.9	\$37,309	
ROAD IMPRO	VEMENT	PROJECT NO. 1		
	Road segment I1-I2, I3-I4	Length/Sta 112.5	<u>Cost</u> \$17,792	
	TOTALS			\$112,223
NEW CONSTR	UCTION:	PROJECT NO. 2		
	Road segment P1-P2, P3-P4.	Length/Sta 69.7	<u>Cost</u> \$103,714	
ROAD IMPRO	VEMENT	PROJECT NO. 2		
	Road segment I5-I6, I6-P1, P2-P3	Length/Sta 83.25	<u>Cost</u> \$53,053	
	I6-I7	86.75	\$13,371	
	TOTALS		· · · · · · · · · · · · · · · · · · ·	\$170,137
SPECIAL PRO				
Project No. 3	<u>Descriptio</u> Sterling Quarry Developmen		<u>Cost</u> \$92,583	
Project No. 4	Cow Creek Road Vacating		\$60,000	
	Road maintenance after pro	ject work	\$27,682	
	TOTALS			\$180,265
MOVE IN:	Equipme Dozer (Medium D7) X 2 Grader (Large 14G) X 2 Rubber Tire Skidder X 2 Vibratory Roller X 2 Front End Loader X 2 Dump Trucks (12 x \$114) Excavator (Medium C325) X Water Truck (1500 gal) X 2	Cost \$1,120 \$1,080 \$1,040 \$1,080 \$1,080 \$1,368 \$1,800 \$228	<b>\$8,79</b> 6	
GRAND TOTAL				\$471,421
Compiled By:	J. Long Ra		Date:	2/20/03

### PROJECT NO. 1 SUMMARY OF CONSTRUCTION COSTS

TA-1B, 1C-1D, 2A-2B, 2C-2D, 2E-2P	SALE NAME:	Foster Divide	Combination	on	-	NSTRUCTION:		MILES MILES		
### Table   Stations	ROAD:	4A 4B 4C 4E	2 2 2 D 2	2 2D 2E 2E	HIV	IPROVEIVIENT.		STATIONS		IVIILES
CLEARING & GRUBBING   Method   Scatter debris ousside of right-of-way   6.50   x   \$840.00   = \$5,460.00	POINTS:	1A-1B, 1C-1L	2G 3H 3I	3   3K-3  5A	5B 5C-5D 6E	6F and 7A-7B		-		
Method   Acres   X   Rate   =   Cost	CLEADING & C		,30-311, 31	-33, 3K-3L, 3A	-JD, JO-JD, JL	-OI, and TA-TD.				
Scatter debris ouside of right-of-way   6.50	CLEARING				l Acres I	Y	l Rate	l =	l Cost	
SUB TOTAL FOR CLEARING & GRUBBING			ouside of	right_of_way				=		
SUB TOTAL FOR CLEARING & GRUBBING   X					0.00		Ψ0-10:00	4	Ψ0,400.00	
X			au seginer	its and						
SUB TOTAL FOR CLEARING & GRUBBING   Stations/Hrs   X   Rate   =   Cost		lanungs					······	-∤		
EXCAVATION								<del>-  </del>		
EXCAVATION		<del></del>			i	^	L			
EXCAVATION	CUR TOTAL E	OD CLEADING	¢ CDUBBI	NG						<b>\$5.460</b>
Material   Stations/Hrs   X   Rate   =   Cost	SUB TOTAL FO	OR CLEARING	& GRODDI	NG .						\$5,400
Material   Stations/Hrs   X   Rate   =   Cost										
Material   Stations/Hrs   X   Rate   =   Cost	EVCAVATION.									
Field Design Construction:	EXCAVATION				Statione/Hre I	•	l Rate	I =	Cost	
All roads listed above: \$\$I/\$1a.   62.45				n·	Otations/ins		race		0031	
Lig. W/D-7: 16 Idgs. X 3hrs. Per Idg.	1				62.45		\$117.00	-{	\$7.306.65	
C325 excavator for fill reconstructions   12								4		
Skidder w/operator for all fills   6										
Dump truck for fill reconstructions   10								-4		
Mechanical tamper w/operator for fills								-		
Culvert materials and installation					L			-4		
CULVERT MATERIALS AND INSTALLATION   Location   Dia/type   Lineal ft.   Rate   Cost   Location   Location   Dia/type   Lineal ft.   Rate   Location   Location		Mechanical ta	amper w/op	erator for fills	4	x	\$34.00	_ =	\$136.00	
CULVERT MATERIALS AND INSTALLATION   Location   Dia/type   Lineal ft.   Rate   Cost   Location   Location   Dia/type   Lineal ft.   Rate   Location   Location		00 540 44 44 74	<b></b>							*
Location   Dia/type   Lineal ft.   Rate   Cost   Location   Dia/type   Lineal ft.   Rate   Cost	SUB TOTAL FO	OR EXCAVATION	ON							\$14,073
Location   Dia/type   Lineal ft.   Rate   Cost   Location   Dia/type   Lineal ft.   Rate   Cost										
Location   Dia/type   Lineal ft.   Rate   Cost   Location   Dia/type   Lineal ft.   Rate   Cost	TOWN COT MA	TEDIAL O AND	INIOTAL LAT	FION						
1A-1B 0+00	1			•	1 0 1	1 4:	D:- #	1	1 5. 1	
2A-2B 0+00						Location	Dia/type	Lineai π.	Rate	Cost
2C-2D 0+00										
2H-2I 0+00										
31-3J 3+25   18" CPP   34			100							
31-3J 6+70   18" CPP   32   \$11.00   \$352.00										
31-3J   13+40   18" CPP   30   \$11.00   \$330.00										
31-3J   20+00   18" CPP *   30   \$7.50   \$225.00										
31-3J   22+00   18" CPP   30   \$11.00   \$330.00				1						
31-3J 24+25   24" CPP * 40										
31-3J 25+30										
3K-3L 0+00 18" CPP 40 \$11.00 \$440.00  Culvert costs include installation, except for fills as indicated with *. Fill constructions are priced separately.  Description Quantity Rate Cost Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface				\$11.45						
Culvert costs include installation, except for fills as indicated with *.  Description Other/miscellaneous:    Description   Quantity   Rate   Cost										
Description Quantity Rate Cost Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface	3K-3L 0+00	18" CPP	40	\$11.00	\$440.00					
Description Quantity Rate Cost Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface										
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Description Quantity Rate Cost Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface										
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Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface	1							1		
Other/miscellaneous: Bevel culvert inlet - 24" CPP 1 \$25.00 \$25.00  Culvert stakes & markers: 6 foot long carsonite markers for all surface					Description		Quantity	Rate	Cost	
Culvert stakes & markers: 6 foot long carsonite markers for all surface		Other/mis	cellaneous.	Bevel culvert	•	<del></del>				
		Othermist	conancous.	Dover curvert	mict - 24 OFF		<u></u>	Ψ20.00	ΨZ3.00	
	ļ	Culvert etelies	2 markara	6 fact lang co	regnite markets	for all ourfoor		<del> </del>		
cuivens.   10   \$14.10   \$141.00	i	Culveit Stakes	a markers:		isonite markers	ioi all sullace	40	614 40	0444.00	
				cuiverts.			10	<b>Φ14.10</b>	φ141.UU	

\$4,875

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

ROCKING	Subgrade pr		Description		Stations/amoun	х	Rate/sta/amt	Cost	
All roads listed ab	oove,			Ditches \$\$/St	52.00	Х	\$15.20	\$790.40	
except for 7A-7B.			bgrades (new			x			
			ry Roller \$\$/s		52.00	x	\$12.50	\$650.00	
7A-7B		Grade, Outs	lope, Waterba	ır İ	10.50	x	\$11.20	\$117.60	
	Size	Totals	Size	Totals	Size	Totals	Size	Totals	1
Base:	4"-0"	3,085							
Surface:	3/4"-0"	178							
Miscellaneous:	4"-0"	90	6"-0"	1,330					
Miscellaneous:	1 1/2"-0"	60	24"-6"	30			<b></b>		
Miscellaneous:									
Miscellaneous:							<u> </u>		
L.		3,413 (	CY	1,360	CY	,	CY		CY
	Surfacing ro	ck.	Size/type	ı	1	Tot. cy	Rate/cy	Cost	
•	Junaoing 10		4"-0"			3,085	\$4.82	\$14,869.70	
		_	3/4"-0"			178	\$4.82	\$857.96	
		-	3/4 -0				<b>V</b> 1.02	<b>4007.00</b>	
		-							
(	Other/misc:		Description	1	Size/type	Су	Rate/cy	Cost	
		Culvert bedo			1 1/2"-0"	60	\$4.82	\$289.20	
		Curve Wider			4"-0"	90	\$4.82	\$433.80	
				(includes load	6"-0"	1,280	\$5.94	\$7,603.20	
		and spreadi				·			
		Energy dissi			24"-0"	30	\$7.31	\$219.30	
			block at Pt. 7/	٩	6"-0"	50	\$5.94	\$297.00	
,	D		Description			No. sta	Rate/sta	Cost	
ŀ	Processing:	Grade Wate	Description er, Compaction	า		110.0	\$37.00	\$4,070.00	
		Orade, Wate	or, Compaction	' <u>'</u>			491.00	ψ 1,01 0.00	
SUB TOTAL FOR	ROCKING								\$30,19
SPECIAL PROJE	CTS			<del>.</del>			<del> </del>		
		_		Description				Cost	
		<u>1</u>	Develop pit rui	n and riprap ro	ck \$\$/cy \$1.85 x	1360 cy		\$2,516.00	
		-							
SUB TOTAL FOR	SPECIAL I	- PROJECTS							\$2,51
						·			
GRAND TOTAL									\$57,121.8

Foster Divide Combinati Project No. 1 3I - 3J Road Construction Fill Reconstruction Costs

Points/ Station	Description	C325 # 1	C325 # 2	Rubber Tire	Truck	Mechanical Tampe with operator	r
3I to 3J 20+00	Culvert replacement fill reconstruction 6' fill ht.	5 hr	hr∢	3 hr	2 hr	2 hr	
3I to 3J 24+25	Culvert replacements fill reconstruction 6' fill ht.	5 hr	hr	3 hr	2 hr	2 hr	
3I to 3J 22+00	Construct energy dissipator.	2 hr					
į.	laul away old culver to an approved refus site.	S			6 hr		: :
	,						
						Ale	
· · · · · · · · · · · · · · · · · · ·	Total	12 hr	hr	6 hr	10 hr	4 hr	
	Rate	\$115	\$115 /hr	\$60 /hr	\$57 /hr	\$34 /hr	,
	Cost	\$1,380		\$360	\$570	\$136	\$2,44

### PROJECT NO. 1 SUMMARY OF CONSTRUCTION COSTS

			1.0	NEW CONG	TDUCTION	21.00	STATIONS	S 0.60 MILES		
SALE NAME:	Foster Divi				TRUCTION:		STATIONS		MILES	
ROAD:	Roadeng D			IIVIPF	CVEIVIENT.		- STATIONS		WIILES	
POINTS:		3F,4A-4B,5	E-5F,6A-6B,6C-6					······································		
CLEARING & GI				A = /ama.unt	1	Rate	l = ;	Cost		
	Method			Ac./amount 4.00	X	\$840.00		\$3,360.00		
		oris outside		4.00	_ X	<b>Φ040.00</b>	=	\$3,360.00		
	right-of-wa				_ X		=			
	segments	and landing	IS.		_ X		i i			
					_  ×		=			
					x		=			
SUB TOTAL FO	R CLEARIN	G & GRUB	BING		<del></del>				\$3,360	
									, <u>, , , , , , , , , , , , , , , , , , </u>	
EXCAVATION	Material		1	Cy/amount	x	Rate	=	Cost		
(All roads listed	Common E	xcavation.	Design Roads	3,263.00	×	\$1.35	=	\$4,405.05		
			gned Roads	3,582.00	7 × 1	\$0.40	=	\$1,432.80		
,		Haul \$\$/C		1,118.00	7 × 1	\$2.75	1 =	\$3,074.50		
			gs. @ 3 hrs. ea.	51.00	7 x	\$90.00	1 =	\$4,590.00		
			roads \$\$/Sta	22.00	┦ × Ⅰ	\$27.00	=	\$594.00		
	out olopo t	ourraining and					4			
SUB TOTAL FO	R EXCAVAT	ΓΙΟΝ							\$14,096	
							· · · · · · · · · · · · · · · · · · ·	Marie age as		
CULVERT MATE										
Location	Dia/type		Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost	
3E-3F 0+00	18" CPP	50	\$11.00	\$550.00			<u></u>			
6A-6B 4+50	18" CPP	30	\$11.00	\$330.00						
						,				
								ļ <u>-</u>		
							ļ			
	·								···	

Description

Other/miscellaneous:

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

Culvert stakes & markers: 6 foot long carsonite markers for all surface

culverts.

Quantity

2

Rate

\$14.10

Cost

\$28.20

\$908

ROCKING									
	Subgrade	prep:	Description	St	ations/amo	Х	Rate/sta/am		
(All roads listed			pe, Construct Ditch	es \$\$/sta	31.90	х	\$15.20	\$484.88	
above. \$\$/Sta.)		Compact su	ibgrades (new road	s) w/VIB \$\$/sta	31.90	×	\$12.50	\$398.75	
above. our cia.,		O CALLED TO SERVICE OF THE SERVICE O				x			
						X			
					·				
Points:							1		
	Size	Totals	Size	Totals	Size	Totals	Size	Totals	
Base:	4"-0"	1,938							
Surface:		243							
Miscellaneous:	4"-0"	50	6"-0"	560					
Miscellaneous:	3/4"-0"	20							
Miscellaneous:									
Miscellaneous:									
W.OOO.		2,251	CY	560	CY	····	CY		CY
		2,201	01		•				
	Surfacing	rock:	Size/type		1 1	Tot. cy	Rate/cy	Cost	
	Junaomy		4"-0"			1,938	\$4.82	\$9,341.16	
		•	3/4"-0"			243	\$4.82	\$1,171.26	
		•							
		•					<del></del>		
·		•			J				
	Other/mise	•	Description		Size/type	Су	Rate/cy	Cost	
	Cultumo		andings: 7 ldgs. @	80 cv ea.	6"-0"	560	\$5.94	\$3,326.40	
			loading and spread				<del>                                     </del>		
		(11101000	Curve widenii		4"-0"	50	\$4.82	\$241.00	
			Curve widenii		3/4"-0"	20	\$4.82	\$96.40	
			Outro maonii	'9			7	700	
	Processing	٦٠	Description			No. sta	Rate/sta	Cost	
	1 100000111		ess and compact ci	ushed rock \$\$/Sta	1.	77	\$37.00	\$2,849.00	
		vacer proce	soo ana compact of	4011001001			1		
					1.0.000				
1									
								<u> </u>	
SUB TOTAL FOR	R ROCKING	3							\$17,909
OOD TO MET O	· · · · · · · · · · · · · · · · · · ·								
SPECIAL PROJE	ECTS								
				Description				Cost	
		•	Develop pit run roc					\$1,036.00	
		•	·····						
		•							
		•		<del></del>			-		
		•					7 144 44		
		•						·	
SUB TOTAL FOR	R SPECIAL	PROJECTS	6						\$1,036
<u> </u>									
GRAND TOTAL									\$37,309.40
							M		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
									· · · · · · · · · · · · · · · · · · ·
Compiled By:	J. Long		Date:	2/5/03					

### PROJECT NO. 1 SUMMARY OF CONSTRUCTION COSTS

SALE NAME: ROAD: POINTS:	Foster Divide Road Improve		on		STRUCTION: _ ROVEMENT: _	112.50	STATIONS _ STATIONS _	2.13	MILES MILES
ROCKING									
	Subgrade pre	ep:	Description		Stations/amo	х	Rate/sta/am	Cost	
11-12, 13-14			ompact \$\$/Statior	1	112.50	Х	\$15.50	\$1,743.75	•
		(with vibrate				x			•
	Size	Totals	Size	Totals	Size	Totals	Size	Totals	ה
Base:		0.400			-		1		
Surface:	·	2,406					- <b> </b>		
Miscellaneous:	3/4"-0"	60					-		
Miscellaneous: Miscellaneous:	<u> </u>						-		
Miscellaneous:					<del>- +</del>		<del> </del>		
Wilscellarieous.	<u> </u>	2,466	CY		0 CY		O CY	0	CY
<u> </u>		2,400	0.		· · · ·			ŭ	01
Ì	Surfacing roc	k:	Size/type		1 1	Tot. cy	Rate/cy	Cost	
	J	•	3/4"-0"			2,406	\$4.82	\$11,596.92	•
	Oth a virtual as		Description		L Sizo/tupo L	Cv	I Poto/av I	Cont	
	Other/misc:	Curve Wide	Description		Size/type	<u>Cy</u> 60	Rate/cy   \$4.82	Cost \$289.20	•
		Curve vvide	:IIIII		3/4 -0		\$4.62	\$209.20	•
	Processing:		Description			No. sta	Rate/sta	Cost	•
	Frocessing.	Grade Wat	ter, Compaction			112.5	\$37.00	\$4,162.50	•
		Olado, Wal	ici, Compaction			112.0	+ + + + + + + + + + + + + + + + + + + +	Ψ+, 102.00	•
1									•
SUB TOTAL FO	R ROCKING								\$17,792
GRAND TOTAL									<b>\$17,792</b> .37
Compiled By:	J. Long	-	Date:	2/4/03					

#### CRUSHED ROCK COST

SALE NAME: Foster Divide Combination DATE: 2/5/03 ROCK TYPE: crushed PROJECT: No. 1 BY: QUARRY: Knob Point Stockpile 3/4"-0, 4"-0",

(OAISIST.	Northrup 1	1/2"-0"	., . 9,									
Road	Stations	Cubic			,				AY HAUL IN			
Segment	Stations	Yards	50	MPH	30	MPH	25	MPH	20 MPH	15 <b>M</b> PH	10 MPH	5 MPH
1A to 1B	2.8	170							4.20	1.50	0.41	0,10
1C to 1D	1.9	125							4.00	1.50	0.32	0.10
2A to 2B	1.35	98							3.80	1.50	0.34	0.10
2C to 2D	1.10	85							3.40	1.50	0.38	0.10
2E to 2F	2.00	140							3.20	1.50	0.37	0.10
2H to 2I	1.40	110		, ,					2.40	1.50	0.34	0.10
3A to 3B	5.35	340							3.00	1.50	0.33	0.10
3C to 3D	2.00	160							2.90	1.50	0.34	0.10
3E to 3F	4.00	348							2.70	1.50	0.32	0.10
3G to 3H	2.80	160		[					3.20	1.50	0,37	0.10
31 to 3J	27.30	1,743							2.70	1.50	0.39	0.10
3K to 3L	4.60	302							3.10	1.50	0.37	0.10
4A to 4B	10.00	701							3.00	1.50	0.33	0.10
5A to 5B	1.00	70							3.00	2.00	0.35	0.10
5C to 5D	1.20	80			· · · · ·		1.		3.00	2.00	0.36	0.10
5E to 5F	2.75	158							3.00	1.90	0.36	0.10
6A to 6B	6.90	496							3.00	2.20	0.36	0.10
6C to 6D	2.90	208							3.00	2.10	0.36	0.10
6E to 6F	2.50	165							3.00	2.00	0.35	0.10
11 to 12	55.00	1,253							3.00	1.20	0.39	0.10
13 to 14	57.50	1,213							3.00	1.50	0.40	0.10
			<u> </u>									
						]						
								]				
	1		L									

#### **ROCK HAUL:**

TOTAL

191.65

CUBIC YARD WEIGHTED HAUL

STA./NO. CU. YD.

8,125

Truck type:	D20	No. trucks:	5		
Delay min.:	15	Efficiency:	75%	Ave haul: \$3.77	/cy
				Load: \$0.40	/cy
Truck type:	D12	_ No. trucks:	3	Spread: \$0.65	/cy
Delay min.:	12	Efficiency:	75%		
,					
Truck type:	D10	_ No. trucks: _		Production: cy/day = 1,6	072
Delay min.:	10	Efficiency:	75%		

CRUSHED ROCK HAUL COSTS 8,125 cy @

\$4.82 /cy

0.35

1.46 Average Round Trip Distance (miles) 0.10

9.42

AVERAGE

HAUL 4.71

#### CRUSHED ROCK COST

SALE NAME:	Foster Divide Combination			DATE:	2/7/03
PROJECT:	No. 1 - New Roads	ROCK TYPE:	pit run	BY:	J.Long
OLIA DDV:	Northrup				

QUARRY:		Northrup															_
Road	Stations	Cubic							AY HAUL								Total
Segment		Yards	50	MPH	30	MPH	25	MPH	20 MF	<sup>'</sup>							
it run Landing	s	1,840							3.00	_	1.5		0.:			.10	5.10
7A road block		50	<u>.</u>						2.00	_	-0.5	0	0.:	20	0	.10	2.80
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OTAL		1,890															AVERAC
	STA./NO.	CU. YD.												ļ			HAUL
CUBIC YARD V			1						2.97		1.4	7	0.	49	0	.10	5.04
								A	verage R	ound						0.08	<u> </u>

#### ROCK HAUL:

Truck type	D20	No. trucks:	3		
Delay min.	15	Efficiency:	75%	Ave haul: \$4.54	/cy
				Load: \$0.50	/cy
Truck type	D12	No. trucks:		Spread: \$0.90	/cy
Delay min.	12	Efficiency:	75%		
Truck type	D10	No. trucks:	4	Production: cy/day =	756
Delay min.	10	Efficiency:	75%		

CRUSHED ROCK HAUL COSTS 1,890 cy @

\$5.94 /cy

#### RIP RAP ROCK COST

SALE NAME:		Divide Com		_						DATE:		2/7/03
PROJECT:		Project No.	1		ROCK.	TYPE:	F	Rip Rap		BY:		. Long
QUARRY:		Northrup		<del>-</del>		_	- 1,			·		
Road	Stations	Cubic	ļ			. 0	NE W	AY HAUL IN	MILES		1 .	Total
Segment		Yards	50 MF	H 30	MPH	25	MPH		15 MPH			
3í-3J		30						3.00	1.50	0.50	0.10	5.10
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TOTAL		30					- 1	1				AVERAGE
O I FUL	STA./NO.	CILYD		ľ					İ			HAUL
CUBIC YARD	NEIGHTED	HALII		1		-	- 1	3.00	1.50	0.50	0.10	5.10
JODIO TARD	(TE(OITTED	IIAUL	·				<u>\</u>		nd Trip Dista		10.20	1 0.10
<del></del>	· · · · · · · · · · · · · · · · · · ·	<del>, , , , , , , , , , , , , , , , , , , </del>	·· · · · ·	<del>, , ,</del>	<del></del>			., 5.486, 1 104	ta Trip Diota	(minos)	10.20	
ROCK HAUL:												
CONTIAUL.												
	Truck type:	D42	No fracti									
	Delay min	10	INU. LIUCK	<del></del>	E0/			A 1	haul: \$5.8	24 /04		
	LJESTAY IIIIN	LZ.	cincienc	u (	13 7/N			Avei	ııauı. 30.0	JI /UV		

Truck type: D10 No. trucks: Delay min.: 10 Efficiency:

RIP RAP ROCK HAUL COSTS

\$1.50 /cy

\_\_\_\_/cy

Load:

Develop:

Production: cy/day = 313

30 cy @ \$7.31 /cy

#### PROJECT NO. 2 SUMMARY OF CONSTRUCTION COSTS

SALE NAME:	Foster Divid	nline	ation		STRUCTION: ROVEMENT:		STATIONS STATIONS		MILES MILES
POINTS: CLEARING & GI	P1-P2 and	rs-r4			· · · · · · · · · · · · · · · · · · ·	-			
CLEARING & GI	Method		1	Ac./amount	1 x 1	Rate	=	Cost	1
	Scatter deb	rie outeide	of	9.20	X	\$840.00	=	\$7,728.00	
	right-of-way			0.20	⊢	<b>V</b>	=	* 1,1 = 21 = 2	
	segments a				-		=		
	3cgillelita e	and landing	J		×		=		İ
					1 ×		=		
SUB TOTAL FO	R CLEARING	G & GRUBI	BING						\$7,728
EXCAVATION									
	Material			Cy/amount	x	Rate	=	Cost	
(All roads listed	Common E	xcavation,	Design Roads	6,490.00	×	\$1.35	=	\$8,761.50	
above. \$\$/CY)	Fill Compa	ction, Desig	ned Roads	11,998.00	x	\$0.40	=	\$4,799.20	
	Truck End	Haul \$\$/C	Υ	14,511.00	×	\$2.75	] =	\$39,905.25	
	Cut slope r	ounding all	roads \$\$/Sta	47.00	×	\$27.00	=	\$1,269.00	
SUB TOTAL FO	R EXCAVAT	ION							<b>\$54</b> ,735
									, , , , , , , , , , , , , , , , , , , ,
CULVERT MATE					1	D:-#	1 1:	l Data 1	04
Location	Dia/type		Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
P1-P2 0+00	18" CPP	40	\$11.00	\$440.00					
P1-P2 4+25	18" CPP	40	\$11.00	\$440.00 \$440.00					
P1-P2 8+25	18" CPP	40 40	\$11.00 \$11.00	\$440.00					
P1-P2 11+85	18" CPP			\$440.00	-				**·
P1-P2 15+00	18" CPP	40	\$11.00	\$440.00					
P1-P2 18+85	18" CPP	40	\$11.00	\$440.00			<del> </del>	<del></del>	
P1-P2 21+75	18" CPP	40	\$11.00				<del> </del>	ļ	
P3-P4 6+85	18" CPP	40	\$11.00	\$440.00			<del> </del>		
	ļ						_	-	
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				Description		Quantity	Rate	Cost	
	Other/misc	ellaneous		2 costipation			1		
	50.500000								
Cul	vert stakes	& markers:	6 foot long cars	onite markers for all s	urface	8	\$14.10	\$112.80	
	TOTA DIGITOR	e mantoro.	culverts.				<del>                                     </del>		
						L	<del> </del>		
SUB TOTAL FO	R CULVERT	MATERIA	LS & INSTALLA	TION					<b>\$3</b> ,633

ROCKING							_		
	Subgrade	prep:	Description		Stations/amo	Х	Rate/sta/am	Cost	_
(All roads listed			ape, Construct Di	tches \$\$/sta	69.70	Х	\$16.90	\$1,177.93	
above. \$\$/Sta.)		Compact s	ubgrades (new ro	oads) w/VIB \$\$/sta	69.70	X	\$15.60	\$1,087.32	
						X			•
						Х			
							·		:
Points:									
	Size	Totals	Size	Totals	Size	Totals	Size	Totals	_
Base:	4"-0"	7,797							
Surface:	1	1,865							
Miscellaneous:	1	100							ļ
Miscellaneous:	i	40			20		1		
Miscellaneous:		40			-		1 1		
Miscellaneous:									
Wilder in the court	<u> </u>	9,842	CV		20 CY		CY		CY
		3,042	01		20 01		0.		0.
	Surfacing	rock:	Size/type		1 1	Tot. cy	Rate/cy	Cost	
	Junacing	IOUR.	4"-0"	· · · · · · · · · · · · · · · · · · ·		7,797	\$2.79	\$21,753.63	-
			3/4"-0"			1,865	\$2.79	\$5,203.35	-
			3/4 -0			1,000	Ψ2.73	Ψ0,200.00	-
					-		+		-
									-
	0.00		Description		Size/type	Су	Rate/cy	Cost	
	Other/mis	C.	Description	inatan	24"-6"	20	\$4.33	\$86.60	-
			Energy diss		1 1/2"-0"	40	\$2.79	\$111.60	-
			Culvert bedo		4"-0"	100	\$2.79	\$279.00	
			Curve wid		3/4"-0"	40	\$2.79		-
			Curve wid	ening	3/4 -0	40	\$2.79	\$111.60	-
	<b>D</b>		Description			No. sta	Rate/sta	Cost	
	Processin		Description	t the all march charles	*4-	210	\$37.00	\$7,770.00	-
		Water proc	ess and compact	t crushed rock \$\$/S	ia.	210	\$37.00	\$7,770.00	-
						-	<del> </del>		-
				· · · · · · · · · · · · · · · · · · ·			<u>.  </u>		-
									-
									••
SUB TOTAL FO	R ROCKIN	<u> </u>			* * * * *			···	<b>\$3</b> 7,58
				<del></del>					
SPECIAL PROJ	ECTS			D	··		1	C+	
				Descrip				Cost	-
			Develop riprap r	ock cy/\$\$ 20 CY x	\$1.85			\$37.00	-
									_
									-
									_
SUB TOTAL FO	R SPECIAL	_ PROJECT	S					·····	\$3
CDAND TOTAL									<b>\$103,71</b> 3.7
GRAND TOTAL									Ψ100,713.7
			·						<del></del>
Compiled By:	Llong		Date:	2/5/03					
Complied by.	J. LUIIY	-	Date.	2,0,00					

#### PROJECT NO. 2 SUMMARY OF CONSTRUCTION COSTS

SALE NAME:		Divide Combination ML and Northrup Reconstruction		NEW CONS			STATIONS		MILES 1.58 MILES		
ROAD:			Reconstruction	IMP	ROVEMENT:	63.23	STATIONS	1.30	MILLO		
POINTS:	15-16, 16-P1, F	P2-P3									
CLEARING & G			1	Aoroo	1 . 1	Rate	=	Cost			
	Method			Acres	X	\$840.00	=	\$1,680.00			
	Scatter debri			2.00	-  ×	\$040.00	=	\$0.00			
	(segments I	5-I6 and P2-I	only).		-  ×		=	\$0.00			
					_ X		=	\$0.00			
					_  ×		_	\$0.00			
SUB TOTAL FO	R CLEARING	& GRUBBII	NG						\$1,680		
EXCAVATION											
	Material			Amount	X	Rate	=	Cost			
	End Haul Ex	cavation \$\$/	CY	6,618.00	x	\$2.75	=	\$18,199.50			
	Embankmen	t Compaaction	on \$\$/CY	1,800.00	x	\$0.40	=	\$720.00			
	C325 excava	ator for fill arr	nor \$\$/Hr	16.00	] ×	\$115.00	=	\$1,840.00			
	and energy of	dissipators.									
SUB TOTAL FO	OR EXCAVATI	ION							<b>\$20</b> ,760		
CULVERT MAT	ERIALS AND	INSTALLAT	ION								
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost		
15-16 Sta. 2+85	18" CPP	40	\$11.00	\$440.00							
I5-I6 Sta. 7+00		40	\$11.00	\$440.00							
15-I6 Sta. 12+70		34	\$11.00	\$374.00							
I5-I6 Sta. 15+50		40	\$11.00	\$440.00							
15-I6 Sta. 20+90		34	\$11.00	\$374.00							
P2-P3 Sta. 44+		40	\$11.00	\$440.00							
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	.,			Description		Quantity	Rate	Cost			
	Other/mis	scellaneous:		Description		Quantity	Nate	OUSC			
							044.55	20105			
[ '	Culvert stakes	s & markers:	6 foot long carso	nite markers for	all surface	6	\$14.00	\$84.00			
			culverts.	<del> </del>		<u> </u>		<u> </u>			
SUB TOTAL EC	OR CHILVERY	MATERIALS	8 & INSTALLATIO	)N					\$2,592		

ROCKING				-			In 1		
	Subgrade pre		Description		ations/amo	X	Rate/sta/am	Cost	
				ches \$\$/Station	83.25	X	\$16.90	\$1,406.93	
			bgrades (new ro			Х			
		With Vibrato	ry Roller \$\$/stat	tion	83.25	X	\$15.60	\$1,298.70	
						Х			
	Size	Totals	Size	Totals	Size	Totals	Size	Totals	
Base:	4"-0"	3,752							
Surface:	3/4"-0"	2,248							
Miscellaneous:			24"-6"	70					
Miscellaneous:	1 1/2"-0"	100							
Miscellaneous:	4"-0"	690	36"-12"	120					
Miscellaneous:						·			
		6,790 C	Υ	190	CY	(	CY	0	CY
	Surfacing roc	k:	Size/type			Tot. cy	Rate/cy	Cost	
	•	_	4"-0"			3,752	\$2.79	\$10,468.08	
		_	3/4"-0"	· · · · · · · · · · · · · · · · · · ·		2,248	\$2.79	\$6,271.92	
		_							
	Other/misc:		Description		Size/type	Су	Rate/cy	Cost	
			veling, curve wid	dening	4"-0"	690	\$2.79	\$1,925.10	
		Culvert bedd			1 1/2"-0"	100	\$2.79	\$279.00	
		Energy disipa	ators	·	24"-6"	70	\$4.33	\$303.10	
		Fill armor			36"-12"	120	\$4.33	\$519.60	
	Processing:		Description			No. sta	Rate/sta	Cost	
	Ξ.	Grade, Wate	r, Compaction			83.3	\$37.00	\$3,080.25	
	•						1	\$0.00	
	•						1	\$0.00	
	•						<del>                                     </del>	\$0.00	
	•								
SUB TOTAL FO	R ROCKING								\$25,553
SPECIAL PROJ	ECTS			<del></del>					
		_		Description				Cost	
				ck \$\$/cy \$1.85 x				\$351.50	
				vood fibre, fertilize	er \$\$/acr	e \$1,100 x	1.3 acres	\$1,430.00	
			5-I6 and waste a						
		ō	rush and load o	ld culverts to be h	nauled away	\$\$/hr \$115	5 x 3 hrs	\$345.00	
			aul away old cu					\$342.00	
SUB TOTAL FO	R SPECIAL PI	ROJECTS							\$2,469
				·					Ψ2,40

2/14/03

Date:

\$53,052.68

ROCKING

**GRAND TOTAL** 

Compiled By: J. Long

Foster Divide Combination Project No. 2 15 - 16 Road Improvement **Reconstruction Costs** Rubber Tire Skidder Truck C325 # 1 C325 # 2 Description Points/ Station Armor fill slope 15 to 16 with 120 cy riprap. 10 hr hr 5+60 6 hr Construct 4 riprap 15 to 16 energy dissipators. Crush and load old 3 hr 15 to 16 culverts to be hauled away. 6 hr Haul away old culverts to an approved refuse site. 6 hr hr 3 hr Total 16 hr \$34 /hr Rate \$115 \$115 /hr \$60 /hr \$57 /hr \$2,527 \$342 Cost \$1,840 \$345

### PROJECT NO. 2 SUMMARY OF CONSTRUCTION COSTS

SALE NAME:	Foster Divide	e Combination	on	NEW CONST	TRUCTION:		STATIONS		MILES
ROAD:	Road Improv	ement and I	Reconstruction	IMPR	OVEMENT:	86.75	STATIONS	1.64	MILES
POINTS:	16-17						-		
EXCAVATION			4	01.11	1	D-4-			
	Material			Stations/Hrs	Х	Rate	=	Cost	
	C325 excava	tor for all fill	reconstructions	30	] ×	115	=	\$3,450.00	
	Skidder w/op	erator for al	l fills	14	_ x	60	=	\$840.00	
	Dump truck f	or fill recons	tructions	14	×	57	=	\$798.00	
	Mechanical t	amper w/op	erator for fills	7.00	_ x	\$34.00	] =	\$238.00	
SUB TOTAL F	OR EXCAVATI	ON							<b>\$5</b> ,326
CULVERT MA	TERIALS AND	INSTALLAT	TON						
Location	Dia/type	Lineal ft.	Rate	Cost	Location	Dia/type	Lineal ft.	Rate	Cost
Sta. 28+80	18" CPP	32	\$11.00	\$352.00					
Sta. 34+85	18" CPP	32	\$11.00	\$352.00					
Sta. 44+40	18" CPP	32	\$11.00	\$352.00					
Sta. 48+20	18" CPP *	40	\$7.50	\$300.00					
Sta. 53+40	18" CPP *	30	\$7.50	\$225.00					
Sta.72+25	18" CPP *	40	\$7.50	\$300.00					
Sta. 77+90	18" CPP	30	\$11.00	\$330.00					
Sta. 82+80	18" CPP	50	\$11.00	\$550.00					
	1								,

Culvert costs include installation, except for fills as indicated with \*.

	Description	Quantity	Rate	Cost
Other/miscellaneous:				\$0.00
				\$0.00
Culvert stakes & markers:	6 foot long carsonite markers for all surface			\$0.00
	culverts.	5	\$14.10	\$70.50

SUB TOTAL FOR CULVERT MATERIALS & INSTALLATION

\$2,832

ROCKING						IData lata la cal	Cost	
Subgrade pre	ep:	Description		ations/amo	X	Rate/sta/am	Cost	
		pe, Construct Ditc		86.75	X	\$15.20	\$1,318.60	
		ubgrades (new roa			X	10000	\$0.00	
	With Vibrato	ory Roller \$\$/stati	on	86.75	Х	\$12.50	\$1,084.38	
					х		\$0.00	
Size	Totals	Size	Totals	Size	Totals	Size	Totals	
Base: 4"-0"								
Surface: 3/4"-0"						<u> </u>		
Miscellaneous: 1 1/2"-0"	570							
Miscellaneous: 4"-0"	48							
Miscellaneous:								
Miscellaneous: 24"-6"	40							
	658	CY	0	CY	(	CY	0	CY
Surfacing roo	sk:	Size/type			Tot. cy	Rate/cy	Cost	
	•	4"-0"				\$2.79	\$0.00	
	•	3/4"-0"				\$2.79	\$0.00	
	•	1 1/2"-0"				\$2.79	\$0.00	
Other/misc:		Description		Size/type	Су	Rate/cy	Cost	
	Subgrade L			1 1/2"-0"	400	\$2.79	\$1,116.00	
	Culvert bed			1 1/2"-0"	170	\$2.79	\$474.30	
	Base rock r	eplacement		4"-0"	48	\$2.79	\$133.92	
	Riprap			24"-6"	40	\$4.33	\$173.20	
				L				
Processing:		Description			No. sta	Rate/sta	Cost	
	Grade, Wat	er, Compaction				\$37.00	\$0.00	
SUB TOTAL FOR ROCKING								\$4,30
SPECIAL PROJECTS								
			Description				Cost	
	•	Develop riprap ro	ck \$\$/cy \$1.85	x 60 cy			\$111.00	
	•	Crush and load ol	d culverts to be	hauled awa	y \$\$/hr \$1	15 x 4 hrs	\$460.00	
		Haul away old cul			k 6 hrs		\$342.00	
SUB TOTAL FOR SPECIAL F	ROJECTS							\$913
GRAND TOTAL								\$13,370.90
Compiled By: J. Long	_	Date: _	2/14/03	-				

Foster Divide Combination Project No. 2 I6 - I7 Road Improvement Fill Reconstruction Costs

Foster Di	vide Combination	Project No	5, 2 16 - 17 R	oad improveme	nτ	Fill Reconstruc	ction Costs
Points/ Station	Description	C325 # 1	C325 # 2	Rubber Tire Skidder	Truck	Mechanical Tamper with operator	
l6 to 17 48+20	Culvert replacement/ fill reconstruction 6' fill ht,	5 hr	hr	3 hr	2 hr	2 hr	
16 to 17 53+40	Culvert replacement/ fill reconstruction 6' fill ht.	5 hr	hr	3 hr	2 hr	2 hr	
16 to 17 72+25	Culvert replacement/ fill reconstruction 10' fill ht.	16 hr	hr	8 hr	10 hr	3 hr	
16 to 17	Construct 4 riprap energy dissipators.	4 hr					
l6 to l7	Crush and load old culverts to be hauled away.		4 hr				
	Haul away old culverts to an approved refuse site.		, , , , , , , , , , , , , , , , , , ,		6 hr		
	Total	30 hr	4 hr	14 hr	20 hr	7 hr	}
	Rate	\$115	\$115 /hr	\$60 /hr	\$57 /hr	\$34 /hr	
	Cost	\$3,450	\$460	\$840	\$1,140	\$238	\$6,128

#### CRUSHED ROCK COST

SALE NAME:	Foster	Divide Com	bination	_						2/5	
PROJECT:		Project No.	2	ROC	K TYPE:	Cr	ushed	_	BY:	J. L	ong
QUARRY:		reek 4"-0",		•	_	,,		_	,	···· (* ····	
		up 1 1/2"-0"		•							
Road	T	Cubic	<u> </u>	<del></del>	Ol	NE W/	Y HAUL I	N MILES	· · · · · · · · · · · · · · · · · · ·		Total
Segment	Stations	Yards	50 MPH	1 30 MF				15 MPH	10 MPH	5 MPH	Haul
15-16	28.75	2,226			<del>' </del> -			0.20	0.08	0.10	0.38
16-17	86.75	618			-			0.50	0.35	0.10	0.95
16-P1	7.50	360	<b></b>				<del></del>	1 0.00		0.10	0.10
P1-P2	58.70	8,435				+		0.30	0.26	0.10	0.66
P2-P3	47.00	4,135						0.40	0.26	0.10	0.76
			<del></del>	<del></del>				2.00	0.36	0.10	2.46
P3-P4	11.00	1,587		<u> </u>		$\longrightarrow$		2.00	0.36	0.10	2.40
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											41/25-4
TOTAL	239.70	17,361				ı					AVERAGE
1	STA.NO.		į			- 1					HAUL
CUBIC YARD	WEIGHTED	HAUL			<u></u>			0.47	0.24	0.10	0.81
						A۱	verage Ro	und Trip Dista	ince (miles)	1.62	

#### ROCK HAUL:

Truck type:	D20	No. trucks:	2		
Delay min.:	15	Efficiency:	75%	Ave haul: \$1.74 /	/cy
				Load: \$0.40 /	/cy
Truck type:	D12	No. trucks:		Spread: \$0.65 /	cy
Delay min.:	12	Efficiency:	75%	-	
Truck type:	D10	No. trucks:	2	Production: cy/day = 1,14	43
Delay min.:	10	Efficiency:	75%	•	

CRUSHED ROCK HAUL COSTS 17,361 cy @ \$2.79 /cy

#### RIP RAP ROCK COST

ALE NAME: ROJECT:	Foster	Project 2	Dination	ROCK 1	YPE	Rip Rap		DATE:	2/7 J. l	ong
UARRY:		Northrup		NOON I		(ip)(ap		J		-OilB
		1	· · · · · · · · · · · · · · · · · · ·							n
Road Segment	Stations	Cubic Yards	בע אסטן	an MDH		AY HAUL IN		10 Mpul	5 MDL	Tota Hau
15-16		190	30 WIF11	OO MICE	20 141-1	1.00	0.40	0.50	0.10	2.00
16-17	· · · · · · · · · · · · · · · · · · ·	40				1.00	0.40	0.30	0.10	1.80
P1-P2		10	<del>,</del>			1.00	0.50	0.20	0.10	1.80
P3-P4		10			<del></del>	2.00	1.00	0.60	0.10	3.70
						2.55	1.00	- 0.00		1
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TAL		250						,	<del></del>	AVERA
	STA./NO.				;		<u> </u>			HAUL
BIC YARD V	VEIGHTED	HAUL			···············	1.04 verage Rour	0.43	0.46	0.10	2.03
	<del></del>	<del></del>	<del></del>		<i>.</i>	werage rour	id Trip Dista	nce (mies)	4.06	<del></del>
OCK HAUL:					٠					
-		D40	Ma Amonto							
	ruck type:	12	No. trucks: _ Efficiency:	75%		A h	naul: \$3.1	18 /cy		

 Truck type:
 D12
 No. trucks:

 Delay min.:
 12
 Efficiency:
 75%
 Ave haul:
 \$3.18
 /cy

 Load:
 \$1.15
 /cy

 Truck type:
 D10
 No. trucks:
 3
 Develop:
 /cy

 Delay min.:
 10
 Efficiency:
 75%

Production: cy/day = 430

RIP RAP ROCK HAUL COSTS

250 cy @

\$4.33 /cy

Sterling	3			Swell:			
Sec. 23, T4N, R		-		Shrink:	16%		
Clatsop		•					
Bangs		•					
2/12/200		-					
2/12/200	<u>,,,                                  </u>	-					
			STOCKPILE		TRUCK MEAS	1	TOTAL
ROCK SIZE R	REJECT	GRADATION	CU. YDS.		CU. YDS.		CU. YDS.
3/4"-0"	5%	CR	OU. 125.			······································	
1 1/2"-0"	5%	CR				<del></del>	······································
4"-0"	370	CR	10,000		<del></del>	-	11
6"-0"		PR	10,000			_	
24"-6"		RR			<del></del>		<del></del>
24"-6"		KK	<del></del>				
TOTAL CUBIC	~ VADDS	OF BOCK	10,000				11
TOTAL CUBIC	IANDS	OF ROCK.	10,000			<del> </del>	
LIZATION & S	ET HP.						
LIZATION	EI OI.		DISTANCE	DIST.	BASE		
EQUIPMENT M	ORII 17A	TION	IN MILES	FACTOR	RATE	COST	
2Stage Crusher	IODILIZA	TION	75	1.40	\$1,670	\$2,338	
Screening Plants	(1)	<u> </u>	75	1.40	\$450	\$630	
D8 Cat & D6 Cat		· · · · · · · · · · · · · · · · · · ·	75	1.40	\$1,540	\$2,156	
		<del> </del>	75	1.40	\$560	\$784	
Loader			75	1.40	\$1,080	\$1,512	
Drill & Compress	i Ui		75	1.40	\$270	\$378	
Powder T		<del></del>		1.40	\$536	\$750	
4 Dump Trucks			75		\$500	\$730 \$700	
Excavator	D MODE	TO A STONE	75	1.40	1 2000 1		
SUB TOTAL FO	OR MOBII	LIZATION				\$9,248	
COLUDATENET CI	DT I ID		TIMES		RATE	COST	
EQUIPMENT SI	EIUP				\$1,600	\$1,600	
2Stage Crusher	(4)	··	1 1		\$215	\$215	
	(1)		1		\$213	\$213	
Screening Plants	<del>``</del>	<del></del>			1		
Screening Plants	· · · · · ·					•	
Screening Plants	· · · · · · · · · · · · · · · · · · ·						
Screening Plants						•	
Screening Plants							
Screening Plants							
		D. COSTTS				e1 015	
SUB TOTAL FO		P COSTS				\$1,815	
SUB TOTAL FO	DR SET U					\$1,815	\$11.0
SUB TOTAL FO	DR SET U	P COSTS ON & SET UP COSTS				\$1,815	\$11,0
SUB TOTAL FO	DR SET U			,		\$1,815	\$11,6
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,6
SUB TOTAL FO	DR SET U		QUANTITY	UNIT	RATE	\$1,815 COST	\$11,0
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,0
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,0
SUB TOTAL FO TOTAL MOBIL RING & GRUB	DR SET U			UNIT	RATE		\$11,0

TOTAL CLEARING & GRUBBING COSTS

XCAVATION MATERIAL	DESCRIPTIO	N		QUANTITY	UNIT	RATE	COST	
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TOTAL EX	CAVATION	COSTS						·
EVELOP ROCK								
DV DDOX 110 CI.	•		METHOD	%	QUANTITY	RATE	COST	
ROCK	SUMMARY							
Туре	Cu. yd. Vol.	Weight	Ripping		l i	\$1.85		
crushed	11,600	100%	Drill & shoot	100%	11,600	\$1.90	\$22,040	
pit run	0	0	Oversize red		1	\$5.04	1	
=	0	0	Other		1 1			
rip rap Total	11,600	<u> </u>			l			
	11,000							
reject	   OCK DEVELO	) DMENT	COSTS					\$22,0
TOTALK	JCK DEVEL	)1 1V112/1 1 1	COSIS					<u> </u>
ALIBRATION &	TESTING							
DESCRIPTI					NO.	\$/TEST	COST	
	ON				1	\$400	\$400	
Calibrate						<b>4400</b>	φ <del>1</del> 00	
Calibrate						ΦEΩ.	¢250	
Test					5	\$50	\$250	
Test						<u>_</u>		
			<del></del>					
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TOTAL CA	LIBRATION	& TESTI	NG COSTS	W				\$6
EEDING & LOA	DING				1		l momer	
			CU. YD.	Ì	COST		TOTAL	
DESCRIPT			QUANTITY		CU. YD.		COST	
Dig & Feed I	Rock		11,600	]	\$0.65		\$7,540	
				]				
	,							
TOTAL FE	EDING & LO	ADING C	COSTS	<u>.,</u>				\$7,5
OCK CHICITIN	C							
OCK CRUSHIN			CHIVD	CRUSHER	HOURLY	RATE	TOTAL	
ROCK	ROCK		CU. YD.	1	PRODUCTIO	CU. YD.	COST	
SIZE	TYPE		QUANTITY		110	CU. ID.	CO31	
3/4"-0"	crushed			3 stage w/s			1	
1 1/2"-0"	crushed		11 (00	3 stage w/s	120	¢1 71	\$10.00¢	
4"-0"	crushed		11,600	2 stage	140	\$1.71	\$19,886	
					ļ		<b>,</b>	
				•				
				L	<u> </u>		Į.	
grown i v vo	OCK CRUSHI	NO COST		L			I	\$19,8

SUB TOTAL   \$480
SUB TOTAL  HAUL & STOCKPILE  STOCKPILE LOCATION  SIZE TRUCKS  TRUCKS
HAUL & STOCKPILE STOCKPILE LOCATION SIZE TRUCKS 1. Quartz Creek Stockpile to quarry 1 1/2"-0" 3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100  SUB TOTAL  SUB TOTAL  SUB TOTAL  TOTAL STOCKPILING COSTS  ELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard
HAUL & STOCKPILE STOCKPILE LOCATION SIZE TRUCKS 1. Quartz Creek Stockpile to quarry 1 1/2"-0" 3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100  SUB TOTAL  SUB TOTAL  SUB TOTAL  TOTAL STOCKPILING COSTS  ELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard
HAUL & STOCKPILE STOCKPILE LOCATION SIZE TRUCKS 1. Quartz Creek Stockpile to quarry 1 1/2"-0" 3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100  SUB TOTAL  SUB TOTAL  SUB TOTAL  TOTAL STOCKPILING COSTS  ELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard
HAUL & STOCKPILE STOCKPILE LOCATION SIZE TRUCKS 1. Quartz Creek Stockpile to quarry 1 1/2"-0" 3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100  SUB TOTAL  SUB TOTAL  SUB TOTAL  TOTAL STOCKPILING COSTS  ELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard
STOCKPILE LOCATION   SIZE   TRUCKS   CU. YDS.   RATE   COST
1. Quartz Creek Stockpile to quarry 3/4"-0" 1 3,500 \$0.81 \$2,824 2. 11/2"-0" 3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100 4
1 1/2"-0"   3   Quartz Creek
3. Quartz Creek 4"-0" 4 10,000 \$2.61 \$26,100 4
SUB TOTAL  SUB TOTAL  SUB TOTAL \$28,924  TOTAL STOCKPILING COSTS  COST  DESCRIPTION  COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  SS: Construct/Reconstruct Stockpile Floor
SUB TOTAL \$28,924  TOTAL STOCKPILING COSTS  CELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  S: Construct/Reconstruct Stockpile Floor
SUB TOTAL \$28,924  TOTAL STOCKPILING COSTS  CELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  S: Construct/Reconstruct Stockpile Floor
SUB TOTAL \$28,924  TOTAL STOCKPILING COSTS  CELLANEOUS COSTS  DESCRIPTION COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  SS:  Construct/Reconstruct Stockpile Floor
TOTAL STOCKPILING COSTS  DESCRIPTION  COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  SSCRIPTION  COST  **COST
TOTAL STOCKPILING COSTS  DESCRIPTION  COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  SSCRIPTION  COST  **COST
ELLANEOUS COSTS  DESCRIPTION  COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  ss: Construct/Reconstruct Stockpile Floor
ELLANEOUS COSTS  DESCRIPTION  COST  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  ss: Construct/Reconstruct Stockpile Floor
DESCRIPTION  COST  DESCRIPTION  Final Quarry Dev., Access Road Const., Waterbarring, Drainage, Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  es: Construct/Reconstruct Stockpile Floor
Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
Block Quarry Access  TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
TOTAL MISCELLANEOUS COSTS  AND TOTAL:  \$/Cubic Yard  es:  Construct/Reconstruct Stockpile Floor
AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
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AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
AND TOTAL:  \$/Cubic Yard es: Construct/Reconstruct Stockpile Floor
\$/Cubic Yard  es:  Construct/Reconstruct Stockpile Floor
\$/Cubic Yard  es:  Construct/Reconstruct Stockpile Floor
\$/Cubic Yard  es:  Construct/Reconstruct Stockpile Floor
es: Construct/Reconstruct Stockpile Floor
Construct/Reconstruct Stockpile Floor
Equipment nours rate total
Grader \$80.00
Dozer         4         \$120.00         \$480.00         Rock for Floor (CY)         \$/CY Haul         Total           Compactor         \$75.00

\$480.00

\$80.00 \$130.00

Excavator

Total Construct Stockpile Floor \$480.00

#### HAUL and STOCKPILE COST

SALE NAME:	Foster Divide Combination		
QUARRY:	Sterling	ROCK TYPE:	Crushed

Location 1. Quartz Cree				ONE	WAY H	<b>IAUL IN</b>	MILE	S				
3/4"-0"		50 MPH	30 MPH	25 MP	H 20	MPH	15	MPH	10 M	<b>IPH</b>	5	MPI
					1		0	.03	0.05	5	0.	02
Truck type:	OR	No. trucks:	1									
Delay min.:	5	Efficiency:	90%			Δva	haul:	\$0.4	11 /0	Э		
Delay IIIII	J	Linendity.	30 /0				ad:	\$0.2		cy .		
Truck type:	D12	No. trucks:				Stoc	kpile:	\$0.1	15 /0	у		
Delay min.:	12	Efficiency:	75%					**				
Truck type:		No. trucks:			Pr	oduction	n: cy/c	lay =	1,86	8		
Delay min.:	10	Efficiency:	75%									

Location 2.		T			-,		ONE W	AY H	AUL IN	MILE	S				
1 1/2"-0"		50	MPH	30	MPH	25	MPH	20	MPH	15	MPH	10	MPH	5	MPH
						7	.50			1	.30				
Truck type:	D20	No. tr	ucks:												
Delay min.:	15	Effici	ency:	75	%				Ave	haul:	#DI	V/0!	/cy		
									Lo	ad:	#1	I/A	/cy		
Truck type:	D12	No. tr	ucks:						Stoc	kpile:	#N	I/A	/cy		
Delay min.:	12	Effici	ency:	75	%										
Truck type:	D10	No. tr	ucks:					Pro	oduction	n: cy/c	lay =				
Delay min.:	10	Effici	ency:	75	%					-					
Location 2.				1	Haul a	nd S	ockpile	Cos	t		#	DIV/0	/cy		

Location 3. Quartz Creek						-	ONE W	AY H	AUL IN	MILE	S				·
4"-0"		50	MPH	30	MPH	25	MPH	20	MPH	15	MPH	10	MPH	5	MPH
								2	00	C	.43			0	.10
Truck type:	D20	No.	trucks:	. :	2										
Delay min.:	5	_ Effi	ciency: ~	85	5%				Ave	haul:	<b>\$</b> 1.	68	/cy		
									Lo	ad:	<b>\$</b> 0.	28	/cy		
Truck type:	D12	No.	trucks:		2				Stoc	kpile:	\$0.	65	/cy		
Delay min.:	5	Effi	ciency:	85	5%										
Truck type:	D10	No.	trucks:					Pro	duction	1: cy/c	lay =	1,	182		
Delay min.:	5	Effi	ciency:	85	5%					·	-				
Location 3. Qua	rtz Cre	ek			Haul a	nd St	ockpile	Cos				\$2.61	/cy		

Location 4.		ONE WAY HAUL IN MILES												
1	50	MPH	30	MPH	25	MPH	20	MPH	15	MPH	10	MPH	5	MPH
							1	.00	1	.00				
	<del>1</del>			<del></del>										

FOSTER DIVIDE COMBINATION				Project No. 4	Cow Creek Vac	cating. V1 to	V2				
Location/Description	330#1	330#2	D-7 CAT	10 CY Truck #1	10 CY Truck #2	Front End Loader	Grader	Laborer	Straw	Seed	Lowboy Transport
0+00 to 68+90 Waterbar/Block Road	2										
0+00 to 68+90 Salvage 3310 CY Rock				28	28	28	28				
0+00 to 68+90 Rip and Till/Outslope	23							80	400	100	
1+40 to 4+65 Remove Fill	17		2	17	17			4	30	20	
2+10 Remove Culvert	0.5										
4+65 to 6+00 Sidecast Pullback	1.5							1	6	10	
6+00 Remove Culvert	0.5										
7+40 to 9+70 Sidecast Pullback	2.5							2	10	15	
8+80 Remove Culvert/Fill Develop 5' Stream Channel	2		2					2	8	15	
12+75 Remove Culvert/Fill Develop 4' Stream Channel	2		2					2	6	10	
12+75 to 13+50 Sidecast pullback	1							1	5	10	

#### **Road Maintenance after completion of Project Work**

Sale:

Foster Divide Combination

Date:

6-Feb-03

By:

J. Long

Туре	Equipment/Rationale	Hours	Rate	Cost	
	Grader 14G	70	\$80	\$5,600	
Final Haul	Dump Truck 12CY x 3	60	\$57	\$3,420	
Road	FE Loader C966	20	\$75	\$1,500	
Maintenance	Vibratory Roller	70	\$75	\$5,250	
Haul Route	Water Truck 2,500 gallon	70	\$67	\$4,690	
	Labor	10	\$25	\$250	
Total					\$20,7:

Production Rates Grader Vibratory Roller

Miles/day	Distance(miles)	Days
1.5	10.5	7.0
1.5	10.5	7.0

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#### Road Maintenance after completion of Project No. 3 - Sterling Quarry Crushing

Sale:

**Foster Divide Combination** 

Date:

6-Feb-03

By:

Cullen Bangs

Type	Equipment/Rationale	Move-in Rate	Times	Hours	Rate	Cost	
	Grader 14G	\$540	1	20	\$80	\$2,140	
Final Haul	Dump Truck 12CY			10	\$57	\$570	
Road	FE Loader C966			10	\$75	\$750	
Maintenance	Vibratory Roller	\$540	1	20	\$75	\$2,040	
Haul Route	Water Truck 2,500 gallon	\$132	1	20	\$67	\$1,472	
			]				
			1				
Total						1	\$

Production Rates Grader Vibratory Roller

Mitesiday	Distance(influs)	Days
1.5	2.5	1.7
1.5	2.5	1.7

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#### TIMBER CRUISE REPORT

#### FOSTER DIVIDE COMBINATION FY 2003

1. Sale Area Location: Areas 1 - 9 R/W are located in portions of Sections 5, 6, 8, 9, and 16, TôN, R6W, and portions of Sections 31 and 32, T7N, R6W, W.M., Clatsop County, Oregon.

2. Fund Distribution:

**BOF 100%** 

Tax Code

8-01 (50%)

30-05 (50%)

#### 3. Sale Acreage by Area:

Area	Treatment	Gross Acres	Existing R/W	New R/W	Stream Buffer	Net Acres	Survey Method	Closure
1	RD30 Thinning	52	0	0.4	2.6	49	GIS	N/A
2	RD30 Thinning	62	0	0.6	7.4	54	GIS	N/A
3	RD35 Thinning	251	4.0	2.0	31.0 *	214	GIS	N/A
4	RD30 Thinning	39	0	1.2	1.8	36	GIS	N/A
5	Clearcut	68	1.5	0.5	3.0	63	GIS	N/A
6A	RD30 Thinning	51	0	0.6	2.4	48	GIS	N/A
6B	Clearcut	52	0	0.7	2.3	49	GIS	N/A
7	Clearcut	74	0.3	0	5.7 **	68	GIS	N/A
8 R/W	New Roads	0	0	6.0	0	6	LXW	N/A
9 R/W	New Roads	0	0	9.0	0	9	LXW	N/A
TOTALS		649	5.8	15	55.2	596		

- \* Area 3 stream buffers include 22 acres of non-thinnable hardwood types.
- \*\* Area 7 stream buffers include 2 Green Tree Retention Areas.
- 4. Cruisers and Cruise Dates: Areas 1 9 R/W were cruised by Kevin Berry, Lanny Freeman, Alan Kelso, Jenny Laughman, Jon Long, Tom Scoggins, and David Wolfgram, in November/December, 2002.
- 5. Cruise Method and Computation: AREAS 1, 4, and 6A are "auto-mark" thinning units (RD 30), and were variable plot cruised using a 27.78 BAF. A total of 56 plots were sampled, with 29 measured and graded, and 27 count. These plots are located on a 9 chain by 3 chain grid. All "take" and "leave" trees were measured and graded. All alder 10' dbh and greater are "take" trees. Areas 1 and 4 were combined separately for volume computation. Area 6A was combined with Area 2 because of similarities in timber types.

AREA 2 is an "auto-mark" partial cut unit with conifer patches thinned to RD 30, and was variable plot cruised using a 40 BAF for conifer and a 33.61 BAF for hardwoods. These plots are located on a 10 chain by 3 chain grid, with every third plot measured and graded. A total of 20 plots were sampled, with 8 measured and graded, and 12 count. All alder 10' dbh and greater are "take" trees. Areas 2 and 6A were combined for volume computation.

2

#### **Foster Divide**

AREA 3 is an "auto-mark" thinning (RD 35), and was variable plot cruised using a 27.78 BAF. These plots were sampled on transects with plots on a 3 chain spacing. See cruise map for details. A total of 44 plots were sampled, with 21 measured and graded, and 23 count.

AREAS 5, 6B, and 7 are clearcut units and were variable plot cruised using a 40 BAF for conifer and a 33.61 BAF for hardwoods. These plots are located on a 10 chain by 3 chain grid, with every third plot measured and graded. A total of 52 plots were sampled, with 17 measured and graded plots, and 35 count plots.

AREA 8 R/W, in-sale Right-of Way, volume was calculated by multiplying R/W acreage and the average volume per acre from the plots in Areas 1-7.

AREA 9 R/W, out-of-sale Right-of Way was variable plot cruised using a 40 BAF. A total of 20 plots were sampled on a 5.3 chain spacing. All plots were measured and graded.

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

AREA	CRUISE	CRUISE TYPE
1 & 4	RD 30 Auto-mark Thinning	7N 6W SEC 6 TRACT: A 1 4 PC TYPE:TAKE
2 & 6A	RD 30 Auto-mark Thinning	6N 6W SEC 6 TRACT: À 2 6A PC TYPE: TAKE
3	RD 35 Auto-mark Thinning	7N 6W SEC 31 TRACT:AREA 3 TYPE:TAKE
5, 6B, & 7	Clearcuts	7N 6W SEC 32 TRACT:A 5 6B 7 CC TYPE:CC
8 R/W	In-Sale Right-of-way	7N 6W SEC 31 TRACT:AREA 8 R/W TYPE:8RW
9 R/W	Out-of-Sale Right-of-way	6N 6W SEC 20 TRACT:BOVINE ML TYPE:9RW

Timber Description: Areas 1 & 4 are "auto-mark" thinning units, age 60 to 65 years old, consisting of dense Douglas-fir stands with alder patches. The conifer in these stands will be thinned to an RD of 30, with a target basal area of 140 ft2. Hardwoods and cedar will not be harvested. Approximately 75 trees per acre and 17.7 MBF/acre (net) will be harvested from these stands. The average Douglas-fir "take" tree size is 16.6" DBH and 61 feet to a merchantable top (6" d.i.b.).

Areas 2 & 6A are "auto-mark" partial cut units, age 65 to 68 years old, red alder stands with scattered conifer patches. The conifer in these stands will be thinned to an RD of 30, with a target basal area of 120 ft². Cedar will not be harvested. Approximately 85 trees per acre and 11.7 MBF/acre (net) will be harvested from these stands. The average Douglas-fir "take" tree size is 22.2" DBH and 82 feet to a merchantable top (6" d.i.b.). The average alder tree size is 15" DBH and 35 feet to a merchantable top (8" d.i.b.).

Area 3 is an "auto-mark" thinning, about 55 to 65 years old, consisting of Douglas-fir dominated stands with clumps of non-thinnable hardwoods along the draws. These stands will be harvested to an RD of 35, with a target basal area of 140 ft2, while removing approximately 67 trees per acre and 15,3 MBF/acre(net). The average "take" tree size is 16.4" DBH and 70 feet to a merchantable top (6" d.i.b.).

Areas 5, 6B, and 7 are clearcut units, ranging from 55 to 68 years old, consisting of mixed Douglas-fir and hardwood stands. The Douglas-fir averages 19.1" DBH, with an average merchantable height of 63 feet to a merchantable top(6" d.i.b.). The average alder tree size is 14" DBH and 37 feet to a merchantable top (8" d.i.b.). The average volume per acre to be harvested (net) is 25.5 MBF.

Area 8 R/W (In-sale R/W) is similar to the timber description mentioned above for Areas 1-7. The average volume (net) is 39.1 MBF/acre.

Area 9 R/W (Out-of-sale R/W) is a mixed Douglas-fir and hardwood stand. This stand averages 16 inches in DBH, with an average merchantable height of 51 feet to a merchantable top. The average volume (net) is 20.1 MBF/acre.

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

Statistics for "Take" tree B.F. volumes

Atea	Estimated CV	Target SE%	Actual CV	Actual SE%
1 and 4	60%	12%	86.2%	14.2%
2 and 6A	70%	12%	112.7%	19.0%
3	60%	12%	85.1%	12.8%
5, 6B, and 7	55%	8%	63.8%	8.8%
9 R/W	65%	12%	85.1%	19%

Statistics for total stand (Take and Leave trees combined) B.F. volumes

Area	Estimated CV	Target SE%	Actual CV	Actual SE%
1 and 4	50%	7%	37.3%	6.1%
2 and 6A	70%	7%	77.4%	13.1%
3	50%	7%	38.6%	5.8%
5, 6B, and 7	55%	8%	63.8%	8.8%
9 R/W	65%	12%	85.1%	19%

Combined SE% for all "take" tree b.f. volumes is 6.0%. See combined statistics calculations on attached worksheet.

**8.** Volumes by Species and Log Grade: (See "Species, Sort, Grade - Type and Project Reports, attached, of individual sale areas and combined areas and five 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	D & B	% Sale
Douglas-fir	19	8,591	5,792	2,385	414	137	78
Alder	14	1,794		1,440	354	31	16
Maple	17	7			7	0.4	0
Hemlock	15	640	158	429	53	6	6
TOTALS		11,032					

9.	Ap	pro	vals:
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Prepared by: Jon Long

Date: January 22, 2003

Reviewed by:

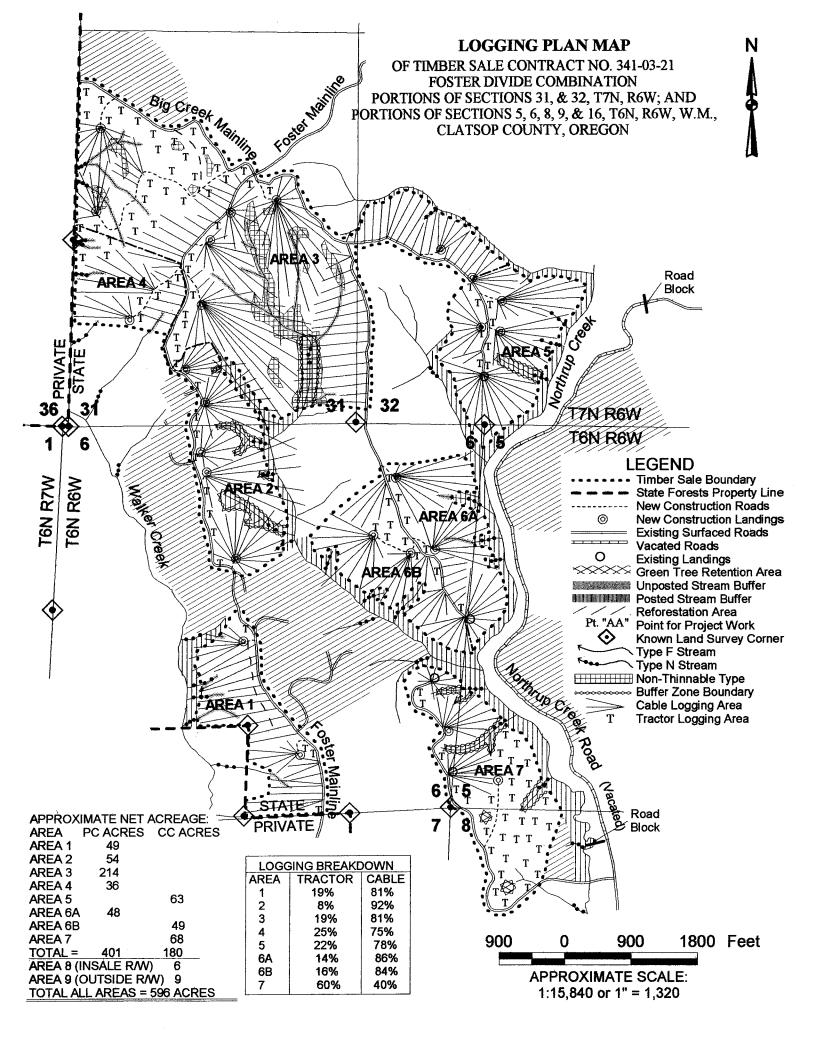
Date: 1/29/03

10. Attachments:

Cruise Designs (4)

Cruise Maps (5)

Volume Reports - 9 pages Statistics Reports - 14 pages Stand Tables - 4 pages Statistics Calculations



## FOREST PRACTICES ACT "WRITTEN PLAN" For Project No. 2 - Northrup Creek Road Improvement Foster Divide Combination Timber Sale

Landowner: Oregon Department of Forestry

92219 Hwy 202 Astoria, OR 97103 (503) 325-5451

Protected Resources: Northrup Creek, large Type F stream, located in Section 16, T6N, R6W, W. M., Clatsop County, Oregon. A "written plan" is required for any activities within 100 feet of any Type F stream.

#### Situation:

- 1) ODF plans to widen, re-align, and improve 0.5 miles of the Lower Northrup Creek Road, shown on the attached Exhibit A, as I5 to I6. Portions of Northrup Creek Road are within 100 feet of a Large Type F stream. The first half mile of Northrup Creek Road on ODF land (just past the County Road) in Section 16 will be widened, re-aligned, and improved with new surfacing rock. New surface culverts will be added, and old deteriorated culverts will be replaced. Approximately 20 trees within the RMA will need to be removed to facilitate proper road reconstruction. The remaining number of trees within the affected portion of the RMA exceeds those required by the FPA for a large, Type F stream. No trees will be removed within 20 feet of the high water level of the stream channel.
- 2) Streambank erosion is occurring at a bend in Northrup Creek, impacting the stability of Northrup Creek Road. The portion of the road impacted by this, will be realigned into the hillside, and riprap rock will be used to armor the fill slope and stop erosion of the road prism adjacent to the stream bank.

#### **Resource Protection Measures:**

- 1) All timber will be felled parallel to or away from protected waters.
- 2) New surface culverts will drain runoff from ditchline away from streams, and into areas that will allow sediment to filter before entering Northrup Creek.
- 3) Track mounted excavator type equipment shall be used for embankment excavation and riprap placement.
- 4) Excavated embankment materials will be hauled to approved waste areas, sloped for drainage and left in a stable condition.
- 5) Erosion control measures shall be applied to all exposed excavation areas, bare soils and waste materials.
- 6) All road improvement work described in (1) above, will be done during favorable weather conditions between May 1 and September 30.
- 7) Work described in (2) above, will be done during the in-water work period from July 1 to August 31.
- I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operations conducted within 100 feet of Type F streams. I agree to the protection measures listed on this plan:

LANDOWNER	Date
OPERATOR AMU	Date
FOREST PRACTICES FORESTER	Date

Attachments: Exhibit A

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#### FOREST PRACTICES ACT "WRITTEN PLAN" For Harvest of Foster Divide Combination and Stream Enhancement of Northrup Creek

Landowner: Oregon Department of Forestry

92219 Hwy 202 Astoria, OR 97103 (503) 325-5451

Situation: A written plan is required for any activity within 100 feet of a Type F Stream.

**Protected Resources:** Type F streams located in portions of Sections 31 and 32 T7N, R6W, and Sections 5, 6, and 8, T6N, R6W, W.M., Clatsop County, Oregon, as shown on the attached Exhibit A.

#### **Specific Site Characteristics:**

Northrup Creek: A low gradient stream reach, characterized by wide valley flood plains, frequent stream meanders and "deep valley fill." The stream reach gradient is approximately one percent and bank full width is approximately 24 feet. Streamside vegetation is dominated by mature alder, with a significant component of conifer trees which are located above the flood plain.

Type F tributaries to Northrup Creek: The streambeds are approximately 7-9 feet wide, with moderate streambank slopes. Streamside vegetation is also dominated by mature alder, with conifer trees located mostly above the flood plain.

Walker Creek: The streambed is approximately 12 feet wide, with moderate streambank slopes. Streamside vegetation is dominated by mature alder with scattered conifer trees.

#### Tree and Vegetation Retention:

- 1) Northrup Creek (Large Type F): The FPA defines the RMA width of a Large, Type F stream at 100 feet. The timber sale boundary for Areas 5, 6A, and 7 are posted a minimum 100 feet from the stream channel.
- 2) Walker Creek (Large Type F): The FPA defines the RMA width of a Large, Type F stream at 100 feet. The timber sale boundary for Area 1 is posted a minimum 100 feet from the stream channel.
- 3) Unnamed Tributaries of Northrup Creek (Small Type F): The FPA defines the RMA width of a Small, Type F stream at 50 feet. The posted buffers on the Type F streams in Areas 5, 6B, and 7 are a minimum 100 feet wide. The posted buffers on the Type F streams in Areas 2 and 3 are a minimum 75 feet wide.

#### Practices:

1) Directional felling parallel to the stream will be required to prevent trees from entering the aquatic area. No ground based logging equipment will be permitted inside the posted RMA. Cable corridors may be strung through the RMA and will be located no closer than 100' feet apart. Cable lines will not be lowered into the RMA during yarding.

#### Page 2 of 2

## FOREST PRACTICES ACT "WRITTEN PLAN" For Harvest of Foster Divide Combination and Stream Enhancement of Northrup Creek

2) Areas 5, 6A, and 7: Ten stream enhancement structures will be created by the PURCHASER for stream improvement as recommended by ODFW fisheries biologist. Each structure will be created by placing 5 conifer logs in Northrup Creek during cable yarding operations. The logs will be lowered into the stream at locations specified by State, and with consultation from an ODFW fisheries biologist. All conifer logs will be taken from the sale area and not from within the stream buffer. If cables do not pass through the RMA of Northrup Creek, PURCHASER will create three stream enhancement structures using ground based equipment. These structures will be created using up to 15 logs at each location. This work will take place during the instream work period (July 1 – August 31) if possible. If the work cannot be done during the designated instream work period an ODFW fisheries biologist will be consulted to field verify any fish habitat concerns and approve any work to be conducted outside the designated period.

Attachment	s: Exhibit A Logging Plan Map		
Submitted: _		Date:	
	Purchaser/Operator Contract Representative		
Approved:		Date:	
	State Lands Forester		
Approved: 🚣	anu	Date:	
	Forest Practices Forester		

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## FPA "Written Plan" For Project No. 4. Cow Creek Road Vacating Foster Divide Combination Timber Sale 341-03-21 Portions of Sections 4, 9, and 16, T6N, R6W, W.M., Clatsop County Oregon

Landowner:

Oregon Department of Forestry

92219 Hwy 202 Astoria, OR 97103 (503) 325-5451

#### **Protected Resources:**

- 1) Cow Creek, which is designated as a Large Type F stream, is located within 100 feet of the road vacating project in portions of Sections 4, 9, and 16, T6N, R6W, W.M., Clatsop County, Oregon. Length of the affected stream requiring protection is approximately 7000 feet.
- 2) Unnamed Tributary of Cow Creek, which is designated as a Medium Type F stream, is located within 100 feet of the road vacating project in Section 9, T6N, R6W, W.M., Clatsop County, Oregon. Length of the affected stream requiring protection is approximately 300 feet.

<u>Situation</u>: The existing Cow Creek road is located in close proximity to Cow Creek, a Large Type F stream and an unnamed tributary of Cow Creek, a Medium Type F stream. Transportation planning has revealed an opportunity to relocate this road to a nearby ridge top.

In this project, Cow Creek road will be vacated and put to bed, fills will be removed and the stream channel will be restored. At risk sidecast material within 20 feet of the outside edge of the road prism will be pulled back and re-sloped as shown in Exhibit H. Removal of vegetation and trees within the RMA will be necessary in order to satisfactorily complete sidecast and fill removal in some areas. Removal of trees and vegetation within the RMA will be minimized in order to protect riparian resources and will be left on-site, in stable locations. Further detailed work specifications for this project are included as Project No. 4 of the Foster Divide Combination Timber Sale Contract shown/described in Exhibits A, F, G, and H.

#### **Specific Site Characteristics:**

- 1) <u>Cow Creek.</u> A relatively low gradient stream reach characterized by a moderate-width valley flood plain, and deep valley fill. Stream sediments are principally sedimentary in origin with intermixed igneous rocks (e.g. intermixed sedimentary fines, gravels, cobbles and boulders). The stream reach gradient is approximately three percent and bank full width is approximately 18 feet. The stream banks are relatively gentle and riparian vegetation is predominantly red alder with intermixed salmonberry, shrubs and grasses.
- 2) <u>Unnamed Tributary of Cow Creek.</u> The active bank-full channel width is approximately 6 to 8 feet with an associated floodplain that is 21 feet in width. Streamside vegetation is dominated by mature alder, with a minor component of conifer trees.

#### **Resource Protection Measures:**

- 1) Work will be performed only during dry weather periods, low water stream flows, and between July 1 and August 31, annually.
- 2) Machine activity in stream channels will be minimized. All excavation and removed fill placement will be performed using a minimum 1 ½ cubic-yard track-mounted excavator.
- 3) De-watering of existing fills and development of the stream channel will be accomplished by use of coffer dams, temporary diversion ditches, or drainage structures and/or damming and pumping.

## FPA "Written Plan" For Project No. 4. Cow Creek Road Vacating Foster Divide Combination Timber Sale 341-03-21 Portions of Sections 4, 9, and 16, T6N, R6W, W.M., Clatsop County Oregon

- Disturbance to existing vegetation will be minimized. Trees removed within the RMA will not be removed as designated timber and will be left in the RMA, in stable locations.
   Excavated fill materials will be used for recontouring slopes or placed in approved waste areas and left in a
- stable condition.

  6) Bare soils shall be grass seeded and/or mulched with a straw mulch approved by STATE. Applied mulch shall
- be a minimum of 2 inches deep and provide a uniform cover.

<u>Aquatic Protection:</u> Debris entering the RMA or aquatic area will be removed by the end of operations each day or as soon as possible and placed in a stable location, unless an alternate practice is approved by STATE.

I, the undersigned, submit this written plan in compliance with the requirements in the Forest Practices Act regarding the operations conducted within 100 feet of Type F streams. I agree to the protection measures listed on this plan:

Submitted:		Date:	
_	Purchaser/Operator Contract Representative		
Approved:		Date:	
,	State Lands Forester		•
Approved: 6	ame	Date:	
	Forest Practices Forester		

Attachments: Exhibit A, F, G, and H

Original: Salem

CC: Operator, Purchaser, District file, Salem, Eng. Unit, Jewell Unit