

OREGON DEPARTMENT OF FORESTRY

TIMBER SALE APPRAISAL

COST SUMMARY

Timber Sale Name :	West Standard
Timber Sale Number :	341-02-29
ODF District / Unit :	TILLAMOOK / NORTH UNIT
Gross Timber Sale Value :	\$2,052,888
Minus Project Work :	\$ 691,408
Net Timber Sale Value : (Advertised Value)	\$1,361,480

SALE 2-29
 WEST STANDARD
 TILLAMOOK
 LOC: SEE COMMENTS
 COMMENTS:

PREPARED BY:
 CHRIS WOODWARD
 PREPARATION DATE 07/09/01
 ING 0 LOGGING COST DATE 01/10/81
 PVR 1 POND VALUE DATE 2QTR2001

PORTIONS OF SECTIONS 7,8,17,18,19,21,29,30,
 T2N,R7W,AND 12,13,23,24,25,26,T2N,R8W,
 W.M.,TILLAMOOK COUNTY, OREGON
 HARDWOODS: \$475 - \$258.13 = \$216.87
 SEE ATTACHED SHEET FOR ADDITIONAL COST

***** TIMBER DESCRIPTION *****

STAND STOCKING 40% SNAG COUNT 0 0"

	DF	WH/WF	SS	WRC	RA	SP	PP	WP	IC
AVERAGE DBH	10	11	0	0	0	0	0	0	0
AMORTIZED %	0	0	0	0	0	0	0	0	0
RECOVERY %	95	95	100	100	100	100	100	100	100

VOLUME BY GRADE

1P	0	0	0	0	0	0	0	0	0
2P	0	0	0	0	0	0	0	0	0
3P	0	0	0	0	0	0	0	0	0
P	0	0	0	0	0	0	0	0	0

SM	0	0	0	0	0	0	0	0	0
1S	0	0	0	0	0	0	0	0	0
2S	813	0	0	0	0	0	0	0	0

3S	6507	70	0	0	0	0	0	0	0
4S	813	0	0	0	0	0	0	0	0
5S	0	0	0	0	0	0	0	0	0
6S	0	0	0	0	0	0	0	0	0

SELECT	0	0	0	0	0	0	0	0	0
SC	0	0	0	0	0	0	0	0	0
UTILITY	0	0	0	0	0	0	0	0	0
CR	0	0	0	0	0	0	0	0	0
WORMY	0	0	0	0	0	0	0	0	0
PULP	0	0	0	0	0	0	0	0	0
POLES/PILING	0	0	0	0	0	0	0	0	0

TOTAL	8133	70	0	0	0	0	0	0	0

GRAND TOTAL 8203

SALE 2-29
WEST STANDARD

***** LOGGING COSTS *****

COMB 1 DF 95% WH/WF 95% SS 0% WRC 0% RA 0% SP 0% PP 0% WP 0% IC 0%
YARDING METHOD 7 SJ5 SLOPE 50% YARDING DISTANCE 450 %UPHILL 100%
#LANDINGS 99 #TAILHOLDS 0
LOADING METHOD 4T SJ5 TRAK

COMB 2 DF 5% WH/WF 5% SS 0% WRC 0% RA 0% SP 0% PP 0% WP 0% IC 0%
YARDING METHOD 5 D4 SLOPE 20% YARDING DISTANCE 200 %UPHILL 50%
#LANDINGS 9 #TAILHOLDS 0
LOADING METHOD 4T SJ5 TRAK

HAUL COSTS:				I	ROAD MAINT COSTS:			I	# SEASONS 2.4
	\$ /	TRIPS	MBF/	I				I	
	MBF	/DAY	LOAD	I				I	
DF	0.00	2	3.3	I	\$/MBF	\$ 5.72		I	PROFIT & RISK 20%
WH/WF	0.00	3	3.3	I				I	
SS	0.00	0	0.0	I	OR MILES OF:			I	
WRC	0.00	0	0.0	I				I	
RA	0.00	0	0.0	I	DIRT		0.0	I	
SP	0.00	0	0.0	I	ROCK (CONT ROCK)		0.0	I	
PP	0.00	0	0.0	I	ROCK (STATE ROCK)		0.0	I	
WP	0.00	0	0.0	I	PAVED		0.0	I	
IC	0.00	0	0.0	I				I	

PROJECT COSTS	\$ 691408.00
SLASH DISPOSAL COSTS	\$ 876.00
OTHER COSTS INCLUDING P&R	\$ 622695.00
OTHER COSTS NOT INCLUDING P&R	\$ 18590.00

FIXED COSTS ARE NOT ASSIGNED TO RED ALDER

SALE 2-29
WEST STANDARD

***** APPRAISAL *****

	DF	WH/WF	SS	WRC	RA	SP	PP	WP	IC
LOGGING COSTS									
FALL &BUCK	21.11	21.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
YARDING	50.88	50.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LOADING	10.64	10.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROAD MAINT	6.02	6.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRE PROT	0.79	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HAULING	69.16	46.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	75.91	75.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL	234.51	211.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROF & RISK	46.90	42.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SLASH DISP	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCALING	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	2.27	2.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	285.79	258.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AMORTIZATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

POND VALUE	537.50	340.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STUMPAGE	251.71	81.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AMORTIZED	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

***** SUMMARY *****

AMORTIZED				UNAMORTIZED			
DF	OMBF	\$	0.00=\$	0.0	8133MBF	\$	251.71=\$2047157.43
WH/WF	OMBF	\$	0.00=\$	0.0	70MBF	\$	81.87=\$ 5730.90
SS	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
WRC	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
RA	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
SP	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
PP	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
WP	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
IC	OMBF	\$	0.00=\$	0.0	OMBF	\$	0.00=\$ 0.0
TOTAL		\$		0.0		\$	2052888.33
						\$	2052888.33

ROUNDED TOTALS: CASH SALE \$ 2052889 RECOVERY SALE \$ 2052888.33

***** OFFICE USE *****

BID PRICE PER MBF: DF _____ WH/WF _____ SS _____ WRC _____ RA _____
 SP _____ PP _____ WP _____ IC _____

ESTIMATED TOTAL OR LUMP SUM PRICE \$ _____

SALE DATE: _____ TERMINATION DATE: _____

PURCHASER: _____ # QUALIFIED BIDDERS: _____

Additional Costs

West Standard



Cable Yarding Volume:	7793 MBF
Ground Yarding Volume:	410 MBF
Total Sale Volume:	8203 MBF

ADDITIONAL COSTS - PROFIT & RISK TO BE ADDED							
Harvesting and Layout	Cost / MBF		Volume (MBF)				
Locate Corridors & Skid Roads:	\$ 5	x	8203	=		\$41,015	
Tree Selection & Fall to Lead:	\$ 40	x	8203	=		\$328,120	
						\$369,135	
Yarding & Loading:	Cost / MBF		Volume (MBF)				
Rig Skyline Corridors:	\$ 8	x	7793	=		\$62,344	
Clear Chute at Cable Settings:	\$ 10	x	7793	=		\$77,930	
Brand & Paint:	\$ 2	x	8203	=		\$16,406	
Lateral Line Pulling:	\$ 10	x	8203	=		\$82,030	
Cost/Each						\$238,710	
Additional Landings (in excess of 99)	\$ 75	x	198	=		\$14,850	
						\$14,850	
OTHER COSTS TOTAL						\$622,695	
ADDITIONAL COSTS - PROFIT & RISK INCLUDED							
Non-Project Roads							
	Road 1	9	Stations	x	\$ 50	=	\$450
	Road 2	7	Stations	x	\$ 65	=	\$455
	Road 3	10	Stations	x	\$ 65	=	\$650
	Road 4	8	Stations	x	\$ 50	=	\$400
	Road 5	3	Stations	x	\$ 50	=	\$150
****	Road 6	5	Stations	x	\$ 400	=	\$2,000
	Road 7	17	Stations	x	\$ 65	=	\$1,105
	Road 8	22	Stations	x	\$ 110	=	\$2,420
	81					Total	\$7,630
		Stations	x	Yrd ³	x	\$/Yard	
Pit Run Rock	10			66	x	\$6.00	\$3,960
						\$ 4,000	
*Ditch Pulling and End Haul (per station)						\$ 3,000	
** Dust Abatement (per season)						\$ 18,590	
OTHER COSTS TOTAL						\$ 18,590	

ROAD MAINTENANCE					
	\$/Mile	MMBF	Miles		\$/MBF
**Grading:	\$500	8.20	14		\$350
	\$/Yd	MMBF	Miles	CuYd	\$/MBF
***Surfacing:pit run	\$6.00	8.20	1	20	\$0.12
***Surfacing:crushe	\$15.00	8.20	7	20	\$2.10
TOTAL ROAD MAINTENANCE COST / MBF:					\$5.72
*Includes cost for excavating, hauling, compaction, and sediment control devices.					
**Assumes grading the road once per 2 MMBF					
***Assumes 20 cy for normal maintence /MMBF/mile					
****Includes \$1,750 to remove log culvert and fill material.					

Sale: **West Standard**

IMPROVEMENT

Point	A to B	621+80	stations =	\$280,629.47
Point	C to D	280+40	stations =	\$266,007.94
Point	E to F	28+45	stations =	\$15,978.21
Point	G to H	43+65	stations =	\$20,261.93
Point	I to J	44+00	stations =	\$45,033.95
Point	K to L	25+50	stations =	\$12,261.31
Point	M to N	46+00	stations =	\$42,867.17
SUBTOTAL IMPROVEMENT				\$683,039.99

SPECIAL PROJECTS

Install culverts at points O,P and Q	\$1,460.60
Remove Old Culverts from STATE Land	\$1,495.48
SUBTOTAL SPECIAL PROJECTS	\$2,956.08

MOVE IN **\$5,411.99**

GRAND TOTAL **\$691,408.06**

SUMMARY OF CONSTRUCTION COST

Sale:	West Standard						Road: Segment A to B
Construction -	_____ stations _____ miles		Improvement -	_____ 621+80 _____ 11.78	stations miles		
CLEARING AND GRUBBING -							
Scattering		9.80 acres @	\$790.00 per acre =	\$7,742.00			
			TOTAL CLEARING AND GRUBBING				\$7,742.00
EXCAVATION							
		62 sta. @	\$65.00 per sta. =	\$4,030.00			
Widening (drill & shoot)		2420 cys. @	\$3.84 per c.y. =	\$9,292.80			
Widening (rippable)		1100 cys. @	\$2.24 per c.y. =	\$2,464.00			
Widening (common)		700 cys. @	\$1.40 per c.y. =	\$980.00			
Sediment catch basins		3 hrs. @	\$115.00 per hrs. =	\$345.00			
			TOTAL EXCAVATION				\$17,111.80
ENDHAUL							
Waste area @ 312+00		3320 cys. @	\$3.42 per c.y. =	\$11,354.40			
Waste Area @ 312+00		900 cys. @	\$6.39 per c.y. =	\$5,751.00			
			TOTAL ENDHAUL				\$17,450.40
CULVERTS - MATERIALS & INSTALLATION							
	Culverts						
	536 LF of 18"	\$8,308.00		254 LF of 24"	\$4,676.14		
	36 LF of 30"	\$792.00		0 LF of 36"	\$0.00		
	0 LF of 42"	\$0.00		0 LF of 48"	\$0.00		
	0 LF of 54"	\$0.00		0 LF of 60"	\$0.00		
		\$9,100.00			\$4,676.14		
	Half Rounds						
	120 LF of 21"	\$1,424.40		30 LF of 30"	\$462.00		
	0 LF of 36"	\$0.00		0 LF of 42"	\$0.00		
	0 LF of 48"	\$0.00		0 LF of 54"	\$0.00		
	0 LF of 60"	\$0.00		0 LF of 66"	\$0.00		
		\$1,424.40			\$462.00		
	Culvert Stakes						
	30 stakes	\$240.00					
	27 markers	\$162.00					
				TOTAL CULVERTS			\$16,064.54
SURFACING-							
Sta. 0+00 - 225+25	7,834 cy. of	3"-0"	@	\$11.40 per c.y.=	\$89,304.87		
Sta. 225+25 - 298+10	3,225 cy. of	3"-0"	@	\$12.92 per c.y.=	\$41,665.88		
Sta. 298+10 - 369+50	1,697 cy. of	2 1/2"-0"	@	\$15.49 per c.y.=	\$26,285.94		
Backfill & Junction	282 cy. of	3"-0"	@	\$12.92 per c.y.=	\$3,643.34		
369+50 - 513+05	7,868 cy. of	Pitrun	@	\$5.48 per c.y.=	\$43,116.64		
Rip rap - 239+75 - 342+20	80 cy. of	Medium	@	\$5.39 per c.y.=	\$431.20		
Rip rap - 342+20 to - 620+3	190 cy. of	Medium	@	\$5.68 per c.y.=	\$1,079.20		
				TOTAL SURFACING			\$205,527.07
SPECIAL PROJECTS							
Construct waste area - 4 hours @ \$130.30/hr					\$520.00		
Compact waste @ waste area - 4220 cy. @ \$.30/cy					\$1,266.00		
Compact subgrade - 0+00 to 369+50 @ \$11/Sta.					\$4,064.50		
Rip subgrade & ditchlines - 8 hrs @ \$130.30/hr					\$1,042.40		
Remove large stump @ sta. 272+20 & backfill & compact - .76 hrs @ \$130/hr					\$98.80		
Grade and shape subgrade - .27 miles @ \$736/mile					\$198.72		
Grade and shape subgrade - 5.38 miles @ \$378/mile					\$2,033.64		
Grade and shape subgrade - 2.7 miles @ \$850/mile					\$2,295.00		
Grade and shape subgrade - 3.43 miles @ \$620/mile					\$2,126.60		
Handheld compactor -					\$45.00		
Straw bales for sediment - 15 @ \$5.00/ea					\$75.00		
Mulch - 1.42 acres @ \$1000/acre					\$1,420.00		
Seed and fertilize - 8.6 acres @ \$180/acre					\$1,548.00		
				TOTAL SPECIAL PROJECTS			\$16,733.66

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GRAND TOTAL

\$280,629.47

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Road: Segment C to D

Construction - _____ stations Improvement - 280+40 stations
 _____ miles _____ miles

CLEARING AND GRUBBING -

Scattering	19.00 acres @	\$790.00 per acre =	\$15,010.00	
Waste Area	0.50 acres @	\$877.00 per acre =	\$438.50	
Endhaul	0.31 acres @	\$1,500.00 per acre =	\$465.00	
TOTAL CLEARING AND GRUBBING				\$15,913.50

EXCAVATION

	70 sta. @	\$65.00 per sta. =	\$4,550.00	
Widening (common)	2590 cys. @	\$1.15 per c.y. =	\$2,978.50	
Widening (Rippable)	450 cys. @	\$3.19 per c.y. =	\$1,435.50	
Drill & shoot ditchlines and boulders from subgrade	250 cys. @	\$3.84 per c.y. =	\$960.00	
Ditchline sluff	150 cys. @	\$1.15 per c.y. =	\$172.50	
Pullback	3430 cys. @	\$1.50 per c.y. =	\$5,145.00	
Sediment catch basins	2 hrs. @	\$115.00 per hrs. =	\$230.00	
TOTAL EXCAVATION				\$15,471.50

ENDHAUL

Waste Area # 1: Sta. 7+20 of segment E to F	3610 cys. @	\$2.00 per c.y. =	\$7,220.00	
Waste Area # 2: Sta. 11+00 of segment I to J	1630 cys. @	\$2.19 per c.y. =	\$3,569.70	
Waste Area # 3: Sta. 201+15 of segment C to D	1630 cys. @	\$1.88 per c.y. =	\$3,064.40	
TOTAL ENDHAUL				\$13,854.10

CULVERTS - MATERIALS & INSTALLATION

Culverts

694 LF of 18"	\$10,757.00	402 LF of 24"	\$7,400.82
92 LF of 30"	\$2,024.00	40 LF of 36"	\$1,237.60
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	\$0.00	0 LF of 60"	\$0.00
	<u>\$12,781.00</u>		<u>\$8,638.42</u>

Half Rounds

260 LF of 21"	\$3,086.20	60 LF of 30"	\$924.00
40 LF of 36"	\$866.40	0 LF of 42"	\$0.00
0 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	\$0.00	0 LF of 66"	\$0.00
	<u>\$3,952.60</u>		<u>\$924.00</u>

Culvert Stakes

72 stakes	\$576.00
42 markers	\$252.00

TOTAL CULVERTS \$27,124.02

SURFACING-

Sta. 0+00 - 141+40	5,547 cy. of 3"-0"	@	\$15.94 per c.y. =	\$88,417.25
Sta. 141+40 to 280+40	8,793 cy. of Pitrun	@	\$9.97 per c.y. =	\$87,666.21
Sta. 0+00 - 141+40	70 cy. of Rip rap	@	\$7.72 per c.y. =	\$540.40
Sta. 141+40 to 253+35	170 cy. of Rip rap	@	\$6.34 per c.y. =	\$1,077.80
TOTAL SURFACING				\$177,701.66

SPECIAL PROJECTS

Construct waste areas - 6 hours @ \$130.30/hr	\$781.80	
Construct 55' radius curve and improve approach at point "C"	\$245.30	
Construct 37 turnouts - 6.2 hours @ \$130.30/hr	\$807.86	
Compact waste @ waste area - 6870 cy. @ \$.30/cy	\$2,061.00	
Compact subgrade prior to rocking - 280.4 stations @ \$11/sta.	\$3,084.40	
Rip subgrade & ditchlines - 10 hrs @ \$130.30/hr	\$1,303.00	
Remove large stump @ sta. 198+85 & backfill & compact - .75 hrs @ \$130/hr	\$97.50	
Grade and shape subgrade - 5.31 miles @ \$850/mile	\$4,513.50	
Handheld compactor-	\$144.60	
Straw bales for sediment catch basins & culverts near wilson r. - 15 @ \$5.00/ea	\$75.00	
Mulch - 1.67 acres @ \$1000/acre	\$1,670.00	
Seed and fertilize - 6.44 acres @ \$180/acre	\$1,159.20	
TOTAL SPECIAL PROJECTS		\$15,943.16

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GRAND TOTAL \$266,007.94

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Thin Road: E to F

Construction - stations 28+45 stations
 miles 0.54 miles

CLEARING AND GRUBBING -
 Scattering 0.98 acres @ \$790.00 per acre = \$774.20
 TOTAL CLEARING AND GRUBBING **\$774.20**

EXCAVATION -
 Road widening and ditchline material 28.45 Sta. @ \$65.00 per sta. = \$1,849.25
 Including endhaul & compaction 375 cys. @ \$2.25 per c.y. = \$843.75
 Drill and shoot ditchline 50 cys. @ \$3.84 per c.y. = \$192.00
 TOTAL EXCAVATION **\$2,693.00**

CULVERTS - MATERIALS & INSTALLATION

Culverts					
116	LF of 18"	\$1,798.00			
0	LF of 30"	\$0.00			
0	LF of 42"	\$0.00			
0	LF of 54"	\$0.00			
		\$1,798.00			
0	LF of 24"	\$0.00			
0	LF of 36"	\$0.00			
0	LF of 48"	\$0.00			
0	LF of 60"	\$0.00			
		\$0.00			
Half Rounds					
20	LF of 21"	\$237.40			
0	LF of 36"	\$0.00			
0	LF of 48"	\$0.00			
0	LF of 60"	\$0.00			
		\$237.40			
0	LF of 30"	\$0.00			
0	LF of 42"	\$0.00			
0	LF of 54"	\$0.00			
0	LF of 66"	\$0.00			
		\$0.00			
Culvert Stakes			Culvert Markers		
4	Stakes	\$32.00	4	Markers	\$24.00
TOTAL CULVERTS				\$2,091.40	

SURFACING-
 0+00 -28+45 1,545 cy. of Pit-Run @ \$4.98 per c.y. = \$7,694.10
 TOTAL SURFACING **\$7,694.10**

SPECIAL PROJECTS

<u>Grade and Shape Subgrade (ditch,unsurfaced,single lane,rocky)</u>	<u>0.54 Miles @ \$850/Mile</u>	<u>\$2,295.00</u>
<u>Compact Subgrade Prior to Rocking</u>	<u>28.45 Stations @ \$11/Station</u>	<u>\$312.95</u>
<u>Grass Seed and Fertilize</u>	<u>.65 Acres @ \$180/Acre</u>	<u>\$117.56</u>
TOTAL SPECIAL PROJECTS		\$2,725.51

GRAND TOTAL **\$15,978.21**

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Thin Road: G to H

Construction - _____ stations 43+65 stations
 _____ miles 0.83 miles

CLEARING AND GRUBBING -
 Scattering 3.00 acres @ \$790.00 per acre = \$2,370.00
TOTAL CLEARING AND GRUBBING \$2,370.00

EXCAVATION -
 Widening (Rippable) 330 cys. @ \$3.19 per c.y. = \$1,052.70
 Widening (Common) 1350 cys. @ \$1.15 per c.y. = \$1,552.50
 Road widening for rip rap (Solid) 190 cys. @ \$3.84 per c.y. = \$729.60
 Pullback 1190 cys. @ \$1.50 per c.y. = \$1,785.00
 44 Sta. @ \$65.00 per Station = \$2,860.00
TOTAL EXCAVATION \$7,979.80

END-HAUL -
 Waste Area @ 26+45 2540 cys. @ \$2.23 per c.y. = \$5,664.20
TOTAL END-HAUL \$5,664.20

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18" \$0.00	0 LF of 24" \$0.00
0 LF of 30" \$0.00	0 LF of 36" \$0.00
0 LF of 42" \$0.00	0 LF of 48" \$0.00
0 LF of 54" \$0.00	0 LF of 60" \$0.00
\$0.00	\$0.00

Half Rounds

0 LF of 21" \$0.00	0 LF of 30" \$0.00
0 LF of 36" \$0.00	0 LF of 42" \$0.00
0 LF of 48" \$0.00	0 LF of 54" \$0.00
0 LF of 60" \$0.00	0 LF of 66" \$0.00
\$0.00	\$0.00

Culvert Stakes

0 Stakes \$0.00

Culvert Markers

0 Markers \$0.00

TOTAL CULVERTS \$0.00

SURFACING-

Load, haul, place - 37+15 125 cy. of Riprap @ \$7.51 per c.y. = \$938.59
TOTAL SURFACING \$938.59

SPECIAL PROJECTS

Grade and Shape Subgrade (outsloped, unsurfaced, single lane, rocky)	2.2 Miles @ \$655/Mile	\$1,442.74
Compact Subgrade Prior to Rocking	44 Stations @ \$11/station	\$484.00
Construct Waste Areas	2 Hours @ \$130.30/Hour	\$260.60
Spread and Compact Waste Areas	2540 Cys @ \$0.30/Cy	\$762.00
Grass Seed and Fertilize	2 Acres @ \$180/Acre	\$360.00

TOTAL SPECIAL PROJECTS \$3,309.34

GRAND TOTAL \$20,261.93

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Thin Road: I to J

Construction -	<u>0</u> stations	<u>44+00</u> stations
	<u>0.00</u> miles	<u>0.83</u> miles

CLEARING AND GRUBBING -

Scattering	1.61 acres @	\$790.00 per acre =	\$1,271.90
Waste Area	0.52 acres @	\$790.00 per acre =	<u>\$410.80</u>
TOTAL CLEARING AND GRUBBING			\$1,682.70

EXCAVATION -

0+00 to 3+65	6 hrs. @	\$130.30 per hr. =	\$781.80
3+65 to 44+00	16 sta. @	\$65.00 per sta. =	\$1,040.00
Widening, endhaul & compact	350 cys. @	\$2.30 per c.y. =	<u>\$805.00</u>
TOTAL EXCAVATION			\$2,626.80

CULVERTS - MATERIALS & INSTALLATION

Culverts			
116	LF of 18"	\$1,798.00	
0	LF of 30"	\$0.00	
0	LF of 42"	\$0.00	
0	LF of 54"	<u>\$0.00</u>	
		\$1,798.00	
90	LF of 24"	\$1,656.90	
0	LF of 36"	\$0.00	
0	LF of 48"	\$0.00	
0	LF of 60"	<u>\$0.00</u>	
		\$1,656.90	
Half Rounds			
40	LF of 21"	\$474.80	
0	LF of 36"	\$0.00	
0	LF of 48"	\$0.00	
0	LF of 60"	<u>\$0.00</u>	
		\$474.80	
10	LF of 30"	\$154.00	
0	LF of 42"	\$0.00	
0	LF of 54"	\$0.00	
0	LF of 66"	<u>\$0.00</u>	
		\$154.00	
Culvert Stakes & Markers			
10	Stakes	<u>\$80.00</u>	
8	Markers	<u>\$48.00</u>	
TOTAL CULVERTS			\$4,211.70

SURFACING-

0+00 - 44+00	3,183 cy. of Pit-Run	@	\$10.89 per c.y. =	\$34,662.87
TOTAL SURFACING				\$34,662.87

SPECIAL PROJECTS

<u>Grade and shape subgrade (ditch, unsurfaced, single lane, rocky)</u>	<u>0.83 Miles @ \$850/Mile</u>	<u>\$705.50</u>
<u>Compact subgrade prior to rocking</u>	<u>43.95 Stations @ \$11/Station</u>	<u>\$483.45</u>
<u>Construct waste areas</u>	<u>3 Hours @ \$130.31/Hour</u>	<u>\$390.93</u>
<u>Grass seed and fertilize</u>	<u>1.5 Acres @ \$180/Acre</u>	<u>\$270.00</u>
TOTAL SPECIAL PROJECTS		\$1,849.88

GRAND TOTAL **\$45,033.95**

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Thin Road: K to L

Construction - 0 stations Improvement - 25+50 stations
0.00 miles 0.48 miles

CLEARING AND GRUBBING -

Side cast	0.00 acres @	\$513.00 per acre =	\$0.00	
Scattering	1.49 acres @	\$790.00 per acre =	\$1,177.10	
Piling	0.00 acres @	\$877.00 per acre =	\$0.00	
Pile-Burn	0.00 acres @	\$1,458.00 per acre =	\$0.00	
Endhaul	0.00 acres @	\$1,500.00 per acre =	\$0.00	
TOTAL CLEARING AND GRUBBING			\$1,177.10	

EXCAVATION -

Common	2105 cys. @	\$1.15 per sta. =	\$2,420.75	
Rippable	190 cys. @	\$3.19 per c.y. =	\$606.10	
Drill & shoot	190 cys. @	\$3.84 per c.y. =	\$729.60	
	21.6 sta. @	\$65.00 per sta. =	\$1,404.00	
TOTAL EXCAVATION			\$5,160.45	

END-HAUL-

Waste Area #1a	105 cys. @	\$1.92 per c.y. =	\$201.60	
Waste Area #1b	2000 cys. @	\$1.12 per c.y. =	\$2,240.00	
TOTAL END-HAUL			\$2,441.60	

CULVERTS - MATERIALS & INSTALLATION

Culverts

0 LF of 18"	\$0.00		54 LF of 24"	\$994.14
0 LF of 30"	\$0.00		0 LF of 36"	\$0.00
0 LF of 42"	\$0.00		0 LF of 48"	\$0.00
0 LF of 54"	\$0.00		0 LF of 60"	\$0.00
	<u>\$0.00</u>			<u>\$994.14</u>

Half Rounds

0 LF of 21"	\$0.00		20 LF of 30"	\$267.80
0 LF of 36"	\$0.00		0 LF of 42"	\$0.00
0 LF of 48"	\$0.00		0 LF of 54"	\$0.00
0 LF of 60"	\$0.00		0 LF of 66"	\$0.00
	<u>\$0.00</u>			<u>\$267.80</u>

Culvert Stakes

4 Stakes \$32.00

Culvert Markers

2 Markers \$12.00

TOTAL CULVERTS \$1,293.94

SURFACING-

3+90 to 5+15	100 cy. of pit-run @	\$3.50 per c.y.=	\$350.00	
TOTAL SURFACING			\$350.00	

SPECIAL PROJECTS

Grade and shape Subgrade	0.41 Miles @ \$850/Mile	\$348.50	
Construct Waste Area	2 Hours @ \$130.31/Hr.	\$260.62	
Compact Subgrade Prior to Rocking	21.6 Stations @ \$11/Station	\$237.60	
Grass Seed and Fertilize	2 Acres @ \$180/Acre	\$360.00	
Spread and Compact Waste Areas	2105 CY @ \$0.30/CY	\$631.50	
TOTAL SPECIAL PROJECTS			\$1,838.22

GRAND TOTAL \$12,261.31

SUMMARY OF CONSTRUCTION COST

Sale: West Standard Thin Road: M to N

Construction -	<u>0</u> stations	<u>46+00</u> stations
	<u>0.00</u> miles	<u>0.87</u> miles

CLEARING AND GRUBBING -

Scattering	6.33 acres @	\$790.00 per acre =	\$5,000.70
Waste Area	0.52 acres @	\$790.00 per acre =	<u>\$410.80</u>
TOTAL CLEARING AND GRUBBING			\$5,411.50

EXCAVATION -

0+00 to 44+00	46 sta. @	\$65.00 per sta. =	\$2,990.00
Sidecast Pullback	1125 cys. @	\$1.40 per c.y. =	\$1,575.00
Road widening (Common)	3817 cys. @	\$1.15 per c.y. =	\$4,389.55
Road widening for pit run & rip rap (Rip)	910 cys. @	\$1.50 per c.y. =	\$1,365.00
Road widening for pit run & rip rap (Drill and shoot)	390 cys. @	\$3.84 per c.y. =	<u>\$1,497.60</u>
TOTAL EXCAVATION			\$11,817.15

ENDHAUL-

Incl. Spread/compact	6242 cys. @	\$2.13 per c.y. =	\$13,295.46
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CULVERTS - MATERIALS & INSTALLATION

\$13,295.46

Culverts

60 LF of 18"	\$930.00	156 LF of 24"	\$2,871.96
0 LF of 30"	\$0.00	0 LF of 36"	\$0.00
0 LF of 42"	\$0.00	0 LF of 48"	\$0.00
0 LF of 54"	<u>\$0.00</u>	0 LF of 60"	<u>\$0.00</u>
<u>\$930.00</u>		<u>\$2,871.96</u>	

Half Rounds

20 LF of 21"	\$237.40	20 LF of 30"	\$308.00
0 LF of 36"	\$0.00	0 LF of 42"	\$0.00
0 LF of 48"	\$0.00	0 LF of 54"	\$0.00
0 LF of 60"	<u>\$0.00</u>	0 LF of 66"	<u>\$0.00</u>
<u>\$237.40</u>		<u>\$308.00</u>	

Culvert Stakes & Markers

8 Stakes	<u>\$64.00</u>	6 Markers	<u>\$36.00</u>
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TOTAL CULVERTS \$4,447.36

SURFACING-

Load, haul, place	1200 cy. of	Riprap	@	\$4.57 per c.y. =	\$5,484.00
Load, haul, spread	100 cy. of	Pit run	@	\$3.08 per c.y. =	<u>\$308.00</u>
TOTAL SURFACING					\$5,484.00

SPECIAL PROJECTS

Grade and shape subgrade (ditch, unsurfaced, single lane, rocky)	0.87 Miles @ \$850/Mile	\$739.50
Compact subgrade -	46 Stations @ \$11/Station	\$506.00
Construct rolling dip -	1 @ \$65	\$65.00
Remove large stumps -	4 hrs w/d8 @ \$130.30	\$521.20
Mulch pullback areas-	.31 acres @ \$1000/acre	\$310.00
Grass seed and fertilize	1.5 Acres @ \$180/Acre	<u>\$270.00</u>
TOTAL SPECIAL PROJECTS		\$2,411.70

GRAND TOTAL \$42,867.17

REMOVE CULVERTS FROM STATE LANDS COST SHEET

SALE: West Standard

<u>Point to Point</u>	<u>Number of Culverts</u>
A to B	6
C to D	16
I to J	2
TOTAL CULVERTS	24

Load culverts @ 0.25 hrs/culvert =	6.00 hrs
Move Backhoe between culverts =	6.00 hrs
Subtotal loading time =	12.00 hrs
Driving and unloading time =	2.00 hrs
Total project time =	14.00 hrs

28.00 hours labor @ \$33.07/hour =	\$925.96
14.00 hours with Dump Truck @ \$24.46/hour =	\$342.44
14.00 hours with trailer @ \$5.00/hour =	\$70.00
12.00 hours with Backhoe @ \$13.09/hour =	\$157.08

Grand Total

\$1,495.48

MOVE-IN COST SUMMARY

Sale: West Standard

MILEAGE FACTORS			
Distance Factor		Distance Factor	
0-25	0.58	55	1.07
30	0.66	60	1.15
35	0.74	65	1.23
40	0.82	70	1.31
45	0.91	75	1.40
50	1.00	80	1.48

MILEAGE FACTOR	0.74
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No.	EQUIPMENT DESCRIPTION	Base Cost	Move in Cost	Within Area Move (\$/mile)	Begin Mileage	End Mileage	Total Miles	Within Area Cost	Total Cost
2	Drill & Compressor	\$241	\$356.68	\$13.73			16.4	\$225.17	\$581.85
0	Graders	\$241	\$0.00	\$7.05	0	0	0	\$0.00	\$0.00
0	Loader (1.5 - 2.5 cy)	\$241	\$0.00	\$6.83	0	0	0	\$0.00	\$0.00
0	Loader (3 cy +)	\$387	\$0.00	\$8.15	0	0	0	\$0.00	\$0.00
0	Rollers & Compactors	\$241	\$0.00	\$13.73	0	0	0	\$0.00	\$0.00
2	Excavators	\$533	\$788.84	\$36.60	0	16.4	16.4	\$1,200.48	\$1,989.32
0	Large Backhoes	\$533	\$0.00	\$21.42	0	0	0	\$0.00	\$0.00
0	Small backhoes	\$241	\$0.00	\$3.52	0	0	0	\$0.00	\$0.00
0	Tractors (D5 - D7)	\$385	\$0.00	\$18.47	0	0	0	\$0.00	\$0.00
2	Tractors (D8)	\$533	\$788.84	\$25.53		16.4	16.4	\$837.38	\$1,626.22
0	Dump Truck (< 10 cy)	\$121	\$0.00	\$2.30	0	0	0	\$0.00	\$0.00
8	Dump Truck (10 cy +)	\$144	\$852.48	\$2.76	0	16.4	16.4	\$362.11	\$1,214.59

TOTAL MOVE-IN COSTS: \$5,411.99

PIT-RUN ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>A to B 412+50</u>	Location: <u>NW 1/4, SE 1/4 Section 24 T2N, R8W, W.M.</u>
Sale: <u>West Standard</u>	Road: <u>7868 c.y.</u>
Swell: <u>1.30</u>	Stockpile: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>7868 c.y.</u>
Drill Pct.: <u>50%</u>	In Place Total: <u>6052 c.y.</u>

Pit Development 10Hrs. Excavator @ \$115/Hr. \$1,150.00
 End-Haul Debris to Waste Area: 8 Hours w/ Dump Truck @ \$57.67/Hr. \$461.36

Drill & Shoot:	<u>\$2.00</u> /cu.yd.	x	<u>3026</u> cu.yds.	=	\$6,052.00
Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>3,026</u> cu.yds.	=	\$4,539.00
Load Dump Truck:	<u>\$0.60</u> /cu.yd.	x	<u>7868</u> cu.yds.	=	\$4,720.80
			Subtotal		<u>\$16,923.16</u>

Move in:

Drill & Compressor (within area)	\$13.73
Excavator (within area)	\$91.50
Cat (within area)	\$63.83
Loader (within area)	\$20.38
Grader (within area)	\$17.63
Roller (within area)	\$34.33
Trucks	<u>\$639.36</u>
	Subtotal \$880.76

	TOTAL PRODUCTION COSTS \$17,803.92
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Base Cost \$2.26 Per Cu.Yd.

PIT-RUN ROCK:

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B 369+50 to 513+05	\$2.62	\$0.60	\$2.26	\$5.48	7868	<u>\$43,116.64</u>
				Total C.Y.	7868	Sub Total \$43,116.64

	TOTAL PIT-RUN COSTS \$43,116.64
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PIT-RUN ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>NorthFork WestFork</u>	Location: <u>SE 1/4, SW 1/4 Section 10 T2N, R7W, W.M.</u>
Sale: <u>West Standard</u>	Road: <u>11976 c.y.</u>
Swell: <u>1.30</u>	Stockpile: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>11976 c.y.</u>
Drill Pct.: <u>50%</u>	In Place Total: <u>9212 c.y.</u>

Pit development	16Hrs. excavator @ \$115/Hr.	\$1,840.00
End-haul material to waste area:	16 hours w/3 dump trucks @ \$173.00/Hr.	\$2,768.00
Compact waste @ waste area - 2 hours w/cat @ \$130.30		\$260.60

Drill & Shoot:	<u>\$2.00</u> /cu.yd. x	<u>4606</u> cu.yds. =	\$9,212.00
Strip Rock:	<u>\$1.50</u> /cu.yd. x	<u>4,606</u> cu.yds. =	\$6,909.00
Load Dump Truck:	<u>\$0.60</u> /cu.yd. x	<u>11976</u> cu.yds. =	\$7,185.60
		Subtotal	<u>\$28,175.20</u>

Move in:

Drill & Compressor	\$178.34
Excavator	\$394.42
Cat	\$394.42
Loader	\$286.38
Grader	\$178.34
Roller	\$178.34
Trucks	<u>\$426.24</u>
	Subtotal <u>\$2,036.48</u>

TOTAL PRODUCTION COSTS \$30,211.68

Base Cost \$2.52 Per Cu.Yd.

PIT-RUN ROCK:

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
C to D 141+40 - 280+40	\$6.85	\$0.60	\$2.52	\$9.97	8793	<u>\$87,666.21</u>
I to J 0+00 - 44+00	\$7.77	\$0.60	\$2.52	\$10.89	3183	<u>\$34,662.87</u>
				Total C.Y.	11976	Sub Total <u>\$122,329.08</u>

TOTAL PIT-RUN COSTS \$122,329.08

PIT-RUN ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>Point "F"</u>	Location: <u>Point "F" of Segment E to F</u>
Sale: <u>West Standard</u>	Road: <u>1545 c.y.</u>
Swell: <u>1.30</u>	Ditchline: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>1545 c.y.</u>
Drill Pct.: <u>0%</u>	In Place Total: <u>1188 c.y.</u>

Scalp & Clear Overburden: 3 Hrs. Excavator @ \$115/Hr. \$345.00
Haul debris to waste area @ station 7+20 - 2 hours w/ truck @ \$57.67/hr \$115.34

Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>1,188</u> cu.yds.	=	\$1,782.00
Load Dump Truck:	<u>\$0.60</u> /cu.yd.	x	<u>1545</u> cu.yds.	=	<u>\$927.00</u>
			Subtotal		\$4,332.34

Move in Excavator: (within area)	\$73.20
Move in 3 Trucks:	<u>\$319.68</u>
	Subtotal \$392.88

	TOTAL PRODUCTION COSTS \$4,725.22
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Base Cost \$3.06 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
E to F: St. 0+00 - 28+45	<u>\$1.32</u>	<u>\$0.60</u>	<u>\$3.06</u>	<u>\$4.98</u>	<u>1545</u>	<u>\$7,694.10</u>
				Total C.Y.	1545	Sub Total \$7,694.10

	TOTAL PIT-RUN COSTS \$7,694.10
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PIT-RUN ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>FB 8</u>	Location: <u>NE 1/4, SW 1/4 Section 12 T2N, R8W, W.M.</u>
Sale: <u>West Standard</u>	Road: <u>130 c.y.</u>
Swell: <u>1.30</u>	Stockpile: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>130 c.y.</u>
Drill Pct.: <u>0%</u>	In Place Total: 100 c.y.

Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>130</u> cu.yds.	=	<u>\$195.00</u>
Load Dump Truck:	<u>\$0.60</u> /cu.yd.	x	<u>130</u> cu.yds.	=	<u>\$78.00</u>
			Subtotal		<u>\$273.00</u>

Move in:

Base Cost \$2.10 Per Cu.Yd.

TOTAL PRODUCTION COSTS **\$273.00**

PIT-RUN ROCK:

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
K to L - 0+00 - 2+00	<u>\$0.80</u>	<u>\$0.60</u>	<u>\$2.10</u>	<u>\$3.50</u>	<u>100</u>	<u>\$350.00</u>
Points O, P, & Q	<u>\$2.12</u>	<u>\$0.00</u>	<u>\$2.10</u>	<u>\$4.22</u>	<u>30</u>	<u>\$126.60</u>
				Total C.Y.	<u>130</u>	Sub Total <u>\$476.60</u>

TOTAL PIT-RUN COSTS **\$476.60**

RIPRAP ROCK PIT DEVELOPMENT COST SUMMARY

Pit:	Segment A to B	Location:	A to B: Sta. 236+00 & 378+85
Sale:	West Standard	Road:	c.y.
Swell:	1.30	Rip Rap:	270 c.y.
Shrinkage:	1.16	Total Truck Loads:	270 c.y.
Drill Pct.:	0%	In Place Total:	270 c.y.

Load Riprap: \$1.37 /cu.yd. x 270 cu.yds. = \$369.90
Subtotal \$369.90

TOTAL PRODUCTION COSTS	\$369.90
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Base Cost \$1.37 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Placement Cost /cu.yd.	Base Cost /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B: Sta. 239+75 to 342+20	\$2.65	\$1.37	\$1.37	\$5.39	80	\$431.20
A to B: Sta. 342+20 to 620+35	\$2.94	\$1.37	\$1.37	\$5.68	190	\$1,079.20
Total C.Y.					270	Sub Total
						\$1,510.40

TOTAL RIPRAP COSTS	\$1,510.40
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RIPRAP ROCK PIT DEVELOPMENT COST SUMMARY

Pit:	<u>Segment G to H -Station 108+00</u>	Location:	<u>SW 1/4, NE 1/4, Sec. 17, T2N, R7W, W.M.</u>
Sale:	<u>West Standard</u>	Road:	<u> c.y.</u>
Swell:	<u>1.30</u>	Rip Rap:	<u>125 c.y.</u>
Shrinkage	<u>1.16</u>	Total Truck Loads:	<u>125 c.y.</u>
Drill Pct.:	<u>50%</u>	In Place Total:	<u>96 c.y.</u>

Scalp & Clear Overburden:	2Hrs. Excavator @ \$115/Hr.	\$230.00
Compact Overburden @ Waste Area:	0.5 Hour w/ D-8 Cat @ \$130.31/Hr.	\$65.16
End-Haul Overburden to Waste Area:	1 Hours w/ Dump Truck @ \$57.67/Hr.	\$57.67

Drill & Shoot:	<u>\$2.00</u> /cu.yd.	x	<u>48</u> cu.yds.	=	\$96.15
Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>48</u> cu.yds.	=	\$72.12
Load Riprap:	<u>\$1.37</u> /cu.yd.	x	<u>125</u> cu.yds.	=	\$171.25
			Subtotal		<u>\$692.34</u>

TOTAL PRODUCTION COSTS \$692.34

Base Cost \$5.54 Per Cu.Yd.

RIPRAP ROCK:

Road	Haul	Placement	Base	Cost	Number	ROCK
Segment	/cu.yd.	/cu.yd.	/cu.yd.	/cu.yd.	Cu. Yds	COST
109+80	\$0.60	\$1.37	\$5.54	\$7.51	125	<u>\$938.59</u>
			Total C.Y.		125	Sub Total <u>\$938.59</u>

TOTAL RIPRAP COSTS \$938.59

RIPRAP ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>NF WF Wilson</u>	Location: <u>C to D: Sta. 15+75</u>	
Sale: <u>West Standard</u>	Road: _____	c.y.
Swell: <u>1.30</u>	Rip Rap: _____	<u>170 c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: _____	<u>170 c.y.</u>
Drill Pct.: <u>50%</u>	In Place Total: _____	<u>131 c.y.</u>

Strip Rock:	<u>\$1.50</u> /cu.yd.	x	<u>170</u> cu.yds.	=	<u>\$255.00</u>
Load Riprap:	<u>\$1.37</u> /cu.yd.	x	<u>170</u> cu.yds.	=	<u>\$232.90</u>
			Subtotal		<u>\$487.90</u>

	TOTAL PRODUCTION COSTS	\$487.90
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Base Cost \$2.87 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Placement Cost /cu.yd.	Base Cost /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
C to D: Sta.141+20 to 280+40	\$2.10	\$1.37	\$2.87	\$6.34	170	\$1,077.80
				Total C.Y.	170	Sub Total
						<u>\$1,077.80</u>

	TOTAL RIPRAP COSTS	\$1,077.80
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RIPRAP ROCK PIT DEVELOPMENT COST SUMMARY

Pit: <u>NF WF Wilson</u>	Location: <u>C to D: Sta. 3+45</u>
Sale: <u>West Standard</u>	Road: _____ c.y.
Swell: <u>1.30</u>	Rip Rap: _____ 70 c.y.
Shrinkage <u>1.16</u>	Total Truck Loads: _____ 70 c.y.
Drill Pct.: <u>50%</u>	In Place Total: 54 c.y.

Strip Rock:	<u>\$1.50</u> /cu.yd. x	<u>70</u> cu.yds. =	\$105.00
Load Riprap:	<u>\$1.37</u> /cu.yd. x	<u>70</u> cu.yds. =	\$95.90
		Subtotal	\$200.90

	TOTAL PRODUCTION COSTS	\$200.90
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Base Cost \$2.87 Per Cu.Yd.

ROCK PIT DEVELOPMENT AND CRUSHING COST SUMMARY

Pit: <u>Highway Pit</u>	Location: <u>Section 19,T1N, R7W, W.M.</u>
Sale: <u>West Standard</u>	Road: <u>18585 c.y.</u>
Swell: <u>1.30</u>	Stockpile: <u>c.y.</u>
Shrinkage: <u>1.16</u>	Total Truck Loads: <u>18585 c.y.</u>
Drill Pct.: <u>100%</u>	In Place Total: <u>14296 c.y.</u>

Pit development & cleanup	\$20,675.00
Drill & Shoot: <u>\$2.10</u> /cu.yd. x <u>14296</u> cu.yds. =	\$30,021.92
Push Rock: <u>\$0.60</u> /cu.yd. x <u>18585</u> cu.yds. =	\$11,151.00
Load Crusher: <u>\$0.60</u> /cu.yd. x <u>18585</u> cu.yds. =	\$11,151.00
Crushing: <u>\$2.10</u> /cu.yd. x <u>18585</u> cu.yds. =	\$39,028.50
Load Dump Truck: <u>\$0.60</u> /cu.yd. x <u>18585</u> cu.yds. =	\$11,151.00
Oversize Reduction: <u>\$4.00</u> /cu.yd. x <u>1859</u> cu.yds. =	\$7,434.00
Subtotal	\$130,612.42

Move in and set up crusher	\$2,524.26
Move in and set up drill and compressor	\$139.78
Move in excavator	\$309.14
Move in D-8	\$309.14
Move in loader	\$224.46
Move in grader	\$167.98
Move in roller	\$194.70
Move in water truck	\$83.52
Move in trucks	\$334.08
Change gradations	\$207.00
Subtotal	\$4,494.06

TOTAL PRODUCTION COSTS	\$135,106.48
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Base Cost \$7.27 Per Cu.Yd.

Road Segment	Haul Cost /cu.yd.	Proc Cost /cu.yd.	Base Cst. /cu.yd.	Cost /cu.yd.	Number Cu. Yds	ROCK COST
A to B- 0+00-225+25	\$2.78	\$1.35	\$7.27	\$11.40	7834	\$89,304.87
A to B- 225+28-298+10	\$4.55	\$1.10	\$7.27	\$12.92	3507	\$45,309.22
A to B- 298+10-369+50	\$6.63	\$1.59	\$7.27	\$15.49	1697	\$26,285.94
C to D	\$7.46	\$1.21	\$7.27	\$15.94	5547	\$88,417.25
			Total C.Y.		18585	Sub Total \$249,317.28

TOTAL ROCKING COSTS	\$249,317.28
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OREGON DEPARTMENT OF FORESTRY
CRUISE REPORT

WEST STANDARD

1. **Type of Sale:** Recovery\Thinning and Clearcut
2. **Legal Description:** Portions of Sections 7,8,17,18,19,21,29,30 T2N, R7W, and portions of section 12,13,23,24,25,26 T2N, R8W, W.M., Tillamook County, Oregon.
3. **Boundary Lines:** Sale area boundaries were established adjacent to property lines, distinct timber type changes and geographic features that will facilitate harvesting activities. Boundaries are posted with "Timber Sale Boundary" signs and pink flagging.
4. **Sale Acreage:** The sale boundaries were plotted on an orthophoto and then digitized into ArcView. The sale acreage was then calculated using this program.

APPROXIMATE ACREAGE:

	<u>Gross</u>	<u>Net Thinning</u>	<u>Net Clearcut</u>
Area I	611	270	--
Area II	30	--	24
Area III	13	11	--
Area IV	853	498	--
Area V	174	131	--
Area VI	70	65	--
	1751	975	24

Harvesting is not required on 776 acres within the sale areas because of hardwood types, access problems, stream buffers and existing roads.

5. **Cruise Procedures:**
 - A) **Cruising Method:** A total of 132 variable radius full point plots were measured in Areas I, II, III, IV, V and VI having 34,12,3,47,22 and 14 plots respectively. Cruise lines were established on transects to sample harvestable types within the sale areas (see cruise maps). Plots were spaced 200 feet apart. Tree species with diameters at least 8 inches or greater were recorded on all plots. Residual and surplus trees were designated to achieve residual basal area targets for each area.

- B) Form Point: 16 feet for conifers.
- C) Form Factor: A form factor was recorded for every grade tree and the average for Douglas-fir, hemlock, and spruce was 84, 85 and 80 respectively.
- D) Plot Size: Full point plots with a basal area factor of 20 was used. The point of conifer tree observation was at 4.5 feet.
- E) Height Standards: To the nearest foot to a top of 6 inches.
- F) Diameter Standards: Diameters were measured at 4.5 feet (DBH) to the nearest inch.
- G) Grading System: Conifers were not graded during the cruise. Assignments of grades were based on results from previous cruises in similar size timber. Columbia River Log Scaling and Grading Rules were used.
- H) Utilization Standards: A minimum log length of 20 feet was used.
6. Computation Procedures: Trees were sampled for merchantable heights to develop a volume basal area ratio (V-BAR). Volumes for these trees were computed using the Atterbury SUPER A.C.E. program. Residual and surplus trees were designated on each cruise plot to develop a stand table that was used to expand the volume for the sale area. Plot data was collected only in the portions of the sale area where harvesting is required. The sale volume for Area II was calculated with 24 net acres to account for non-volume areas with either rock, brush and/or hardwoods.
7. Hidden Defect and Breakage: A 5% deduction was applied to the volume to account for both the hidden and visible defect as well as breakage.
8. Cruiser Names/Dates: Clough, Woodward, Holman, Moore, Wells, 2000.
9. Revenue Distribution:
 FDF: 100%
 Tax Code: 56 100%
 Deed #'s: 186, 441, 35
 Rehabilitation Obligation: 100%
10. Timber Description: The sale area burned in the 1933 and 1945 Tillamook fires. The sale areas consist primarily of planted Douglas-fir and a small component of natural hemlock and noble fir. Hardwoods are present predominantly along old skid roads and streams. Understory vegetation is sparse and primary consists of salmonberry, sword fern, salal and huckleberry. The stands are approximately 40 years old. There are low levels of Swiss needle cast infection (3 years or more on average).

11. **Other Resources:**

- A) **Soils:** The sale areas are classified as production. The major soil types are Osweg, Elsie and Jewell; all are deep, well drained and medium textured. Slopes range from 5% to 70% and average 40%. The aspect is variable. Ground yarding may be conducted on gentle to moderate slopes when soil moisture content is low. The sale areas are all in High Risk Areas. A Written Plan has been prepared to protect High Risk Sites, slopes 80% or greater and draws 70% or greater and headwalls, within the sale area.
- B) **Water:** Area I and IV are adjacent to large Type F streams, West Fork Wilson River and North Fork West Fork Wilson River. There are several small Type N streams in Areas I, IV and V. Harvesting plans will be designed to minimize yarding across streams. When yarding across streams is unavoidable, full suspension will be required over Type F streams. At least one end suspension will be required when yarding within 100 feet of Type F streams and across Type N streams. Trees will not be harvested within 25 feet of streams shown on the Exhibit "A". Riparian areas are predominantly alder dominated. No adverse impacts to water quality are expected. A written plan has been prepared to protect Type F streams.
- C) **Wildlife:** Harvesting activities are expected to increase the amount of forage because of the increased sunlight reaching the forest floor. Following completion of these activities, ODF&W volunteers may forage seed areas of disturbed soil. Skid trails will be waterbarred and closed upon completion of yarding activities in order to minimize potential soil and wildlife disturbances. Spur roads will be reviewed for closure after harvesting activities have been completed. Snags will not be felled unless determined to be a safety hazard. Snag and down wood recruitment will be from residual green trees in the sale areas.

The sale was reviewed with Clint Smith, ODF biologist on 12/1/99. Surveys were not recommended for spotted owls or marbled murrelets due to the lack of suitable habitat.

- D) **Rare Plants:** Coast Range Fawn Lily, *Erythronium elegans*, a plant on the state threatened list, was discovered west of Area I. Dr. Robert Meinke, program leader of the plant conservation biology program in the Oregon Department of Agriculture, was notified of our discovery of this plant on state land. Surveys were conducted within the sale at all spots meeting elevation and habitat criteria and no plants were found. Dr. Meinke reviewed our surveying methods and

results and concurred with our assessment that the likelihood this timber sale would reduce the survival or recovery of *E. elegans* is extremely low.

E) **Recreation:** All areas are in an Off-Road Motorized Zone in the Tillamook State Forest Recreation Plan. The sale areas do not have any designated OHV trails within them. The general vicinity around the sale area is used primarily for hunting, sightseeing and camping.

F) **Scenic:** The sale is not visible from state highways or county roads. Scenic impacts are expected to be minimal.

12. **Access:** Access to the sale areas from Tillamook is via Highway 6, North Fork Wilson River, West Fork, North Fork West Fork and Gilmore Roads. Elevation of the sale areas range from 700 to 2800 feet. Project work for the sale consists of approximately 22.0 miles of road improvement, rock pit development and rock crushing. Road improvements include widening, installing culverts, sidecast pullback and spreading additional surface rock. Road improvement and construction activities have seasonal restrictions and areas of disturbed soil created by these activities will be grass seeded to protect water quality.

13. **Logging Method:** 95% of the sale area is on slopes exceeding 35% and has been appraised to be cable yarded. The remaining portion has been appraised for ground yarding. The average and maximum yarding distances for the cable portion are 450 and 1200 feet respectively. The average and maximum distances for ground yarding are 150 and 400 feet respectively. Seasonal yarding restrictions will apply to ground yarding areas in order to reduce damage to soils, water, and the residual stand. The net thinning acreage of the sale does not include all areas in need of thinning. Some areas are economically or physically infeasible for the type of logging systems used in the appraisal for this sale. These areas may be harvested by the purchaser using methods and equipment approved in the operations plan, provided all other contract requirements for resource protection are achieved.

15. **Appendices:**

- Volume Summary
- Stand Tables
- Logging Plans
- Cruise Maps

**West Standard
Volume Summary**

AREA I (Thin to 110-130 square feet) 270 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	205	98	100	9.8	2646	5%	2514
hemlock	2	0	0	0.0	0	5%	0
noble fir	1	0	0	0.0	0	5%	0
Total Area	208	98		9.8	2646		2514

AREA II leave 125-150 trees 24 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	164	160	100	16.0	384	5%	365
hemlock	0	0	0	0.0	0	5%	0
noble fir	2	0	0	0.0	0	5%	0
Total Area	166	160		16.0	384		365

AREA III (Thin to 110-130 square feet) 11 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	80	33	85	2.8	31	5%	29
hemlock	67	40	80	3.2	35	5%	33
noble fir	40	0	0	0.0	0	5%	0
Total Area	187	73		6.0	66		62

AREA IV (Thin to 110-130 square feet) 498 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	186	86	100	8.6	4283	5%	4069
hemlock	4	0	0	0.0	0	5%	0
noble fir	8	0	0	0.0	0	5%	0
Total Area	198	86		8.6	4283		4069

AREA V (Thin to 110-130 square feet) 131 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	173	75	100	7.5	983	5%	934
hemlock	12	0	0	0.0	0	5%	0
noble fir	2	0	0	0.0	0	5%	0
Total Area	187	75		7.5	983		934

AREA VI (Thin to 110-130 square feet) 65 acres

	Total basal Area/acre	Take basal Area/acre	V-BAM	Vol/Acre MBF	Gross volume MBF	D&B Percent	Adjusted volume MBF
Douglas-fir	124	36	100	3.6	234	5%	222
hemlock	34	7	80	0.6	39	5%	37
Total Area	158	43		4.2	273		259

Total Sale Area 999 net acres

Species	Vol. MBF
Douglas-fir	8133
hemlock	70
Sale Total	8203

Oregon Department of Forestry
Stand Table

West Standard

Area I

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Noble Fir TK tr/acre	Noble Fir LV tr/acre
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	14.3	0.0	14.3	0.0	0.0	0.0	0.0	0.0
9"	34.5	0.0	34.5	0.0	0.0	0.0	0.0	0.0
10"	23.1	0.0	23.1	0.0	0.0	0.0	0.0	0.0
11"	30.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0
12"	42.3	9.8	42.3	9.8	0.0	0.0	0.0	0.0
13"	13.6	21.7	13.6	21.7	0.0	0.0	0.0	0.0
14"	0.0	23.8	0.0	23.8	0.0	0.0	0.0	0.0
15"	0.0	22.4	0.0	22.4	0.0	0.0	0.0	0.0
16"	0.0	5.3	0.0	5.3	0.0	0.0	0.0	0.0
17"	0.0	4.8	0.0	4.8	0.0	0.0	0.0	0.0
18"	0.0	1.4	0.0	1.4	0.0	0.0	0.0	0.0
19"	0.0	1.3	0.0	1.3	0.0	0.0	0.0	0.0
20"	0.0	1.1	0.0	1.1	0.0	0.0	0.0	0.0
21"	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
22"	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0
24"	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0
26"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	252	252	0	0
Residual	94	94	0	0
Take	158	158	0	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	208	208	0	0
Residual	110	110	0	0
Take	98	98	0	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	12.3	12.3	0.0	0.0
Residual	14.6	14.6	0.0	0.0
Take	10.7	10.7	0.0	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	58	44	50
Residual	29	22	25

Oregon Department of Forestry
Stand Table

West Standard
Area II

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Noble Fir TK tr/acre
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	34.2	0.0	34.2	0.0	0.0	0.0	0.0
9"	46.0	0.0	46.0	0.0	0.0	0.0	0.0
10"	51.8	0.0	51.8	0.0	0.0	0.0	0.0
11"	45.0	3.0	45.0	0.0	0.0	0.0	0.0
12"	36.4	0.0	36.4	0.0	0.0	0.0	0.0
13"	19.5	0.0	19.5	0.0	0.0	0.0	0.0
14"	17.1	0.0	17.1	0.0	0.0	0.0	0.0
15"	4.9	0.0	4.9	0.0	0.0	0.0	0.0
16"	0.0	1.4	0.0	1.4	0.0	0.0	0.0
17"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24"	0.0	0.6	0.0	0.6	0.0	0.0	0.0
26"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	260	257	0	3
Residual	5	2	0	3
Take	255	255	0	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	166	164	0	2
Residual	6	4	0	2
Take	160	160	0	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	10.8	10.8	0.0	11.1
Residual	14.8	19.2	0.0	11.1
Take	10.7	10.7	0.0	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	49	37	42
Residual	2	1	1

Area III

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acr	Doug-fir V tr/acr	Hemlock TK tr/acr	Hemlock LV tr/acre	Noble Fir TK tr/acr	Noble Fir LV tr/acr
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	76.0	0.0	19.0	0.0	57.0	0.0	0.0	0.0
9"	46.0	15.3	0.0	0.0	46.0	0.0	0.0	15.3
10"	24.7	49.4	24.7	0.0	0.0	24.7	0.0	24.7
11"	20.0	20.0	20.0	10.0	0.0	0.0	0.0	10.0
12"	0.0	17.4	0.0	8.7	0.0	0.0	0.0	8.7
13"	0.0	29.0	0.0	14.5	0.0	14.5	0.0	0.0
14"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15"	0.0	5.4	0.0	0.0	0.0	0.0	0.0	5.4
16"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17"	0.0	8.5	0.0	8.5	0.0	0.0	0.0	0.0
18"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19"	0.0	3.4	0.0	3.4	0.0	0.0	0.0	0.0
20"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	315	109	142	64
Residual	148	45	39	64
Take	167	64	103	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	187	80	67	40
Residual	113	47	27	40
Take	73	33	40	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	10.4	11.6	9.3	10.7
Residual	11.8	13.8	11.3	10.7
Take	9.0	9.7	8.4	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	56	42	48
Residual	32	24	28

Oregon Department of Forestry
Stand Table

West Standard

Area IV

Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Noble Fir TK tr/acre	Noble Fir LV tr/acre
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28.5	0.0	28.5	0.0	0.0	0.0	0.0	0.0
23.0	0.0	23.0	0.0	0.0	0.0	0.0	0.0
44.4	0.0	44.4	0.0	0.0	0.0	0.0	0.0
45.0	0.0	45.0	0.0	0.0	0.0	0.0	0.0
49.4	0.0	49.4	0.0	0.0	0.0	0.0	0.0
39.1	0.0	39.1	0.0	0.0	0.0	0.0	0.0
0.0	24.7	0.0	24.7	0.0	0.0	0.0	0.0
0.0	21.2	0.0	21.2	0.0	0.0	0.0	0.0
0.0	2.8	0.0	2.8	0.0	0.0	0.0	0.0
0.0	2.5	0.0	2.5	0.0	0.0	0.0	0.0
0.0	1.1	0.0	1.1	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0
0.0	1.2	0.0	1.2	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	284	284	0	0
Residual	54	54	0	0
Take	229	229	0	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	216	216	0	0
Residual	68	68	0	0
Take	148	148	0	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	11.8	11.8	0.0	0.0
Residual	15.2	15.2	0.0	0.0
Take	10.9	10.9	0.0	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	62	46	53
Residual	18	13	15

Oregon Department of Forestry
Stand Table

West Standard

Area V

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Noble Fir TK tr/acre	Noble Fir LV tr/acre
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	15.5	2.6	15.5	0.0	0.0	2.6	0.0	0.0
9"	10.5	4.2	10.5	0.0	0.0	4.2	0.0	0.0
10"	11.8	0.0	11.8	0.0	0.0	0.0	0.0	0.0
11"	13.6	2.7	13.6	0.0	0.0	2.7	0.0	0.0
12"	21.3	1.2	21.3	0.0	0.0	1.2	0.0	0.0
13"	15.8	2.0	15.8	0.0	0.0	2.0	0.0	0.0
14"	18.1	2.6	18.1	1.7	0.0	0.9	0.0	0.0
15"	0.0	16.3	0.0	14.1	0.0	2.2	0.0	0.0
16"	0.0	12.0	0.0	10.8	0.0	0.6	0.0	0.6
17"	0.0	9.2	0.0	9.2	0.0	0.0	0.0	0.0
18"	0.0	7.5	0.0	7.5	0.0	0.0	0.0	0.0
19"	0.0	2.8	0.0	2.8	0.0	0.0	0.0	0.0
20"	0.0	4.1	0.0	4.1	0.0	0.0	0.0	0.0
21"	0.0	3.4	0.0	3.4	0.0	0.0	0.0	0.0
22"	0.0	1.5	0.0	1.1	0.0	0.0	0.0	0.4
24"	0.0	1.6	0.0	1.6	0.0	0.0	0.0	0.0
26"	0.0	0.9	0.0	0.9	0.0	0.0	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	181	164	16	1
Residual	75	57	16	1
Take	107	107	0	0

Basal Area/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	187	173	12	2
Residual	110	97	12	2
Take	75	75	0	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	13.8	13.9	11.7	19.2
Residual	16.4	17.7	11.7	19.2
Take	11.3	11.3	0.0	0.0

Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	51	38	43
Residual	28	21	24

Oregon Department of Forestry
Stand Table

West Standard

Area VI

DBH	Total TK tr/acre	Total LV tr/acre	Doug-fir TK tr/acre	Doug-fir LV tr/acre	Hemlock TK tr/acre	Hemlock LV tr/acre	Noble Fir TK tr/acre	Noble Fir LV tr/acre
7"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8"	8.1	16.3	8.1	0.0	0.0	16.3	0.0	0.0
9"	26.3	16.4	26.3	0.0	0.0	16.4	0.0	0.0
10"	31.7	7.9	31.7	0.0	0.0	7.9	0.0	0.0
11"	6.4	8.6	6.4	8.6	0.0	0.0	0.0	0.0
12"	1.9	13.0	0.0	11.1	1.9	1.9	0.0	0.0
13"	1.6	3.1	0.0	0.0	1.6	3.1	0.0	0.0
14"	1.4	8.2	0.0	6.8	1.4	1.4	0.0	0.0
15"	1.2	7.0	0.0	5.8	1.2	1.2	0.0	0.0
16"	1.0	10.0	0.0	9.0	1.0	1.0	0.0	0.0
17"	0.0	5.4	0.0	4.5	0.0	0.9	0.0	0.0
18"	0.0	3.9	0.0	3.9	0.0	0.0	0.0	0.0
19"	0.0	2.9	0.0	2.9	0.0	0.0	0.0	0.0
20"	0.0	4.5	0.0	4.5	0.0	0.0	0.0	0.0
21"	0.0	2.4	0.0	2.4	0.0	0.0	0.0	0.0
22"	0.0	1.7	0.0	1.7	0.0	0.0	0.0	0.0
24"	0.0	2.1	0.0	2.1	0.0	0.0	0.0	0.0
26"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Trees/acre

	All Spec	Doug-fir	Hemlock	Noble fir
Current	193	136	57	0
Residual	113	63	50	0
Take	80	73	7	0

Basal Area/acre

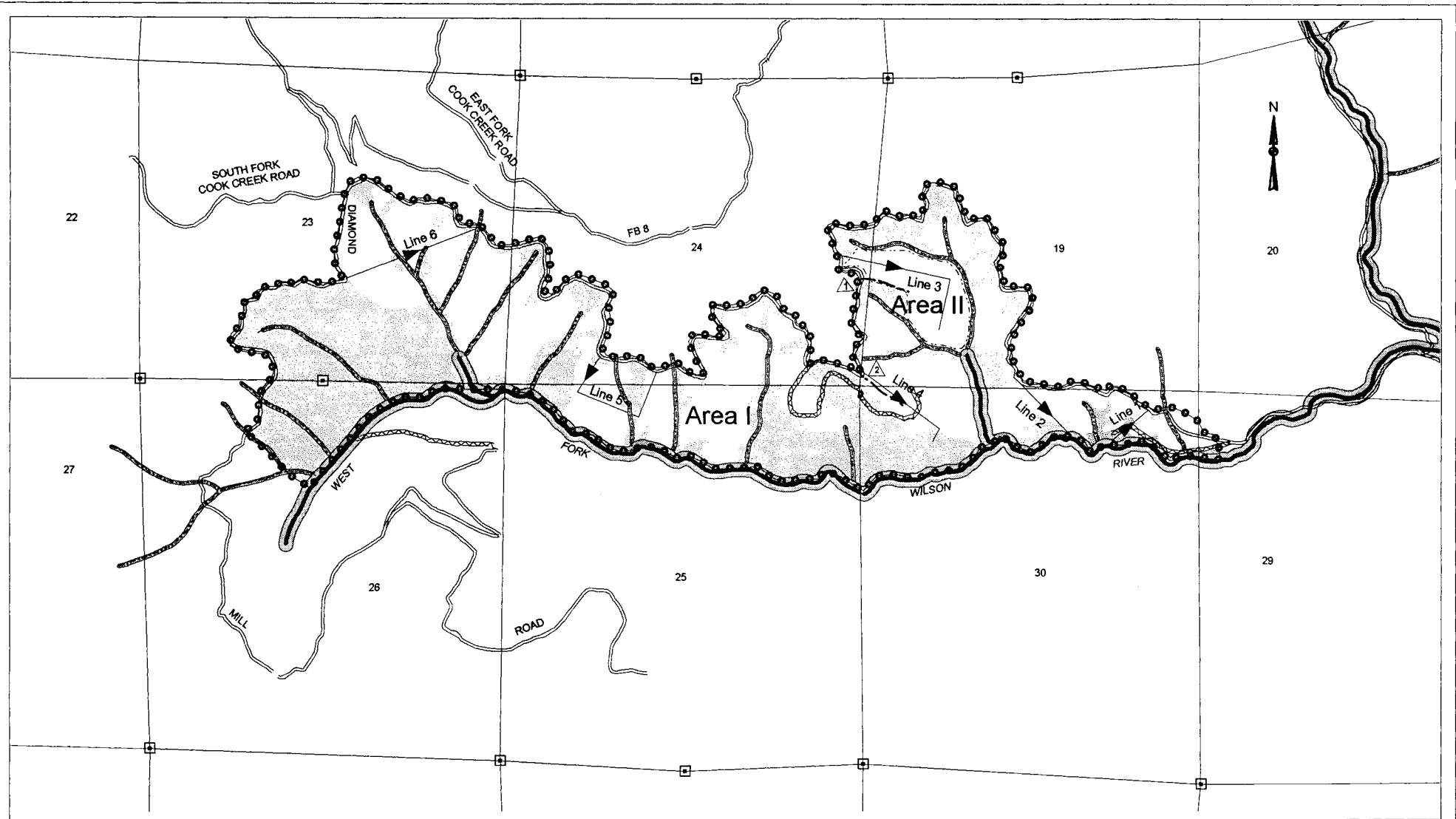
	All Spec	Doug-fir	Hemlock	Noble fir
Current	158	124	34	0
Residual	110	89	27	0
Take	43	36	7	0

Quadratic Mean Diameter

	All Spec	Doug-fir	Hemlock	Noble fir
Current	12.3	12.9	10.5	0.0
Residual	13.4	16.1	10.0	0.0
Take	9.9	9.5	13.5	0.0

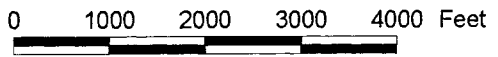
Stand Density Index (%)

	Doug-fir	Hemlock	Noble fir
Current	45	34	38
Residual	30	23	26

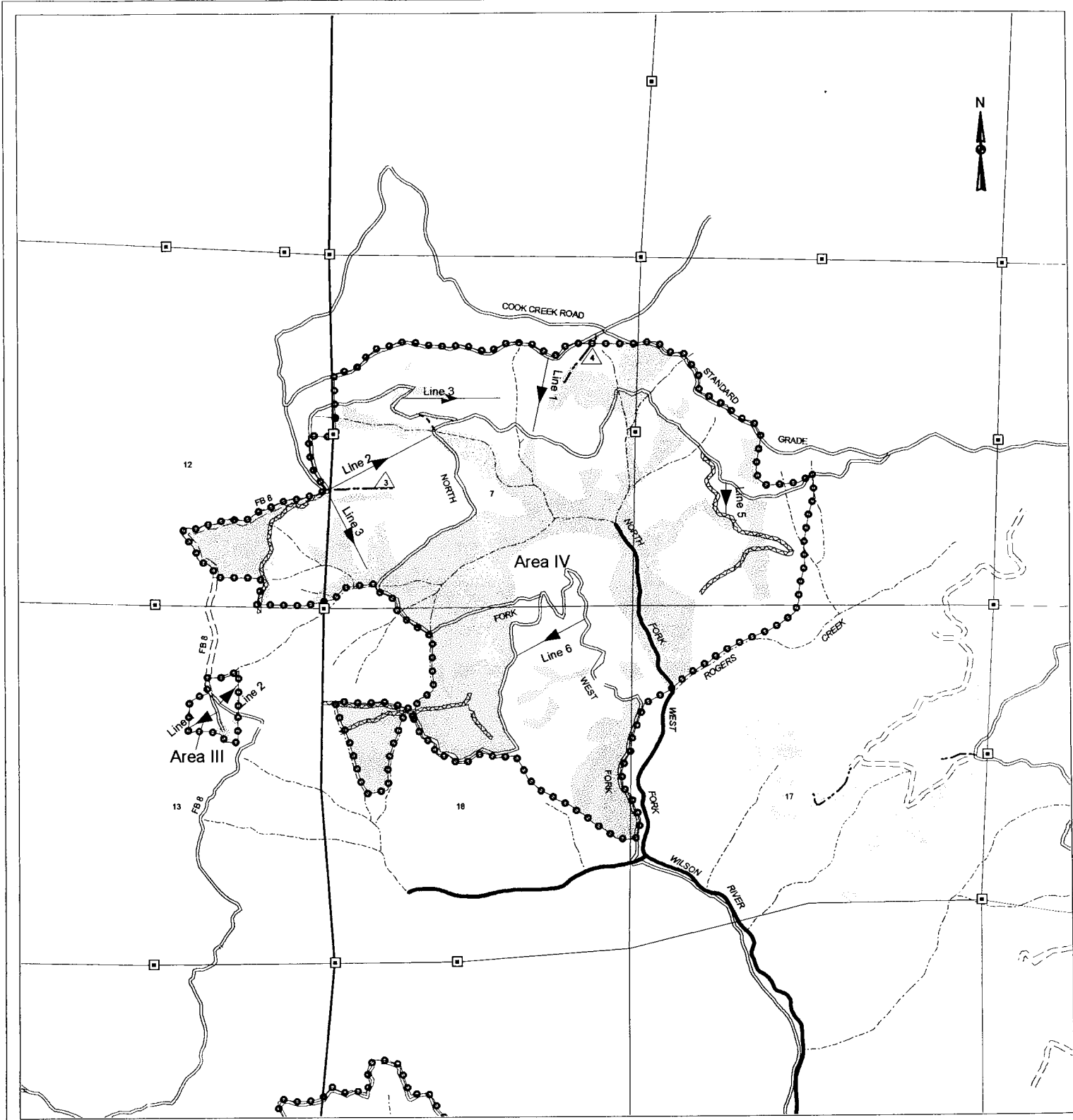


- Timbersale boundary
- Area boundary
- Known Land Survey Corner
- Type F Stream
- - - Type N Stream
- ▨ Stream Buffer
- ==== Surfaced existing road
- - - - Unsurfaced existing road
- County Roads
- - - New construction Road
- Abandoned Road
- Non Project Road
- ▨ Non- required thinning Corridors

West Standard
Cruise Line Map
Portions of Sections 7,8,17,18,
19,21, 29,30, T2N,R7W, and
Sections 12,13,23, 24, 25, 26, T2N,
R8W, W.M.Tillamook County, Oregon

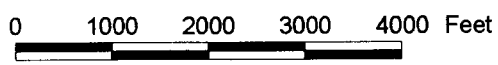


Approximate Acreage:			
Area	Gross	Net Thin	Net Regen
I	611	270	—
II	30	—	24
III	13	11	—
IV	853	498	—
V	174	131	—
VI	70	65	—
Total	1751	975	24

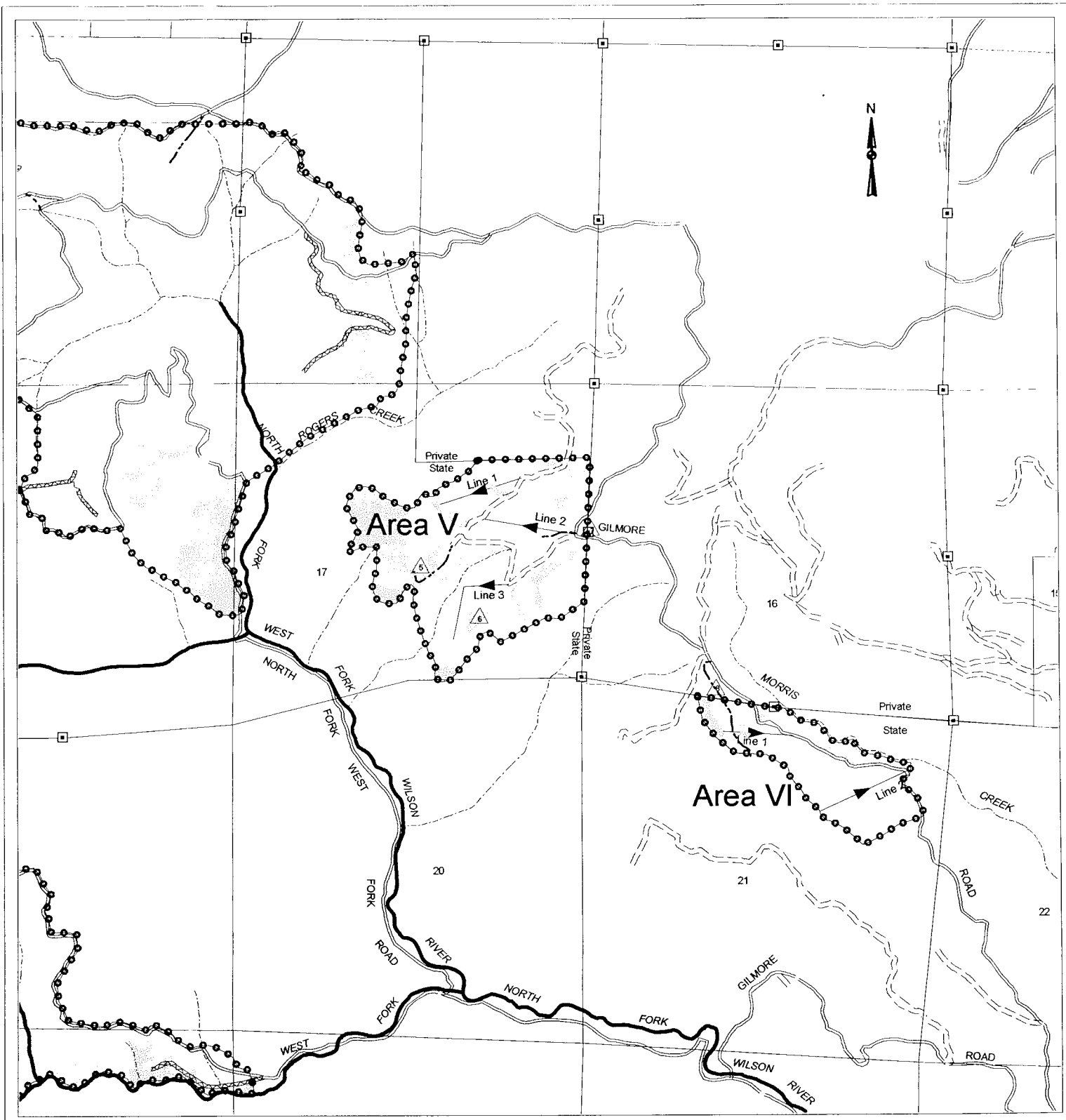


- Timbersale boundary
- - - - - Area boundary
- Known Land Survey Corner
- Type F Stream
- - - - - Type N Stream
- ▨ Stream Buffer
- ▬ Surfaced existing road
- ▤ Unsurfaced existing road
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**West Standard
Cruise Line Map**
Portions of Sections 7,8,17,18,
19,21, 29,30, T2N,R7W, and
Sections 12,13,23, 24, 25, 26, T2N,
R8W, W.M.Tillamook County, Oregon

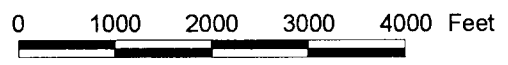


Approximate Acreage:				
Area	Gross	Net Thin	Net Regen	
I	611	270	—	
II	30	—	24	
III	13	11	—	
IV	853	498	—	
V	174	131	—	
VI	70	65	—	
Total	1751	975	24	



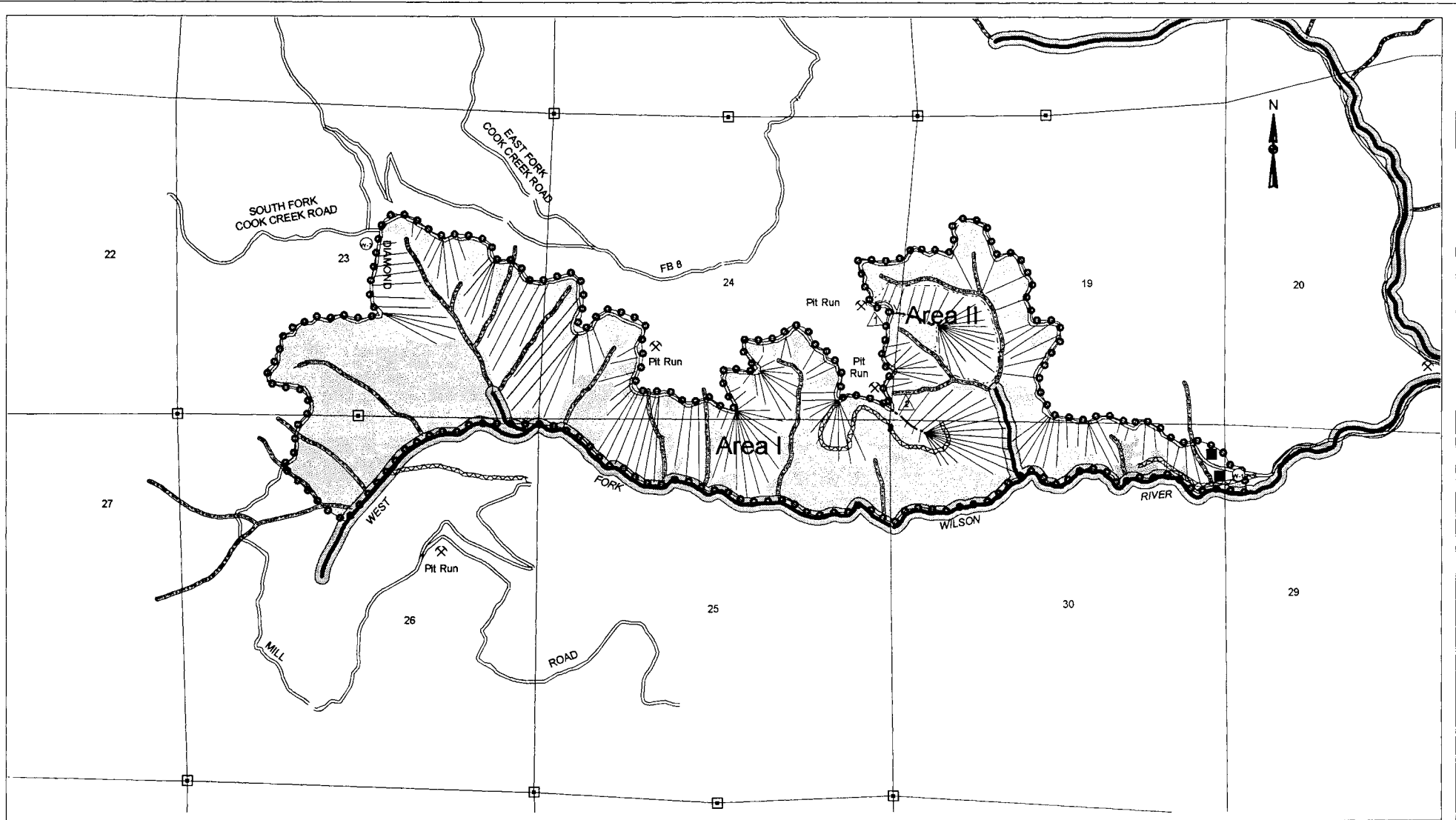
- Timbersale boundary
- Area boundary
- Known Land Survey Corner
- Type F Stream
- - - Type N Stream
- ▨ Stream Buffer
- ==== Surfaced existing road
- - - - Unsurfaced existing road
- County Roads
- - - New construction Road
- - - - Abandoned Road
- ▨ Non Project Road
- ▨ Non- required thinning Corridors

**West Standard
Cruise Line Map**
 Portions of Sections 7,8,17,18,
 19,21, 29,30, T2N,R7W, and
 Sections 12,13,23, 24, 25, 26, T2N,
 R8W, W.M.Tillamook County, Oregon



Approximate Acreage:

Area	Gross	Net Thin	Net Regen
I	611	270	—
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III	13	11	—
IV	853	498	—
V	174	131	—
VI	70	65	—
Total	1751	975	24



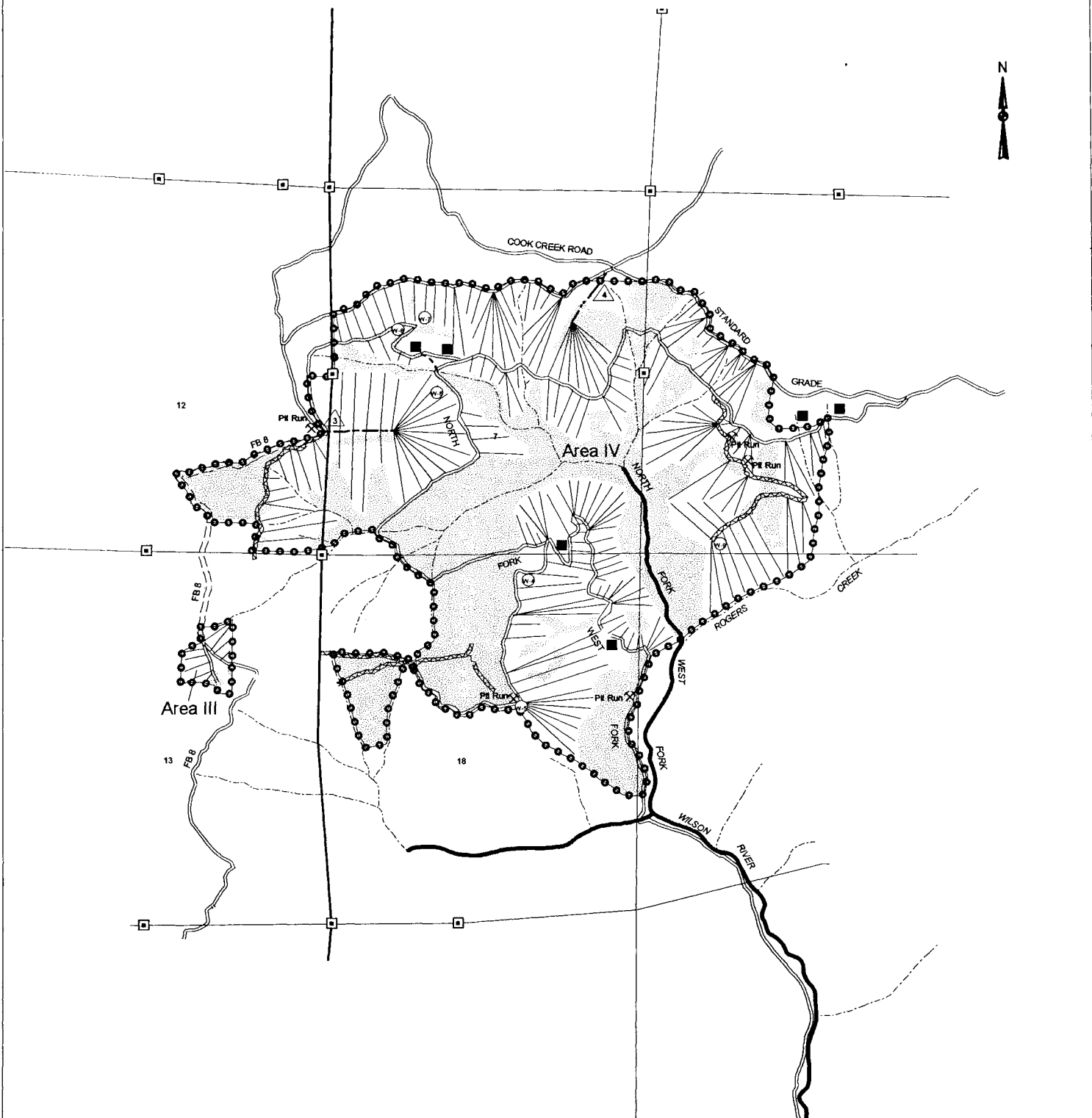
- Timbersale boundary
- Area boundary
- ⊙ Waste area
- ⊙ Stockpile
- ⊗ Rock pit
- ⊠ Known Land Survey Corner
- Type F Stream
- - - Type N Stream
- ▨ Stream Buffer
- ▬ Surfaced existing road
- - - Unsurfaced existing road
- ▬ County Roads
- - - New construction Road
- ▬ Abandoned Road
- ▬ Non Project Road
- ▬ Corridors
- Tractor Landings
- ▨ Non Required Thinning

**West Standard
Logging Plan**
Portions of Sections 7,8,17,18,
19,21, 29,30, T2N,R7W, and
Sections 12,13,23, 24, 25, 26, T2N,
R8W, W.M.Tillamook County, Oregon

0 1000 2000 3000 4000 Feet

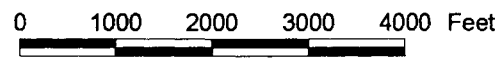
Approximate Acreage:

Area	Gross	Net Thin	Net Regen
I	611	270	—
II	30	—	24
III	13	11	—
IV	853	498	—
V	174	131	—
VI	70	65	—
Total	1751	975	24

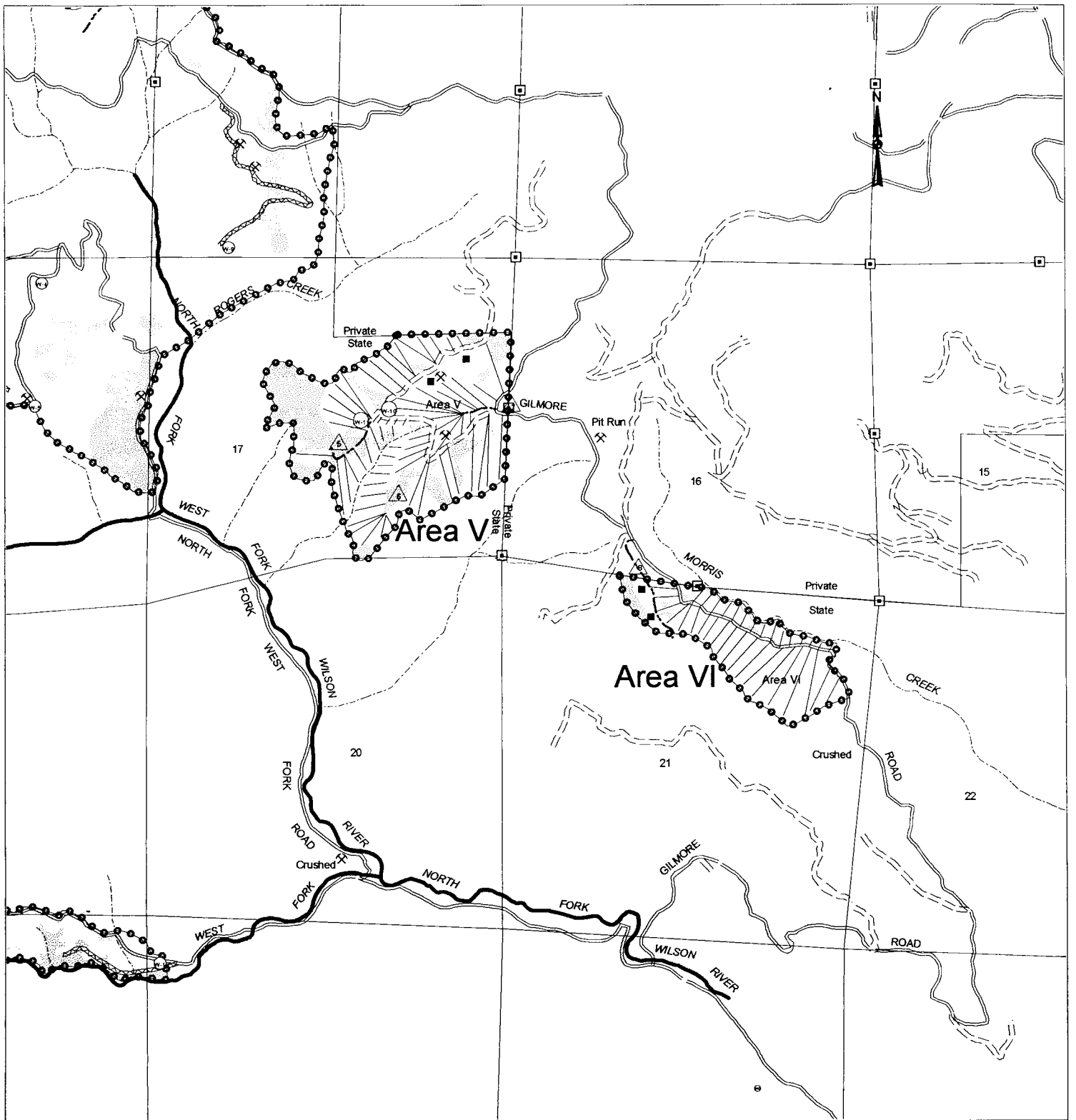


- Timbersale boundary
- - - - - Area boundary
- ⊙ Waste area
- ⊙ Stockpile
- ⊗ Rock pit
- Known Land Survey Corner
- Type F Stream
- - - - - Type N Stream
- ▨ Stream Buffer
- Surfacd existing road
- - - - - Unsurfacd existing road
- County Roads
- - - - - New construction Road
- - - - - Abandoned Road
- ▲ Non Project Road
- Corridors
- Tractor Landings
- Non Required Thinning

**West Standard
Logging Plan**
Portions of Sections 7,8,17,18,
19,21, 29,30, T2N,R7W, and
Sections 12,13,23, 24, 25, 26, T2N,
R8W, W.M.Tillamook County, Oregon

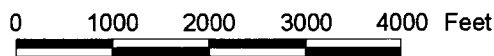


Approximate Acreage:				
Area	Gross	Net Thin	Net Regen	
I	611	270	—	
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Logging Plan**
Portions of Sections 7,8,17,18,
19,21, 29,30, T2N,R7W, and
Sections 12,13,23, 24, 25, 26, T2N,
R8W, W.M.Tillamook County, Oregon



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III	13	11	—
IV	853	498	—
V	174	131	—
VI	70	65	—
Total	1751	975	24

**OREGON DEPARTMENT OF FORESTRY ·
WRITTEN PLAN**

SALE NAME: West Standard

PROTECTED RESOURCES: West Fork Wilson River and North Fork West Fork Wilson River, large Type "F" streams.

LOCATION: Portions of Section 7, 8, 17, 18, 19, 29 and 30, T2N, R7W, and 23, 24, 25 and 26, T2N, R8W, W.M., Tillamook County, Oregon.

ACTIVITIES: Logging cables strung across Type F streams for deflection; cable and ground yarding; and road improvement (culvert installation, road widening and rocking).

Riparian Management Area (RMA): The area within 100 feet horizontal distance from the high water mark on each side of the protected large Type F stream. **High Risk Sites:** Active landslides and slumps; slopes steeper than 80%; and headwalls or draws steeper than 70%.

PROTECTION MEASURES:

YARDING and FELLING:

- All trees in the RMA outside of yarding corridors are reserved from cutting.
- Adjacent trees will be felled away from or parallel to the RMA.
- If trees or logs fall or slide into a stream channel they will not be limbed, bucked, or removed without approval from ODF.
- When cable yarding lines are strung across RMA's they will be at least 150 feet apart and pulled out prior to rigging the next yarding road.
- Cable yarding will be used on high risk sites.
- A self-clamping carriage capable of passing over intermediate supports and being positioned and repositioned for each turn of logs without lowering the skyline will be used to control the direction of yarding.
- Intermediate supports will be used to provide lift.
- Logs will have at least one end suspended when yarded.
- Soil gouging will be incidental and limited to a depth of 1 foot (measured vertically).
- Type N streams shown on the timber sale Exhibit "A" will have a 25 foot no harvest buffer to protect water quality and high risk sites that may be in these areas.
- Ground yarding equipment will not operate within 35 feet of Type N streams and 50 feet of Type F streams
- Ground yarding will not be allowed on high risk sites.
- Active landslides and slumps discovered within the harvest areas will be reviewed by the State to determine protective measures for these areas. Further consultation with the Area geotechnical specialist and/or removal of the sites from the harvest area may be required.

PROJECT WORK:

- In stream project work activity within 100 feet of the protected streams will be limited to the period between July 1 and September 15.
- Sediment traps will be used as needed to protect water quality.
- Fill material will be placed and compacted in 8 inch lifts. Fill slopes will be constructed at a 1½ :1 fill width to height ratio.
- Rip rap placement will be accomplished by placing rock by machine rather than end dumping.
- Waste material will be end-hauled to stable locations marked in the field.
- Roads will not be constructed on high risk sites.

06/11/01

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