

Erosion Control - The End 8021 CCF

		# Landing	Acres	
Ground based acres	10.5	1	0.25	ground landings are also shared with cable and counted as cable
Skyline acres	373.4	238	59.5	61.25 ac
Helicopter acres	41.2	2	1.5	

Skid Roads; ground based expect up to 15% of the acreage to be disturbed . Approximately 10% of this acreage will require seed and fert... 0.15 10.5 0.1 0.2 ac **use 10% of length**

	Length	Width	Sq FT/ Ac		
Temp Roads:	18584	14	43560	0.1	
					0.6 ac
				Total ac	62.0 seed and fert ac use 10% of length

Seed and fertilize: one person can seed and fert 2.2 ac/day;
 Acres Ac/Day Days \$/Day
 62.0 2.2 28 150 \$4,227.27 labor

materials and equipment; 62.0 ac x \$175/ ac =
 Ac \$/Ac
 62.0 175 \$10,850.00 materials and equipment seed and fert

scarify skid roads: district experience on recent sales shows scarification cost to be \$100/ac over entire sale acreage
 Ac \$/Ac
 10.5 100 \$1,050.00 scarification

Total \$16,127.27

21% overhead: 1.21 \$16,127.27 \$19,514.00

Cost/ CCF **\$2.43**

The End Landing Construction Cost

8021 CCF

Helicopter Landing Construction

Landings will be constructed at the time the temp road is constructed. Natural openings will be used where possible. Approximately 1/2 acre in size. Approximately 0 landings will be needed.

	Cost/UM	# Days	Hrs	Cost	
Falling landing area	\$250.00	0		\$0.00	
Clearing area	\$500.00	0		\$0.00	
Shaping Landing Area (Excavator or cat & dump truck)	\$200.00	0	0	\$0.00	
Reshaping of road surfaces (2 hours/ landing)	\$500.00		0	\$0.00	included in Temp RD Cost
				\$0.00	
			\$/CCF	\$0.00	

Ground Based Landing Construction

Landings will be constructed at the time the temp road is constructed. Natural openings will be used where possible. Approximately 1/4 acre in size. Approximately 1 landing (rest are shared cable landings) will be needed. Most will be on existing landings

	Cost/UM	# Days	Hrs	Cost	
Falling landing area	\$250.00	0.5		\$125.00	
Clearing area	\$500.00	0.5		\$250.00	
Shaping Landing Area (Loader or Cat)	\$100.00		2	\$200.00	
Reshaping of road surfaces (2 hours/ landing)	\$500.00		0	\$0.00	included in Temp RD Cost
				\$575.00	
			\$/CCF	\$0.07	

Skyline Landing Construction All units will need to have landings constructed or reconstructed. Landings on system roads will be off road surface if possible. Landings will be constructed at the time the temp road is constructed. Natural openings will be used where possible. Approximately 1/4 acre in size. Approximately 238 landings will be needed with approximately 18 landings on open system road. 220 are on other roads and need some amount of improvement. Approximately 4 Landings can be constructed per day. Landings along the ridge line will be used for both sides of the unit.

	Cost/UM	# Days	Hrs	Cost	
Additional Falling of landing area	\$250.00	5		\$1,250.00	
Clearing area	\$500.00	5		\$2,500.00	
Shaping Landing Area (Loader or Cat) 2 hrs/ landing	\$100.00		220	\$22,000.00	
Reshaping of road surfaces (1 hr per landing)	\$500.00		18	\$9,000.00	of system roads
				\$34,750.00	
			\$/CCF	\$4.33	

Total Landing Construction Cost **\$4.40** \$/CCF

Brush Disposal Plan Narrative

Sale Name: The End

Date: 07-18-2014

Prepared by: Micah Johnson

Reviewed by:

Reviewed by:

NEPA DOCUMENT

This project is part of the West Fork of the Humptulips Environmental Assessment. Project design should provide buffer zones that would reduce expected fire behavior and spread to a level that would lend itself to successful initial attack by firefighting resources. Buffer zones would be created along any roadway left open to public use after management activities are completed and along all boundaries with private lands, power line corridors, and Special Use Permit access roads. Buffer zone dimensions would be determined by site specific conditions. Buffer zones would be 50 to 200 foot wide strips along areas of concern and would incorporate one or more, or combination of several of the following activity methods: directional falling of trees to keep from adding to existing fuels; redistribution of slash by lopping and scattering or end hauling slash back into units or other locations; machine pile and burning of slash at cable, ground base, and helicopter landings where the slash can't be redistributed; or hand pile and burning of activity fuels left within the buffer zones outside of landing areas. The actual method selected to treat activity fuels will be site specific and determined after final layout and design of units.

FUELS OBJECTIVE

The objective of fuels management for the The End timber sale is to reduce the risk of wildfire ignitions along road systems and to reduce wildfire rate of spread into or out of the untreated portions of units. A total fuel loading of 6 tons per acre or less for the 1-hour (less than 0.25 inches diameter), 10-hour (0.25 to 1 inch in diameter) and 100-hour (1 inch to 3 inches in diameter) sized fuels would be a desirable level in treated areas. This total fuel loading would be for strips 50 to 200 feet wide along any roadway left open to public use after management activities are completed. The desired fuel load of 6 tons per acre can be met through directional felling and burning, treating the activity fuels along the roadways left open to public use will reduce rate of spread in those areas and allow for greater success in suppression of a human caused fire.

FUELS TREATMENT NARRATIVE

Treatment:

The West Fork of the Humptulips Environmental Assessment states the need to treat 50 to 200 feet in along any road way left open to public use after management activities are completed and along all boundaries with private lands, power line corridors, and Special Use Permit access roads. This will be accomplished by hauling slash back into the unit, directional felling, lopping and scattering and piling and burning of activity fuels.

Cable Units 9, 9A, 10B, 10A, 68, 68A AND 68B.

A treatment area will be designated from the edge of the treated stand along the roads that will remain open after the sale is complete extending 66 feet into the treated stands. Activity slash within the designated treatment strips will be reduced by directional felling trees so the majority of slash will fall outside the designated treatment strips. The small amounts of slash defined as slash with a diameter of 1/4 inch to 5 inch and 3 feet in length or greater remaining in the designated treatment strips will be pulled back into the unit and scattered to a depth of no

more than 2 feet or less. Material larger than 5 inches does not need to be pulled back provided all limbs are removed and pulled back into the unit and scattered to a depth of no more than 2 feet or less. Landing slash at landing locations on or within 66 feet of roads that will remain open, will be piled and covered by the purchaser and burned by Forest Service to the following specifications:

- Landing piles shall be a minimum of 8 feet from adjacent timber.
- Pile height shall be at least two-thirds that of the width and be free of noncombustible material including soil.
- Piles will be covered with Kraft 30-30-30 paper or polyethylene plastic or equivalent having a minimum of .012 inch thickness or equivalent.
- Covering shall be placed midway vertically in the pile in one continuous sheet covering not less than 60 percent of the surface area of the pile.
- Slash will be placed on top of cover material to hold it in place.

For all other landings in the above designated units that exist on roads that will be closed after the sale is complete. Slash shall be removed from landing areas and distributed evenly over skid roads and skyline corridors used within the subdivisions concurrent with yarding. Any slash remaining at these landing areas, skid roads and skyline corridors will be lopped and scattered to be no more than a depth of 2 feet or less.

Temporary and System Road Slash. Any slash created by the construction or reconstruction of system or temporary roads will be pulled back and scattered a distance of 66 feet from junctions of roads that will remain open after the sale is complete.

Cost break out

Burning of Piled materials:

The total cost of burning piled materials is \$4,375.56 or \$1127.72 per acre for the 3.88 acres. Costs were calculated by using salary for 8 people for planning, burning and monitoring the piles. Overtime, vehicle use, supply and periderm costs are incorporated into this figure. These costs are then inflated at 2% per year to \$1196.75 per acre in 2017 to give you a total of \$4,643.38 *See attached worksheet 1*

Fuels Inventory:

Fuels inventory cost \$3,677.16 or \$20.14 per acre for 182.6 acres. 18 Plots will be established after harvesting is completed cost per plot is \$204.29. Costs were calculated by using salary for 9 people admin cost for planning and input of collected data. For data collection 2 GS7, 2 GS6 and 2 GS5 cost includes the of use on vehicles, supplies and periderm. *See worksheet below 2*

Total BD Cost:

The total costs for Administration, Pile burning and Fuels inventory are \$8,545.61 or \$46.80per acre for 182.6 acres. The National Program Support Cost is \$3529.34 calculated at a rate of 41.3%. The total cost of treatment is \$12,074.95 or \$66.13 per acre for 182.6 acres.

See attached worksheet 3

Estimated Purchaser Cost:

The total estimated purchaser cost is estimated at \$1501.00 or \$386.86per acre for the 3.88 acres. This was estimated by the following and calculated on the spread sheet below.

Covering and re-piling of the landing piles with one laborer at \$19.92 at 1 hour per day for 5 days for covering, redistribution and restacking is \$498.00. One Loader with operator at \$95.00 per hour for 8 hours is \$760.00. Pile covering, chain saw fuel, 2 cycle oil and bar oil is estimated at \$. With 7 rolls of visqueen at \$26.00 per roll for \$182.00, 2 gallons saw fuel at \$4.00 a gallon for \$8.00, 1- 6/2.6 fl oz of 2 cycle mix at \$14.00 per 6 and 1 gallons of bar oil at \$13.00 per gallon for \$13.00.

See worksheet below 4

Work Sheet 1

Olympic National Forest KV/BD Cost Estimation Sheet (Slash Preparation Work Conducted by Purchaser/Burned by Forest)													
Sale Unit	The End			Treatment Type				Total Acres Treated	3.88				
Personnel Costs													
Type of work	# Needed	\$/Hr	\$/CCF	Days or Pile	Hours/unit	CCF/Acre	Acres	Activity				Cost/Acre	Total
Laborer	1	\$19.92		5	5		3.88	MP/HP				\$128.35	\$498.00
Faller	1		\$0.26				3.88	DF				\$0.00	\$0.00
												\$0.00	\$0.00
												\$0.00	\$0.00
												\$0.00	\$0.00
												\$0.00	\$0.00
												\$0.00	\$0.00
												\$0.00	\$0.00
Equipment Costs (including operator)													
Equipment Type	# Needed	\$/Hr	\$/Day	Hours	Days	Acres	Activity	Cost/Acre	Total	Type of Supplies	Units	\$/Unit	Total
Loader	1	\$95.00		8			MP	\$0.00	\$760.00	Visqueen (10x100)	7	\$26.00	\$182.00
								\$0.00	\$0.00	Saw Fuel	2	\$4.00	\$8.00
								\$0.00	\$0.00	2cycle/mix	1	\$14.00	\$14.00
								\$0.00	\$0.00	Bar oil	3	\$13.00	\$39.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
Total Project Costs													
Personnel Totals		Equipment Totals		Supply Costs									
\$498.00		\$760.00		\$243.00									
Total Cost to the Purchaser		Total Cost Per Acre to Purchaser											
\$1,501.00		\$386.86											
Treatment Types: DF=Directional Falling; MLS=Machine Lop and Scatter; HLS=Hand Lop and Scatter; HP=Hand Pile and Cover; MP=Machine Pile and Cover;													

Work Sheet 2

Olympic National Forest KV/BD Cost Estimation Sheet (Slash Preparation Work Conducted by Purchaser/Burned by Forest)

Sale Unit	The End	Treatment Type	Total Acres Treated	3.88
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Personnel Costs												
Type of work	# Needed	\$/Hr	\$/CCF	Days or Pile	Hours/unit	CCF/Acre	Acres	Activity			Cost/Acre	Total
Laborer	1	\$19.92		5	5		3.88	MP/HP			\$128.35	\$498.00
Faller	1		\$0.26				3.88	DF			\$0.00	\$0.00
											\$0.00	\$0.00
											\$0.00	\$0.00
											\$0.00	\$0.00
											\$0.00	\$0.00

Equipment Costs (including operator)										Supply Costs			
Equipment Type	# Needed	\$/Hr	\$/Day	Hours	Days	Acres	Activity	Cost/Acre	Total	Type of Supplies	Units	\$/Unit	Total
Loader	1	\$95.00		8			MP	\$0.00	\$760.00	Visqueen (10x100)	7	\$26.00	\$182.00
								\$0.00	\$0.00	Saw Fuel	2	\$4.00	\$8.00
								\$0.00	\$0.00	2cycle/mix	1	\$14.00	\$14.00
								\$0.00	\$0.00	Bar oil	3	\$13.00	\$39.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00
								\$0.00	\$0.00				\$0.00

Total Project Costs			
Personnel Totals	Equipment Totals	Supply Costs	
\$498.00	\$760.00	\$243.00	

Total Cost to the Purchaser	Total Cost Per Acre to Purchaser		
\$1,501.00	\$386.86		

Treatment Types: DF=Directional Falling; MLS=Machine Lop and Scatter; HLS=Hand Lop and Scatter; HP=Hand Pile and Cover; MP=Machine Pile and Cover;

The End

Sale Volume

8021 CCF

Road Name	50k/mile new const	35k/mile Heavy	30k/mile Reconstruction Moderate	25k/mile Light	total ft	Subdivision	Travel Way	Rock Depth	CY Rock	Culverts
T1			300		300	10	12	6	72	
T1			2578		2578	10	12	6	310	
T2				429	429	10	12	6	26	
T3			1432		1432	10C	12	12	689	5
T3			885		885	10C	12	6	107	18"
T4		756			756	9	12	6	182	1
T5				109	109	9A	12	6	13	1
	0	756	5195	538	6489			Totals =	1399	7
Miles	0.00	0.14	0.98	0.10	1.23			spot rock		

Average Rock Haul for pit run one way is 0.5 miles(Along T1)
 Average Rock Haul for crushed one way is 0 miles, na

New construction - as shown in above table. Use cost of \$50,000/mi from past district experience.

Reconstruction of existing grade includes some removal of timber , debris removal, drainage restoration, culvert placement, blading and shaping. Rock as shown in above table. Use cost of 70 % of new const for heavy, 60% moderate and 50% for light reconstruction

Clearing limits will not exceed 16 feet unless otherwise designated.

Estimated CY of Rock Needed

Temp. roads:	Pit Run	Crushed
All	1399	0
other	300	
Total	1699	

Landings & short access spurs

New construction temp 0.00 miles

0 miles X \$50,000 **\$0**

Culverts \$500/culvert **18" 24" 36"**
\$3,500.00

Reconstruction of temp roads	Heavy	Moderate	Light
miles	0.14	0.98	0.10
\$/mile	\$35,000	\$30,000	\$25,000
\$	\$4,900	\$29,400	\$2,500
			\$36,800.00

7 - 18 " culverts may be needed as relief culverts
 Placement of the culverts will be determined as described in Sensitive Construction of temp roads (C5.1, Option 1)

\$/load =	1 miles RndTrip		
	3 loads every hour		\$/load
	dump + excavator (half time) = \$164/hr		
	(\$164)/3 loads =		\$54.67
Ripping with Excavator =	40	\$94.21	\$3,768.40
(allow 40 hours)			Total = \$76.85

Rock Haul

	yards	loads	\$/load	Cost
Pit Run	1,699	170	\$76.85	\$13,056.82
Pit Run	0	0	\$246.00	\$0.00
Crushed	0	0	\$82.00	\$0.00

Total **\$13,056.82**

total =	\$63,856.82
cost per CCF =	\$7.96

Close Temp Roads - includes culvert removal, barrier placement, scarification for rehab, ~14inches. Seeding and fert is included in the erosion control appraisal:
 Approximately 1000 feet per day estimated.

Allow 7 days to use shovel to close roads at \$1500/day includes pr and r etc **\$10,500**

The End T.S.

SUBGRADE, SURFACING, AND ROCK

For appraisal purposes only, not part of the contract, not to be used as final design.

Road Name	From Station (Approx.)	To Station (Approx.)	Subdivision	Cut Slope Ratio	Fill Slope Ratio	Finished Surface Width Excluding Curve Widening and Turnouts Feet (Approx.)	Uncompacted Depth of New Rock Inches (Approx.)	Designated Rock Source	Remarks
							PIT RUN	PIT RUN	
T1	0+00	3+00	10	Utilize Existing Prism		12	6	Along T1	1,4
T1	3+00	28+78	10	Utilize Existing Prism		12	Spot as needed	Along T1	1,3,4
T2	0+00	4+29	10	Utilize Existing Prism		12	Spot as needed	Along T1	1,4
T3	0+00	14+32	10C	Utilize Existing Prism		12	12	Along T1	1,4
T3	14+32	23+17	10C	Utilize Existing Prism		12	Spot as needed	Along T1	1,4
T4	0+00	7+56	9	Utilize Existing Prism		12	6	Along T1	1,3,4
T5	0+00	1+09	9A	Utilize Existing Prism		12	Spot as needed	Along T1	1,4

DRAINAGE AND CULVERTS

Road Name	Station (Approx.)	Feature	Purpose	Minimum Culvert Diameter (Inches)	Q-100 Culvert Diameter (Inches)	Rock Source (Fill)	Remarks
						PIT RUN	
T3	0+00	Culvert	Ditch Relief	18	na	Along T1	
T3	3+55	Culvert	Ditch Relief	18	na	Along T1	
T3	6+24	Culvert	Ditch Relief	18	na	Along T1	
T3	9+01	Culvert	Ditch Relief	18	na	Along T1	
T3	11+07	Culvert	Ditch Relief	18	na	Along T1	
T4	0+00	Culvert	Ditch Relief	18	na	Along T1	
T5	0+00	Culvert	Ditch Relief	18	na	Along T1	

1. Inslope and outslope as needed to maintain proper drainage.
2. Landings and short access spurs, estimate 300 cubic yards.
3. Shift into cutbank to gain width in narrow sections.
4. Existing culverts may be utilized in place.

USDA - FOREST SERVICE
Stewardship: N

REPORT OF TIMBER SALE
APPRAISAL SUMMARY CCF

R6-FS-2400-17 (04/10)
Version 1431 (TEA 07-14)

Region: 06
Forest: 09 Olympic
District: 03 Quinault
Salvage: N

Sale Name: The End
Sale Number: 93430
Appraise to: Aberdeen
Appraiser: McNealy

Appraisal Date: 08/06/14
Base Period Ending: 06/30/14
Competition Factor: 20%
Essential KV Cost: 0

SELLING PRICES	1	2	3	4	5	6	7	Average	Total
1. Species	D-fir	W Hem							
2. Species Code	205	263							
3. Product/Unit	01-03	01-03							
4. Volume	969	7,052							8,021
5. Base Period Price	110.68	30.11						39.84	
6. Base Period Index	214.41	198.40						200.33	
7. Current Index	214.41	198.40						200.33	
8. Rapid Market Adj	10.40	10.40						10.40	
9. Market Adj BP Price	121.08	40.51						50.24	
10. Unusual Adjustment									
11. GBCv-Nonsaw Adj									
12. Product Quality Adj	15.00	15.00						15.00	
13. Adj Base Period Price	136.08	55.51						65.24	523,318.04

COSTS	Zone Avg Cost/UM	Est Sale Cost/UM	Adj to BP Cost	ROADS	Km	Miles	Cost
14. Stump to Truck	112.62	110.01	2.61	Specified Road Con			
15. Haul/Scale	30.24	33.93	-3.69	Specified Road Rec	.58	.36	11,131
16. Road Maintenance	9.82	17.23	-7.41	Temporary Road Con	1.98	1.23	63,857
17. Contract	5.90	4.12	1.78	Haul Miles		45	
18. Development & Other	5.62	12.36	-6.74				
19. Road Const & Recon		1.39	-1.39				
20. Total (lines 14-19)	164.20	179.04	-14.84	DEPOSITS:	Br Disp/UM 1.51	Rd Mtc/UM 4.18	C(T) 5.213# 3,175.98

ADVERTISED RATES	1	2	3	4	5	6	7	Average	Total
21. Predicted Bid Rate	121.24	40.67						50.40	404,286.40
22. Competition Adjustment	24.25	8.13						10.08	80,831.01
23. Property Value									
24. Indicated Adv Rate	96.99	32.54						40.33	323,455.39
25. Base Rate	3.00	3.00						3.00	24,063.00
26. Adjustment									
27. Advertised Rate	96.99	32.54						40.33	323,455.39

CCF to MBF Rate Factors: 1.8707 1.9044 1.9003
 CCF to MBF Volume Factors: .5346 .5251 .5262
 MBF to CCF Index Factors: .52 .52
 CCF Base Index for A(T)5a:
 CCF Wtd Avg Del Log Price: 349.53 319.91
 MBF Volume: 518 3,703 4,221
 Total Tons Removed: 2,927 23,307 26,234
 Net CCF to Tons Conversion Factor for C8.3#(Option 1) or K-I.3.1#: 3.2707 DEPOSITS/Ton BD: .46 RM: 1.28