ROAD RENOVATION/RECONSTRUCTION, CONSTRUCTION, & MAINTENANCE
See Also Exhibit A (Sheets 1-4) and Exhibit C

Unit #	Length (ft)	Surface Width (ft)	Stations	Description	Type	Total Stations	Total Length (ft)	Distance (mi)
4-1	3,064.53		30.65		Dedicated Skid Road	30.65	3,064.53	0.58
	7,763.22		77.63	Wolfe Camp Rd	Haul Route	77.63	7,763.22	1.47
	663.60		6.64	ROW WAOR-65294	Road Maintenance	6.64	663.60	0.13
	460.19		4.60	Echo Bay Rd Use Agreement	Road Maintenance	4.60	460.19	0.09
	1,791.60	12	17.92		Temp Road Construction	17.92	1,791.60	0.34
	1,000.00	12	10.00	5 Skid Rds & Temp Rd Segments	Decommission First 200'	10.00	1,000.00	0.19
6-1	1,499.53		15.00	Forwarder Routes	Dedicated Skid Road	15.00	1,499.53	0.28
	10,397.29		103.97	Day Creek Rd	Haul Route	103.97	10,397.29	1.97
	2,423.99		24.24	$155.00 Rd Easement Log Transport Cost	Road Maintenance	24.24	2,423.99	0.46
	17,609.52		176.10		Road Reconstruction	208.00	20,799.68	3.94
	2,943.22		29.43	Access Rd Easement				
	246.94		2.47	BLM connecting to 751 Rd				
	841.19	12	8.41	Optional Spur Rd	Temp Road Construction - Decommission All New Rds	10.86	1,086.40	0.21
	245.21	12	2.45	Optional Spur Rd				
	2,830.22		28.30	751 Rd; Pre/During/Post Haul Maintenance	USFS Road Maintenance	89.01	8,900.50	1.69
	6,070.28		60.70	750 Rd; Pre/During/Post Haul Maintenance				
	4,842.61		48.43	751 Rd; Pre/During/Post Haul Maintenance	USFS Road Reconstruction	48.43	4,842.61	0.92
9-2	5,551.00		55.51	Lone Ranch Creek Rd	Haul Route	75.14	7,513.82	1.42
	1,962.82		19.63	Day Creek Rd				
	561.00		5.61		Road Reconstruction	5.61	561.00	0.11
	2,690.03		26.90		Road Maintenance	26.90	2,690.03	0.51
	400.00	12	4.00	2 Rd Segments	Decommission First 200'	4.00	400.00	0.08
	511.17	12	5.11	Lower Spur	Temp Road Construction	9.12	912.31	0.17
	401.14	12	4.01	Upper Spur				
	6,276.34	14	62.76	DNR Rd Agreement	DNR Road Renovation	78.96	7,895.56	1.50
	1,619.22	14	16.19	DNR Rd Agreement				

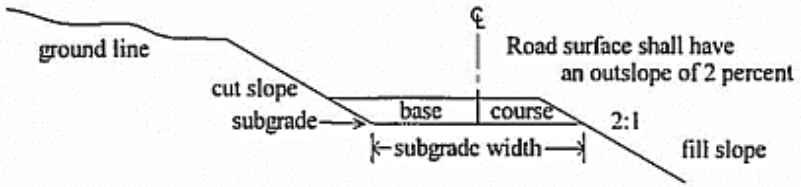
	1,138.23		11.38	DNR Rd Agreement	Dedicated Skid Road	11.38	1,138.23	0.22
	3,060.48		30.60	Day Creek Rd				
	1,968.50		19.68	Day Creek Rd	Haul Route	69.79	6,978.51	1.32
	1,949.54		19.50	Day Creek Rd				
15-1	1,977.72		19.78	O'Halloran Rd Use Agreement				
	2,005.62		20.06	BLM Northern Piece	Road Reconstruction	46.26	4,626.33	0.88
	386.00		3.86	BLM Southern Piece				
	257.00		2.57	BLM Southern Piece				
	795.49	12	7.95	BLM Southern Piece	Road Reconstruction	7.95	795.49	0.15
	200.00	12	2.00	1 Rd Segment	Decommission First 200'	2.00	200.00	0.04
	2,589.38	12	25.89	BLM	Temp Road Construction	25.89	2,589.38	0.49
	4,609.12	14	46.09	DNR Rd Agreement: Ops p.11	DNR Road Renovation	46.09	4,609.12	0.87
16-1	1,848.99	12	18.49	O'Halloran Rd Use Agreement	Road Reconstruction	18.49	1,848.99	0.35
	617.00	12	6.17	BLM	Road Reconstruction	6.17	617.00	0.12
	1,906.67		19.07	Schostak Access Agreement	Dedicated Haul Road	19.07	1,906.67	0.36
	3,943.71		39.44	Hurlburt Rd	Haul Route	41.78	4,177.75	0.79
	234.04		2.34	O'Halloran Rd Use Agreement				
	3,422.43		34.22	Durkos Ln Access Agreement	Road Reconstruction	47.33	4,733.12	0.90
21-1	1,310.69		13.11	Durkos Access Agreement				
	400.00	12	4.00	2 Rd Segments	Decommission First 200'	4.00	400.00	0.08
	2,186.68	12	21.87					
	132.98	12	1.33	O'Halloran Rd Use Agreement	Temp Road Construction	24.30	2,430.39	0.46
	110.74	12	1.11	Durkos Access Agreement				

Dedicated Skid Road	76.09	7,608.96	1.44
DNR Road Renovation (Reconstruction)	125.05	12,504.68	2.37
Haul Route	368.31	36,830.59	6.98
Road Maintenance	122.53	12,252.95	2.32
Road Reconstruction	339.82	33,981.61	6.44
Temp Road Construction	88.10	8,810.08	1.67
USFS Road Maintenance	89.01	8,900.50	1.69
USFS Road Reconstruction	48.43	4,842.61	0.92
Road Decommissioning	30.86	3,086.40	0.58

Decommissioning Constructed Landings & Skid Trails (Total AC): 12.94

Road Renovation: The contract will require the purchaser to renovate approximately 4.31 miles of existing roads and trails. However, most road renovation can be accomplished during normal logging operations. Most of the road renovation could be accomplished by simple brushing and removal of small trees that have grown into existing roads.
Road Construction: The location and length of temporary roads, including skid roads may be adjusted at the time of contract implementation. All temporary roads on BLM land must be decommissioned. See also attached Spec Sheets.
Road Maintenance: See Exhibit C
Decommissioning: Decompact temporary road construction surfaces, skid trails, and constructed landings. Rip to an approximate 10-18" depth, and place woody debris on deconstructed surfaces.

Specification Sheet



1. Road Standard	SN-14		_____		_____			
2. Alignment								
Max. degree of curve	75°		___		___			
3. Road Width								
Subgrade	14 ft.		_____ft.		_____ft			
Subgrade at turnout	24 ft.		_____ft		_____ft			
4. Gradient								
Max. favorable	15%		____		____			
Max. adverse	15%		____		____			
5. Clearing Width								
Beyond top of cut		3 ft.		_____ft.			_____ft.	
Beyond toe of fill		0 ft		_____ft.			_____ft.	
6. Surfacing								
Min. width	12 ft.		____ft.		____ft.			
Compacted depth		4 in.		____in.			____in.	

7. Full Bench Construction
   Slopes 60% and over shall be full bench construction.

8. Excavation Slopes

	Cut Slopes	Fill Slopes
Common	1:1	1½:1
Soft rock and shale	3/4:1	1½:1
Solid rock	½:1	Angle of repose

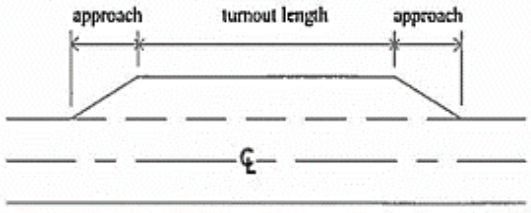
9. Extra Subgrade Widths
   Add to each fill shoulder 1 ft. for fills 1-6 ft., 2 ft. for fills over 6 ft.
   Widen inside shoulder of all curves as follows:

   When degree of curve equals:

7°- 21°--1 ft.	49°- 64°--4 ft.
22°- 35°--2 ft.	65°- 115°-5 ft.
36°- 48°--3 ft.	

10. Turnouts
    Standard length: 50 ft., approach length: 25 ft.
    Width: 10 ft. in addition to subgrade width.
    Location: intervisible or not over 700 ft. apart.
    Surfacing width: 10 ft. in addition to min. surface widths.

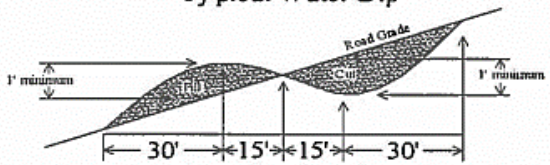
Typical Turnout



Water Dip Specifications

(For Roads with Grades Greater Than 8 Percent)

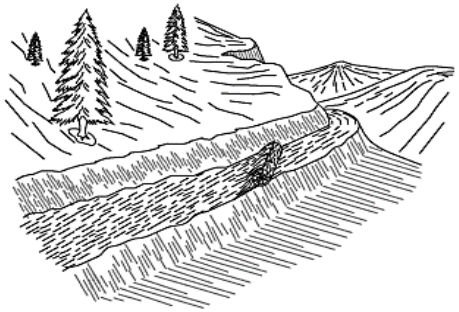
Typical Water Dip



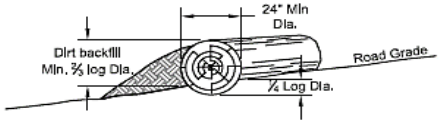
Cross Section View

WATER DIP SPECIFICATIONS						
ROAD GRADE IN %	SOIL TYPE			ROAD GRADE IN %	SOIL TYPE	
	GRANITIC OR SANDY	SHALE OR GRAVEL			GRANITIC OR SANDY	SHALE OR GRAVEL
1	1000	1000		9	300	900
2	900	1000		10	300	800
3	600	1000		11	300	700
4	400	1000		12	300	700
5	400	1000		13	300	600
6	300	1000		14	300	600
7	300	1000		15	300	500
8	300	900				

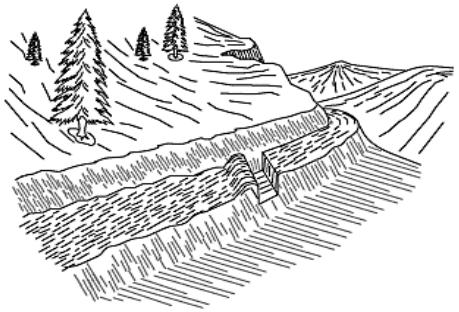
EXHIBIT ____



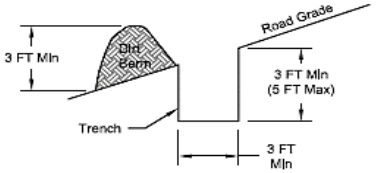
LOG BARRICADE



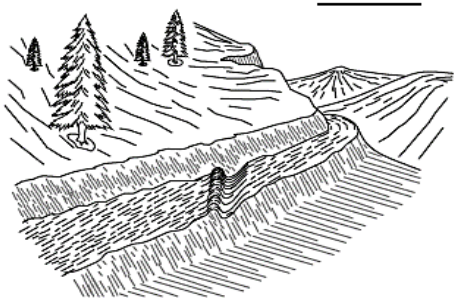
1. Log barricade shall be constructed as shown above.
2. Exact location is listed in Work List.
3. All barricades shall be skewed 30 degrees.
4. The length shall be sufficient to extend from the cut bank to the fill slope.
5. The minimum small end diameter of the log barricade shall be 24".



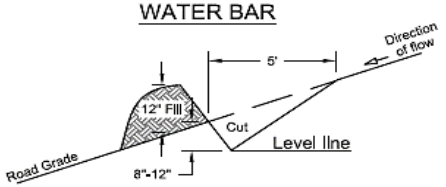
TRENCH BARRICADE



1. Barricade length shall extend across the entire road surface to a point sufficient to prohibit motor vehicle traffic.
2. Exact location is listed in the Work List.
3. All barricades shall be skewed as needed to drain or as directed by the Authorized Officer.

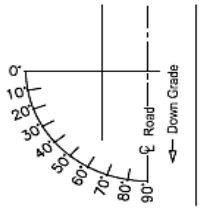


WATER BAR



1. Water bars shall be constructed as shown above.
2. Exact location will be flagged by the Authorized Officer prior to construction.
3. All water bars shall be skewed 30 degrees.
4. Upon completion of skidding logs, for the logging season, each skid road will have cross drainage constructed as shown above.

SKEW DIAGRAM



WATER BAR SPACING* BY EROSION CLASS^

ROAD GRADE	HIGH	MODERATE	LOW
%	FEET	FEET	FEET
2-5	200	300	400
6-10	150	200	300
11-15	100	150	200
16-20	75	100	150
21-35	50	75	100
35+	50	50	50

* Spacing is determined by slope distance and is the maximum allowed for the grade.

^ The erosion classes include the following rock types:
High: Granite, sandstone, andesite porphyry, glacial or alluvial deposits, soft matrix conglomerate, volcanic ash, and pyroclastics.
Moderate: Basalt, andesite, quartzite, hard matrix conglomerate, and rhyolite.
Low: Metasediments, metavolcanics, and hard shale.

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REV. NO.	DESCRIPTION	DATE	APPROV.

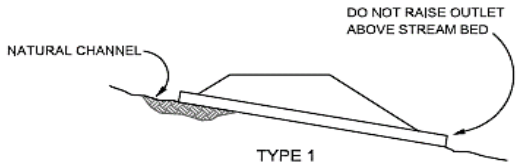
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT - MEDFORD, OREGON

STANDARD BARRICADE AND WATER BAR DETAILS

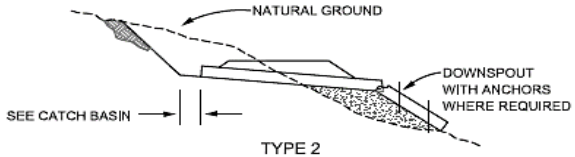
DRAFTED BY: BLM	SCALE: NONE
DATE: JULY 2019	SHEET: 1 OF 1
DRAWING NO.: OR-11-9113.4-4	

EXHIBIT ____

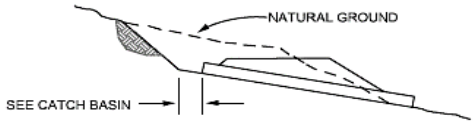
CULVERT INSTALLATION TYPES



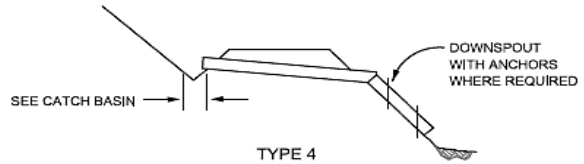
TYPE 1



TYPE 2

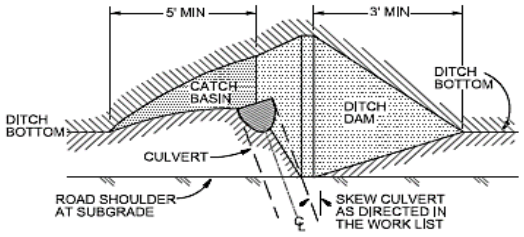


TYPE 3

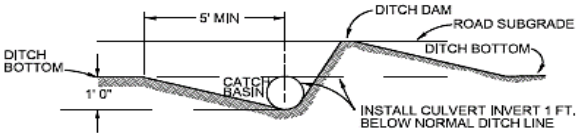


TYPE 4

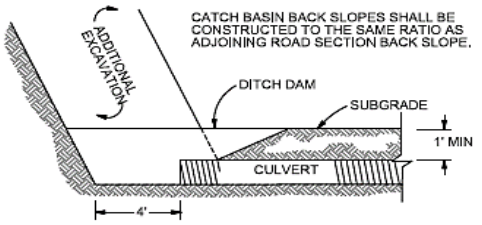
CATCH BASIN



PLAN VIEW

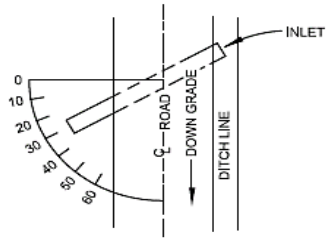


ELEVATION



CROSS SECTION AT CATCH BASIN

SKEW DIAGRAM



THE GRADE OF CROSSDRAINS SHALL BE AT LEAST 2% GREATER THAN THE GRADE OF THE DITCH.

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REV. NO.	DESCRIPTION	DATE	APPROV.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MEDFORD DISTRICT - MEDFORD, OREGON

TYPICAL CULVERT INSTALLATION DETAILS

DRAFTED BY: BLM	SCALE: NONE
DATE: JULY 2019	SHEET: 1 OF 2
DRAWING NO.: OR-11-9113,4-4	