

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE --- REGION SIX

WILLAMETTE NATIONAL FOREST

MIDDLE FORK RANGER DISTRICT

Lane County, Oregon

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PLANS FOR

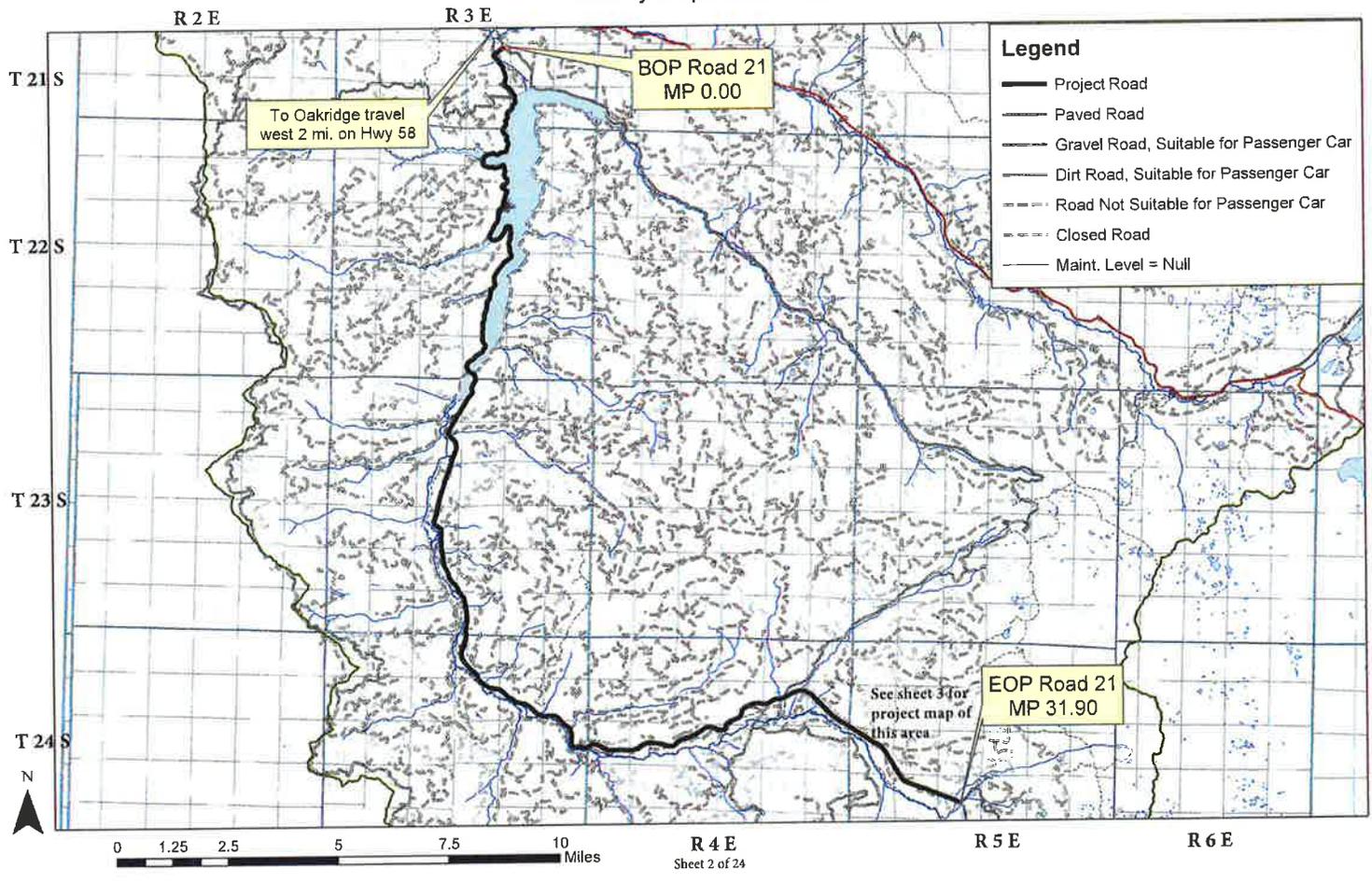
GULCH THIN TIMBER SALE  
ROADS

<u>ROAD NO.</u>	<u>LENGTH/MILES</u>	<u>CONST./RECONST.</u>
21	31.90	Reconstruction
2100 400	0.86	Reconstruction
2149	2.44	Reconstruction
2154	0.55	Reconstruction
2154 380	0.47	Reconstruction
2154 382	0.47	Reconstruction

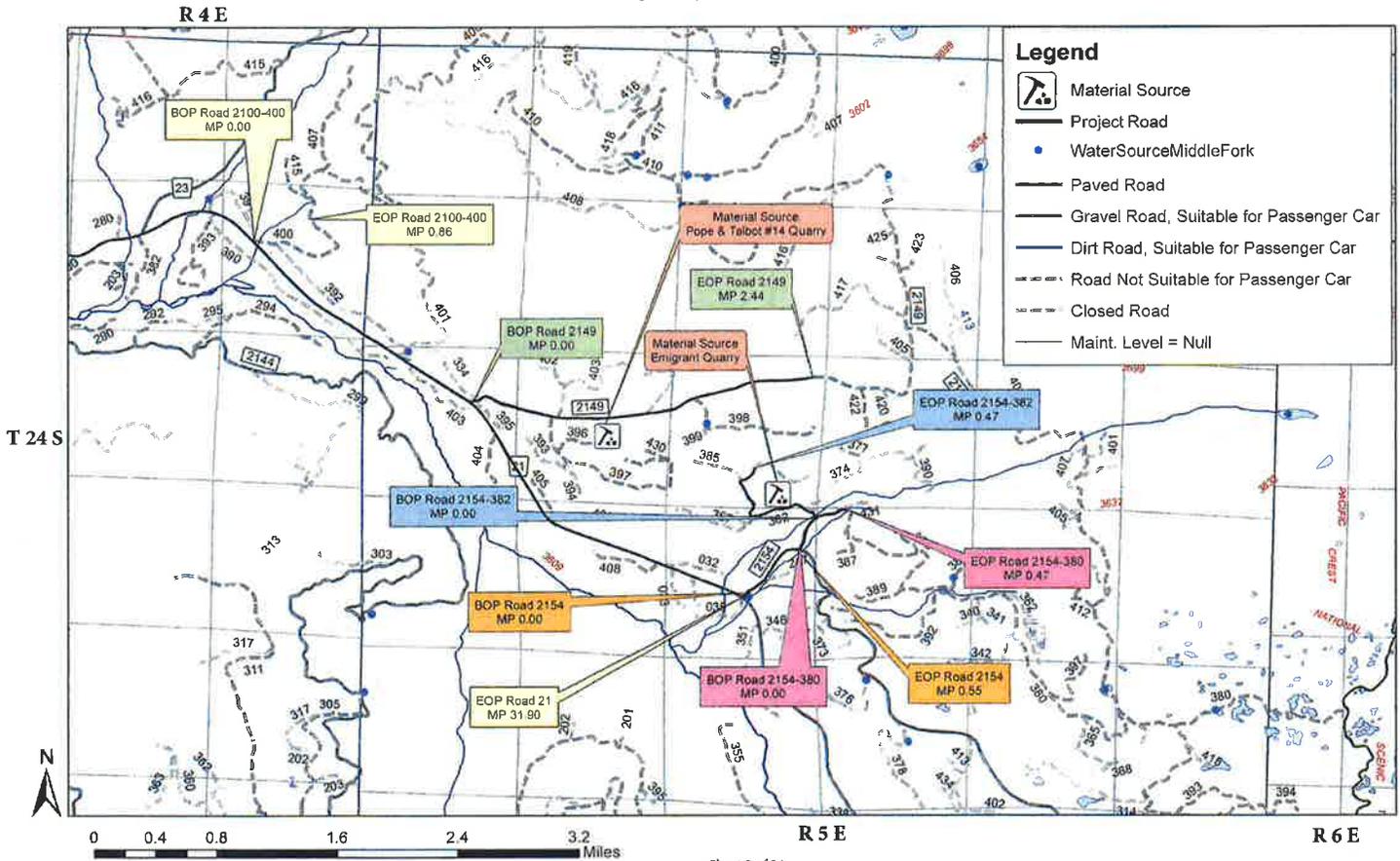
<u>INDEX TO SHEETS</u>	
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2 - 3	Vicinity Map
4 - 9	Estimate of Quantities
10	General Notes
11 - 12	Drainage Listing
13	Drainage Typical
14	Reconstruction / Misc. Typical
15	Brushing Typical
16	Dewatering Typical
17	Reconstruction Summary Road 21
18 - 19	Reconstruction Summary Road 2100 400
20 - 21	Reconstruction Summary Road 2149
22	Reconstruction Summary Road 2154
23	Reconstruction Summary Road 2154 380
24	Reconstruction Summary Road 2154 382

Designed by: Steffan Bolin	<i>Steffan Bolin</i> 5/2/16
	Date
Reviewed by: Starr Sullivan	<i>Starr Sullivan</i> 5/3/2016
	Date
Reviewed by: Jeff Caswell	<i>Jeff Caswell</i> 5/27/16
	Development Engineer Date
Recommended by: Kenneth Kittrell	<i>Kenneth Kittrell</i> 5/23/2016
	Zone Engineer Date
Approved by:	<i>Travis Sch</i> 5/19/2016
	District Ranger Date
	<i>Travis Sch</i> June 3, 2016
	Forest Engineer Date

### Vicinity Map Gulch Thin



### Vicinity Map Gulch Thin



<b>ESTIMATE OF QUANTITIES ROAD 21</b>				
31.90 Miles				
Item Number	Description	Unit	Quantities	Remarks
15101	Mobilization	Lump Sum	All	Includes equipment washing, fire protection measures, road work for access to Emigrant and Pope & Talbot #14 Quarries and all minor dewatering for all roads.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs f & logs f	Each	50	Included for all roads. As marked by CO.
20404	Unclassified borrow, compaction method B, finishing method n/a	Cubic Yard*	160	Included for all pipe replacements, fills and all other borrow needs for all specified roads. Borrow needed to finish fills that are short of material due to unsuitable material, oversteepened original fill slopes or any reason as identified by CO. Includes excavation, haul and placement. Government furnished.
62509	Mulching, dry method	Lump Sum	All	Government furnished, straw and seed. Included for all roads. A full coverage application of straw and seeding at 10lbs per acre is required. Do not mulch or seed ditches except for application of straw mulch and seeding of all portions of ditch that have exposed soil within 50' of 24" and larger diameter culverts.
63404A	Pavement markings type B, double solid yellow centerline	Mile	22.29	Includes pavement cleaning prior to striping.
63404B	Pavement markings type B, solid and dashed yellow centerline	Mile	5.70	Includes pavement cleaning prior to striping.
63404C	Pavement markings type B, dashed yellow centerline	Mile	3.91	Includes pavement cleaning prior to striping.
63501	Temporary Traffic Control	Lump Sum	All	Included for all roads. Two flaggers are required at all times on Road 21.

\* denotes contract quantities.

<b>ESTIMATE OF QUANTITIES ROAD 2100 400</b>				
0.86 Miles				
Item Number	Description	Unit	Quantities	Remarks
15755	Erosion control & pollution prevention	Each	5	Dewatering. Dewatering will be deleted if there is no water present when work is performed.
20358	Removal of corrugated metal pipe, disposal method (a)	Each	5	
20419	Drainage excavation, type outlet ditch	Foot	35	
23051	Roadside brushing, disposal method (1)	Mile	0.84	
30359	Roadway reconditioning, compaction E	Mile	0.84	
32203	Aggregate base, grading A, compaction method B	Cubic Yard*	117	Commercial source. Must be from a certified weed free source.
32222	Pit run, maximum size 8 inches, compaction method B	Cubic Yard*	16	Government furnished.
60276A	24-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	110	Bevel cut inlet. See sheet 13.
60276B	36-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	53	Bevel cut inlet. See sheet 13.

\* denotes contract quantities.

<b>ESTIMATE OF QUANTITIES ROAD 2149</b>				
				2.44 Miles
Item Number	Description	Unit	Quantities	Remarks
15755	Erosion control & pollution prevention	Each	2	Dewatering. Dewatering will be deleted if there is no water present when work is performed.
20207	Removal of individual trees, disposal of tops and limbs (f), logs (j), stumps (f)	Each	4	Limb and deck logs meeting utilization standards described in FSSS 201.04
20358	Removal of corrugated metal pipe, disposal method (a)	Each	3	
20419	Drainage excavation, type outlet ditch	Foot	535	
25101A	Placed riprap, class 3	Cubic Yard*	28	Government furnished.
25101B	Placed riprap, class 4	Cubic Yard*	3	Government furnished.
25104	Keyed riprap, class 3	Cubic Yard*	3	Government furnished.
30359	Roadway reconditioning, compaction E	Mile	2.44	
32203	Aggregate base, grading A, compaction method B	Cubic Yard*	156	Commercial source. Must be from a certified weed free source.
60276A	24-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	112	Bevel cut inlet. See sheet 13.
60276B	30-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	80	Bevel cut inlet. See sheet 13.

\* denotes contract quantities.

<b>ESTIMATE OF QUANTITIES ROAD 2154</b>				
				0.55 Miles
Item Number	Description	Unit	Quantities	Remarks
20207	Removal of individual trees, disposal of tops and limbs (f), logs (j), stumps (f)	Each	8	Limb and deck logs meeting utilization standards described in FSSS 201.04
20419	Drainage excavation, type outlet ditch	Foot	100	
30304	Road reconditioning, ditch	Mile	0.55	

\* denotes contract quantities.

<b>ESTIMATE OF QUANTITIES ROAD 2154 380</b>				
				0.47 Miles
Item Number	Description	Unit	Quantities	Remarks
20207	Removal of individual trees, disposal of tops and limbs (f), logs (j), stumps (f)	Each	2	Limb and deck logs meeting utilization standards described in FSSS 201.04
20358	Removal of corrugated metal pipe, disposal method (a)	Each	2	
20419	Drainage excavation, type outlet ditch	Foot	75	
30359	Roadway reconditioning, compaction E	Mile	0.47	
32203	Aggregate base, grading A, compaction method B	Cubic Yard*	125	Commercial source. Must be from a certified weed free source.
60276	18-inch corrugated aluminized steel pipe, 0.064-inch thickness, method B	Foot	78	Bevel cut inlet. See sheet 13.

\* denotes contract quantities.

<b>ESTIMATE OF QUANTITIES ROAD 2154 382</b>				
0.47 Miles				
Item Number	Description	Unit	Quantities	Remarks
15755	Erosion control & pollution prevention	Each	1	Dewatering. Dewatering will be deleted if there is no water present when work is performed.
20207	Removal of individual trees, disposal of tops and limbs (f), logs (j), stumps (f)	Each	2	Limb and deck logs meeting utilization standards described in FSSS 201.04
20358	Removal of corrugated metal pipe, disposal method (a)	Each	1	
20419	Drainage excavation, type outlet ditch	Foot	15	
23051	Roadside brushing, disposal method 1	Mile	0.47	
25104	Keyed riprap, class 4	Cubic Yard*	12	Government furnished.
30359	Roadway reconditioning, compaction E	Mile	0.47	
32203	Aggregate base, grading A, compaction method B	Cubic Yard*	97	Commercial source. Must be from a certified weed free source.
32222	Pit run, maximum size 8 inches, compaction method B	Cubic Yard*	17	Government furnished.
60276	36-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	50	Bevel cut inlet. See sheet 13.

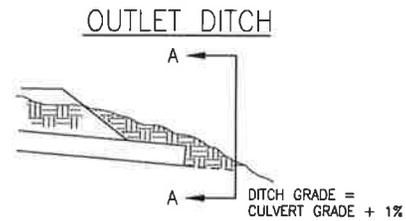
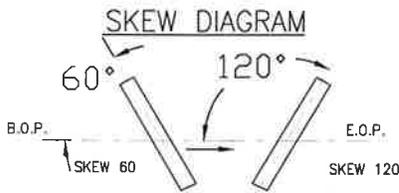
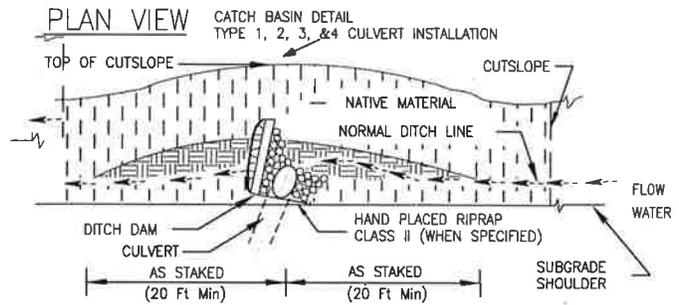
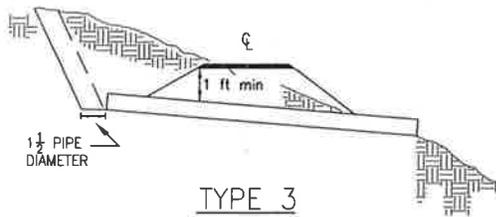
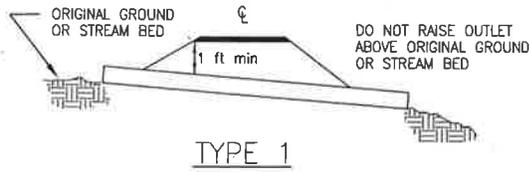
\* denotes contract quantities.

- 1 Remove all berms, previously existing or created, unless designated to remain, to allow drainage of water from the traveled way.
  - 2 Salvage existing aggregate during culvert removal and use as bedding / backfill material around pipe during installation.
  - 3 The Contracting Officer will designate disposal areas prior to placement of material. Smooth and shape material to drain, indirect to 30359 pay item.
  - 4 Do not undercut backslopes when cleaning and/or reconstructing ditchline.
  - 5 Spread government furnished straw over all areas where soil has been disturbed, excluding ditches. Cover area's completely. Straw is stored at the Flat Creek Work Center, located on FS road 24, 2 miles east of the town of Oakridge. Contact the CO to arrange for pick up.
  - 6 Recondition roadbed, including turnouts and curve widening, to dimensions existing on the ground.
  - 7 Timing / date restrictions are included in C6.24 and C6.315 of the timber sale provisions and in FSSS 156.05.
  - 8 Rebuild fills with a maximum slope steepness of 1V:1.5H fill slopes and minimum 1' shoulders.
  - 9 Unclassified borrow, pit run and class 3 & 4 riprap is available, as marked by CO, at Pope & Talbot #14 Quarry, Road 2149 396, T24S, R5E, Sec 17, NW of SE, and Emigrant Quarry on Road 2154 382, T24S, R5E, Sec 16, SE of SE. Sorting required.
  - 10 Replace culverts when dry or during instream work period. Minor dewatering is paid indirect to 151 pay item and is defined as dewatering performed on any stream with a flow equal to or less than 10 gallons per minute.
  - 11 Maintenance grading, ditch cleaning and roadside brushing shall be done before haul on Road 2149 396 (Pope & Talbot #14 Quarry). All work is paid indirect to 15101.
  - 12 No weekend or holiday work may be performed on Road 2154.
  - 13 Ground disturbing road work may only be performed June 1st – October 31st.
- Road 21 only**
- 1 The submitted Traffic Control Plan shall include methods for accomodating public traffic and safety within the project until the project is accepted. Use flaggers at both ends of the work zone to control traffic.
  - 2 Place warning signs to inform public of road construction work termini at each access point into project area.
  - 3 No striping work may commence until July 11, 2016. No weekend or holiday work may be performed. No work may be performed beginning the Thursday prior to Cascade General Bull Elk rifle season through the end of that season.

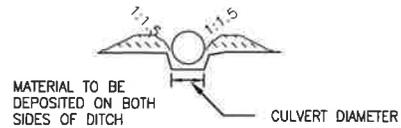
DRAINAGE LISTING															Remarks		
M.P.	CMP	Outlet Pipe	As Built	Dimensions		Installation Details			Misc.					Remarks			
				Size	Thick	Type	Grade	Skew	Outlet Ditch	Splash Apron	Headwall	Bevel					
	Feet	Feet	M.P.	Inch	FE	Inch	%	Deg	Feet	C.Y.	C.Y.	C.Y.	Cut	Inlet			
<b>Road 2100 400</b>																	
0.21	29			24	0.079		#	#					X	14 gauge. Requires dewatering.			
0.30	27			24	0.079		#	#					X	14 gauge. Requires dewatering.			
0.35	29			24	0.079		#	#					X	14 gauge. Requires dewatering.			
0.39	25			24	0.079		#	#	20				X	14 gauge. Requires dewatering.			
0.50	53			36	0.079		#	#	15				X	14 gauge. Requires dewatering.			
0.78																	
<b>Road 2149</b>																	
0.64									60								
0.77									95								
0.88									70								
0.96									40								
1.07									80								
1.23									45								
1.31									25								
1.41									20								
1.52	40			24	0.079		#	#	70		3		X	14 gauge. Class 3 riprap headwall armoring and class 3 riprap ditch and shoulder armoring.			
1.56	40			30	0.079		#	#		3			X	14 gauge. Class 4 riprap splash apron.			
1.70	40			30	0.079		#	#					X	14 gauge. Requires dewatering.			
1.76									15								
1.86	72			24	0.079		#	#						14 gauge. Requires dewatering.			
2.25									15								
<b>Road 2154</b>																	
0.09									100								
<b>Road 2154 380</b>																	
0.08	39			18	0.064		#	#	45				X	16 gauge.			
0.21	39			18	0.064		#	#	30				X	16 gauge.			
<b>Road 2154 382</b>																	
0.03	50			36	0.079		#	#			12		X	14 gauge. Requires dewatering.			
0.15									15					Reconstruct catch basin.			

DRAINAGE LISTING													Remarks		
M.P.	CMP	Outlet		As Built	Dimensions		Installation Details			Misc.					
		Pipe	Feet		Size	Thick	Type	Grade	Skew	Outlet	Splash	Headwall	Bevel		
					Inch	FE	Inch	%	Deg	Ditch	C.Y.	C.Y.	Cut	Inlet	
ALL INSTALLATIONS INCLUDE CONNECTING BANDS															
NOTE: Standard pipe corrugation will be 2 2/3 inch X 1/2 inch unless otherwise noted.															
# Skew, grade and type shall match removed installation unless otherwise noted.															
* As marked on ground by CO.															
<b>All pipes 30" diameter and larger, require gaskets, indirect to respective 602 pay item.</b>															
See sheet 13 for bevel cut inlet detail,															
Some installations of culverts may require additional excavation below grade line, indirect to 602 pay item.															
Where necessary, lower CMP installations to obtain a minimum of 1' of cover over culverts, not including surface rock.															
Construct outlet ditches in existing flow channel unless marked by CO otherwise.															

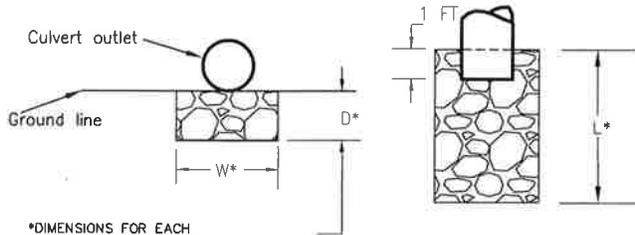
# DRAINAGE TYPICALS



## SECTION A-A



## SPLASH APRON

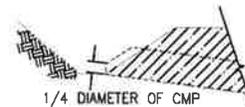


\*DIMENSIONS FOR EACH DISSIPATOR ARE IN THE RECONSTRUCTION SUMMARIES. RIPRAP WILL BE PLACED TO THE BOTTOM OF THE CHANNEL

APRON SURFACE SHALL BE LEFT WITH PROTRUDING RIPRAP FOR VELOCITY BREAK.

## BEVELED INLET DETAIL

Note: Bevel cut at 45 degrees



SHEET NUMBER

13

TOTAL SHEETS

24



GULCH THIN TIMBER SALE

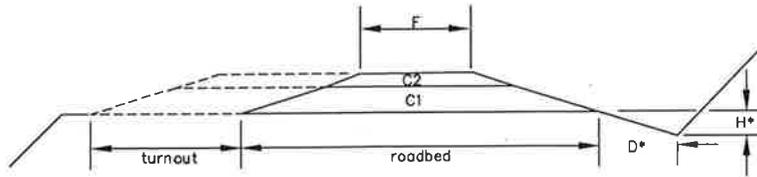
DRAINAGE TYPICAL

U.S.D.A. FOREST SERVICE

# RECONSTRUCTION TYPICALS

(not to scale)

## TYPICAL SECTION



© Widths are minimums. Reconstruct roadbed including turnouts and curve widening to match the existing road widths.

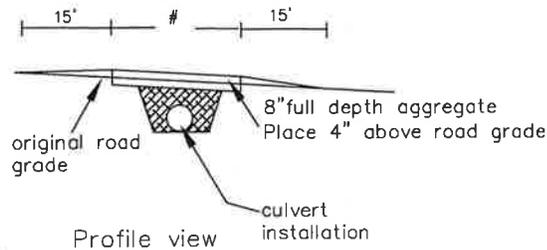
\* Dimensions marked with an asterisk may be adjusted during construction by the CO to fit site geometry.

\*\*AGGREGATE IS TO BE PLACED AS DIRECTED IN THE RECONSTRUCTION SUMMARY.

ROAD NUMBER	MILE POST TO MILE POST	CONSTRUCTION TOLERANCE	GRADING				PAVEMENT STRUCTURE					
			OUTSLOPE (O) INSLOPE (I) CROWN (C)	ROADBED WIDTH	DITCH DIMENSIONS		TRAVELED WAY WIDTH	GRADATION		COMPACTED DEPTH**		ROCK SLOPE
			#	ft	D	H	F	C1	C2	C1	C2	V:H
21	0.00 31.90	C	2C	28.7@	3*	1*	26@	-	A	-	**	1:2
2100400	0.00 0.86	C	2C	14.7@	3*	1*	12@	-	A	-	**	1:2
2149	0.00 2.44	C	2C	14.7@	3*	1*	12@	-	A	-	**	1:2
2154	0.00 0.55	C	2C	15.7@	3*	1*	13@	-	A	-	**	1:2
2154380	0.00 0.47	C	2C	14.7@	3*	1*	12@	-	A	-	**	1:2
2154382	0.00 0.47	C	2C	14.7@	3*	1*	12@	-	A	-	**	1:2

### CULVERT SURFACE ROCK TYPICAL

#Top length and width dimension designated in the Reconstruction Summary.



SHEET NUMBER

14

TOTAL SHEETS

24



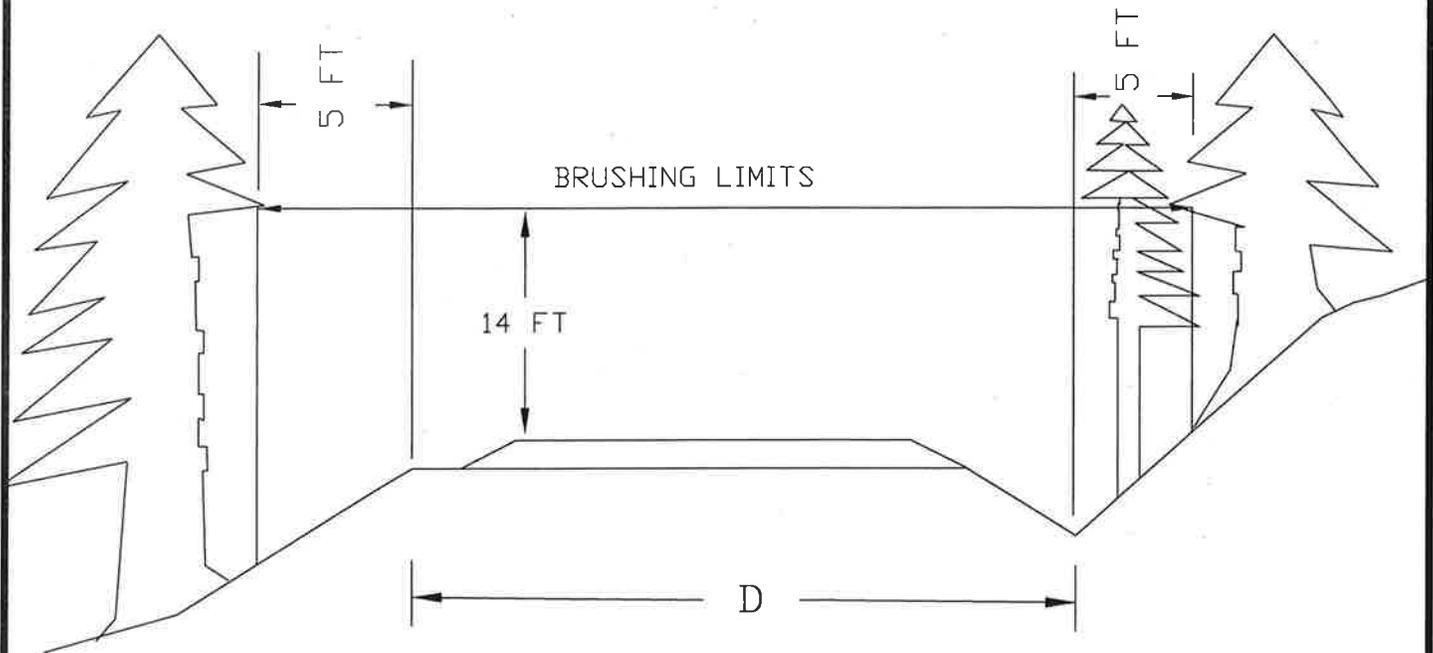
## GULCH THIN TIMBER SALE

## RECONSTRUCTION / MISC. TYPICAL

U.S.D.A. FOREST SERVICE

# ROADSIDE BRUSHING DETAILS

## TYPICAL SECTION



Leave trees over 8 inches in diameter, measured at 4 foot height, that are within the brushing limits but beyond the bottom of ditch and beyond hinge point on the fill slope side, and limb to 14 feet above the traveled way surface.

Grub and haul to designated disposal areas stumps within "D" above or as noted on the work descriptions.

Cut all vegetation to a maximum height of 6 inches above the ground surface.

Roads mechanically brushed may require manual scattering of cut material beyond the clearing limits.

SHEET NUMBER

15

TOTAL SHEETS

24



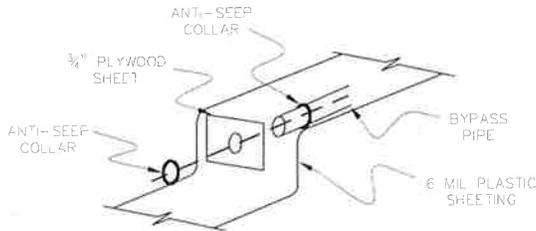
### GULCH THIN TIMBER SALE

### BRUSHING TYPICAL

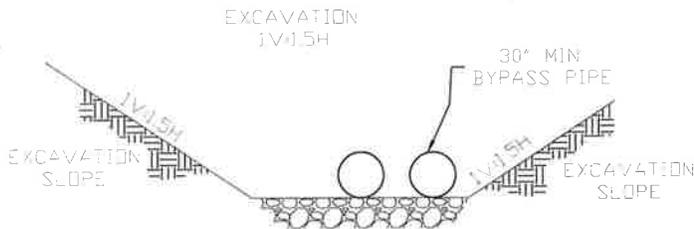
U.S.D.A. FOREST SERVICE

NOTES

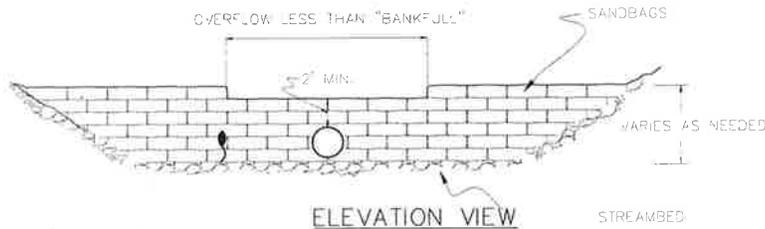
1. THE DEWATERING & SEDIMENT CONTROL PLAN SHOWS THE MINIMUM ACCEPTABLE CRITERIA. MAINTAINING CLEAN WATER DOWNSTREAM OF THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR THROUGH-OUT THE DURATION OF THE PROJECT, 24 HRS/DAY
2. MAINTAIN PUMPING CAPACITY EQUAL TO FLOW IN STREAM UNTIL STREAM IS FLOWING ON APPROVED FINISHED STREAMBED.
3. REMOVE ALL EROSION CONTROL AND DEWATERING MATERIALS FROM GOVERNMENT LAND AFTER USE. STRAW BALES MAY BE USED AS MULCH ON DISTURBED AREAS.



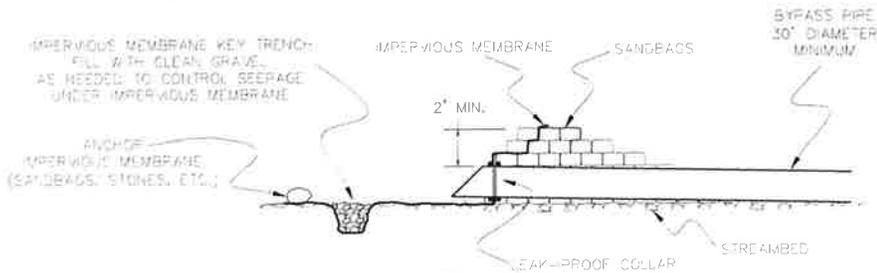
ANTI-SEEP COLLAR DETAIL



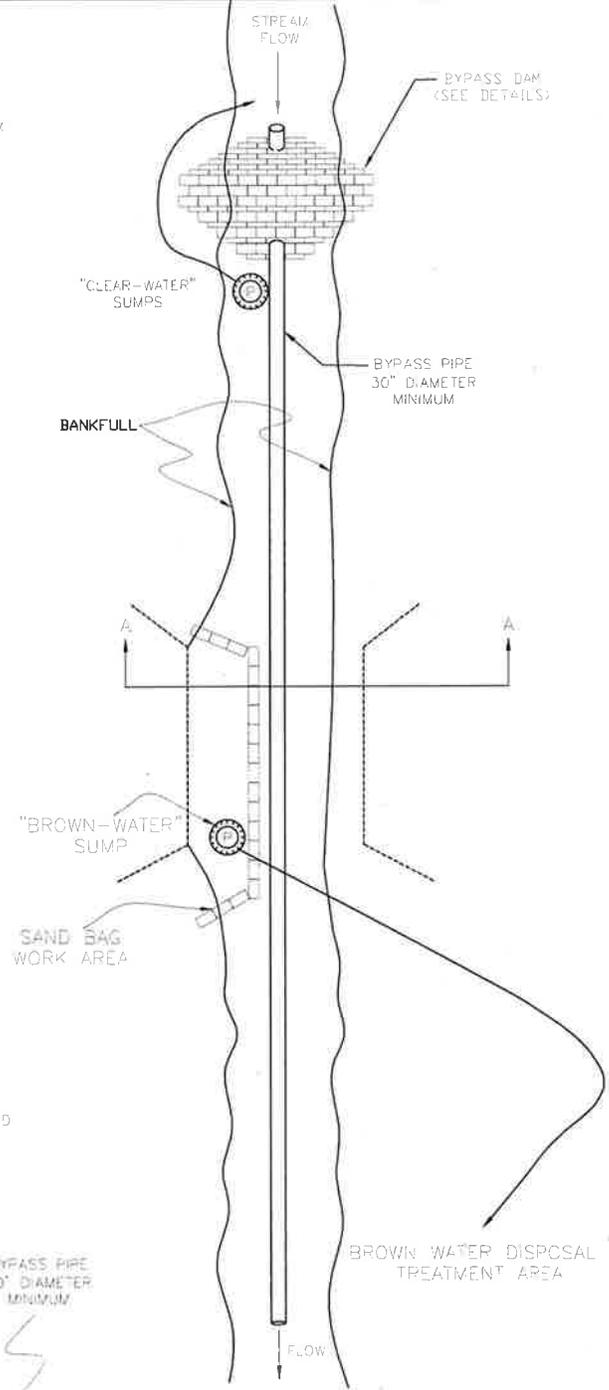
TYPICAL SECTION A-A



ELEVATION VIEW



PROFILE VIEW



BYPASS TYPICAL PLAN VIEW

(NOT TO SCALE)

SHEET NUMBER

16

TOTAL SHEETS

24



GULCH THIN TIMBER SALE

DEWATERING TYPICAL

U.S.D.A. FOREST SERVICE

RECONSTRUCTION SUMMARY ROAD 21				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.00				Junction with Kitson Springs Road (Lane County Road 6178). Beginning of project.
	63404A	22.29	Mile	Stripe double solid yellow centerline. Match existing striping pattern and location.
	63404B	5.70	Mile	Stripe solid and dashed yellow centerline. Match existing striping pattern and location.
	63404C	3.91	Mile	Stripe dashed yellow centerline. Match existing striping pattern and location.
31.90				Junction with Roads 2153 and 2154. End of project.

RECONSTRUCTION SUMMARY ROAD 2100 400				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.00				Junction with Road 21. Beginning of project. <b>Do not disturb the ground or vegetation outside of the left side road shoulder before MP 0.02 as marked by CO.</b>
0.02	23051	0.84	Mile	Begin roadside brushing.
	30359	0.84	Mile	Begin reconditioning of roadway. Grubbing & disposal of all vegetation & root masses within roadbed and in the ditch is required unless otherwise noted in the work description. Haul material from ditch reconditioning, slough and slide removal to designated disposal areas. Scatter all logs and woody debris from top of cutbank to the opposite road shoulder outside clearing limits. Scarify minimum 1" below the depth of all surface irregularities.
0.15				Junction right, Road 2100 392.
0.21	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276A	29	Foot	Install 24" CMP.
	32203	11	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.30	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276A	27	Foot	Install 24" CMP.
	32203	11	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.35	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276A	29	Foot	Install 24" CMP.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.39	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276A	25	Foot	Install 24" CMP.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
	20419	20	Foot	Construct outlet ditch.

RECONSTRUCTION SUMMARY ROAD 2100 400				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.50	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276B	53	Foot	Install 36" CMP.
	32222	16	Cubic Yard*	Place 12" depth of pit run with a 15' width for 25 feet centered over culvert installation. Blend to adjacent surfaces to provide for placement of crushed aggregate over top.
	32203	15	Cubic Yard*	Place 8" crushed aggregate full depth for 25 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.78	20419	15	Foot	Construct outlet ditch.
0.86				Junction left, unmarked spur.
	32203	60	Cubic Yard*	End roadside brushing. End roadway reconditioning. Place spot rock as marked by CO. End of project.

RECONSTRUCTION SUMMARY ROAD 2149

Mile Point	Pay Item	Quantity	Unit	Work Description
0.00	30359	2.44	Mile	Junction with Road 21. Beginning of project. Begin reconditioning of roadway. Grubbing & disposal of all vegetation & root masses within roadbed and in the ditch is required unless otherwise noted in the work description. Limb and deck trees meeting utilization standards as described in FSSS 201.04. Haul material from ditch reconditioning, slough and slide removal to designated disposal areas. Scatter all logs and woody debris from top of cutbank to the opposite road shoulder outside clearing limits. Scarify minimum 1" below the depth of all surface irregularities.
0.03				Designated disposal area, left.
0.06				Remove culvert located in right side ditch line from government land. Paid indirect to 30359.
0.59				Junction right, Road 2149 397.
0.64	20419	60	Foot	Junction left, Road 2149 402. Construct outlet ditch.
0.77	20419	95	Foot	Construct outlet ditch.
0.88	20419	70	Foot	Construct outlet ditch.
0.96	20419	40	Foot	Construct outlet ditch.
1.07	20419	80	Foot	Construct outlet ditch.
1.22				Junction left, Road 2149 404.
1.23	20419	45	Foot	Construct outlet ditch.
1.31	20419	25	Foot	Construct outlet ditch.
1.39				Designated disposal area, right.
1.41	20419	20	Foot	Construct outlet ditch.
1.52	20207	3	Each	Remove 1 tree from culvert fill as marked by CO. Remove 2 trees from outlet ditch as marked by CO.
	20358	1	Each	Remove existing CMP.
	60276A	40	Foot	Install 24" CMP.
	32203	13	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
	25104	3	Cubic Yard*	Place and key class 3 riprap 9'L x 4'W x 2'D to construct headwall leading into pipe inlet and armor road shoulder. Place as marked by CO.

RECONSTRUCTION SUMMARY ROAD 2149				
Mile Point	Pay Item	Quantity	Unit	Work Description
1.52	20419	70	Foot	Construct outlet ditch.
	25101A	28	Cubic Yard*	Place 100'L x 5'W x 1.5'D of class 3 riprap in ditchline and up against road shoulder as armoring. Place as marked by CO.
1.56	20358	1	Each	Remove existing CMP.
	60276B	40	Foot	Install 30" CMP.
	32203	13	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
	25101B	3	Cubic Yard*	Construct splash apron, 8'L x 5'W x 2'D.
1.57				Junction right, Road 2149 398.
1.70	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276B	40	Foot	Install 30" CMP.
	32203	13	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
1.76	20419	15	Foot	Construct outlet ditch.
1.86	15755	1	Each	Dewater site.
	20207	1	Each	Remove 1 tree from ditch line as marked by CO.
	60276A	72	Foot	Install 24" CMP as marked by CO. Construct culvert catch basin. Catch basin construction is paid indirect to 60276A.
	32203	17	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 13' top width. Blend to adjacent road surfaces to provide a smooth transition.
2.25	20419	15	Foot	Construct outlet ditch.
2.44				End roadway reconditioning.
	32203	100	Cubic Yard*	Place spot rock as marked by CO.
				End of project.

RECONSTRUCTION SUMMARY ROAD 2154				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.00	30304	0.55	Mile	Junction with Road 21. Beginning of project. Begin reconditioning of ditch. Grubbing & disposal of all vegetation & root masses within roadbed and in the ditch is required unless otherwise noted in the work description. Limb and deck trees meeting utilization standards as described in FSSS 201.04. Haul material from ditch reconditioning, slough and slide removal to designated disposal areas. Scatter all logs and woody debris from top of cutbank to the opposite road shoulder outside clearing limits.
0.09	20207	8	Each	Remove 8 trees to gain access to outlet ditch as marked by CO.
	20419	100	Foot	Construct outlet ditch.
0.55				Junction left, Road 2154 380. End ditch reconditioning. End of project.

RECONSTRUCTION SUMMARY ROAD 2154 380				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.00	30359	0.47	Mile	Junction with Road 2154. Beginning of project. Begin reconditioning of roadway. Grubbing & disposal of all vegetation & root masses within roadbed and in the ditch is required unless otherwise noted in the work description. Limb and deck trees meeting utilization standards as described in FSSS 201.04. Haul material from ditch reconditioning, slough and slide removal to designated disposal areas. Scatter all logs and woody debris from top of cutbank to the opposite road shoulder outside clearing limits.
0.08	20358	1	Each	Remove existing CMP.
	60276	39	Foot	Install 18" CMP.
	32203	12	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
	20207	2	Each	Remove 2 trees to gain access to outlet ditch as marked by CO.
	20419	45	Foot	Construct outlet ditch.
0.21	20358	1	Each	Remove existing CMP.
	60276	39	Foot	Install 18" CMP.
	32203	13	Cubic Yard*	Place 8" crushed aggregate full depth for 15 feet centered over installed culvert with 15 foot tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
	20419	30	Foot	Construct outlet ditch.
0.24				Junction left, Road 2154 382.
0.32				Designated disposal area, right.
0.47				Junction left, Road 2154 431.
	32203	100	Cubic Yard*	End roadway reconditioning. Place spot rock as marked by CO.
				End of project.

RECONSTRUCTION SUMMARY ROAD 2154 382				
Mile Point	Pay Item	Quantity	Unit	Work Description
0.00	23051	0.47	Mile	Junction with Road 2154 380. Beginning of project.
	30359	0.47	Mile	Begin roadside brushing. Begin reconditioning of roadway. Grubbing & disposal of all vegetation & root masses within roadbed and in the ditch is required unless otherwise noted in the work description. Haul material from ditch reconditioning, slough and slide removal to designated disposal areas. Scatter all logs and woody debris from top of cutbank to the opposite road shoulder outside clearing limits. Scarify minimum 1" below the depth of all surface irregularities.
0.03	15755	1	Each	Dewater site.
	20358	1	Each	Remove existing CMP.
	60276	50	Foot	Install 36" CMP.
	32222	17	Cubic Yard*	Place 12" depth of pit run with a 20' width for 20 feet centered over culvert installation. Blend to adjacent surfaces to provide for placement of crushed aggregate over top.
	32203	17	Cubic Yard*	Place 8" crushed aggregate full depth for 20 feet centered over installed culvert with 15 foot tapers on each end and a 18' top width. Blend to adjacent road surfaces to provide a smooth transition.
	25104	12	Cubic Yard*	Place and key class 4 riprap 20'L x 6'W x 2.5'D to construct headwall leading into pipe inlet and armor road shoulder. Place as marked by CO.
0.15	20207	2	Each	Remove 2 trees at culvert inlet as marked by CO.
	20419	15	Foot	Construct outlet ditch. Remove log laying across outlet ditch. Reconstruct culvert catch basin. Paid indirect to 30359.
0.18				Junction right, Emigrant Quarry access road.
0.19				Junction left, designated disposal area access road.
0.47				Junction left, Road 2154 367.
	32203	80	Cubic Yard*	End roadway reconditioning. Place spot rock as marked by CO. End of project.