

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE --- REGION SIX

WILLAMETTE NATIONAL FOREST

MIDDLE FORK RANGER DISTRICT

Lane County, Oregon

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ROAD PLANS FOR PROPOSED

Haha Thin Timber Sale

ROADS

FOREST SERVICE (FS)

<u>ROAD NO.</u>	<u>LENGTH/MILES</u>	<u>RECONSTRUCTION</u>
FS 1800000	9.72	Reconstruction
FS 1830000	4.32	Reconstruction
FS 1830407	0.69	Reconstruction
FS 1831000	4.84	Reconstruction
FS 1831382	1.20	Reconstruction
FS 1831383	3.64	Reconstruction

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Designed by: Phillip Burel & Michael Thomas

Phillip O. Burel Date 4/14/14
Designer

Michael Thomas Date 4/15/14
Designer

Reviewed by: Mike Larman

Mike Larman Date 4/15/14
Reviewer

Reviewed by: Jeff Caswell

Jeff Caswell Date 4/15/2014
SREO Development Engineer

Recommended by: Scott Ferre

Scott Ferre Date 4/15/14
Zone Engineer

Approved by: Duane Bishop & Charlie Mckenna

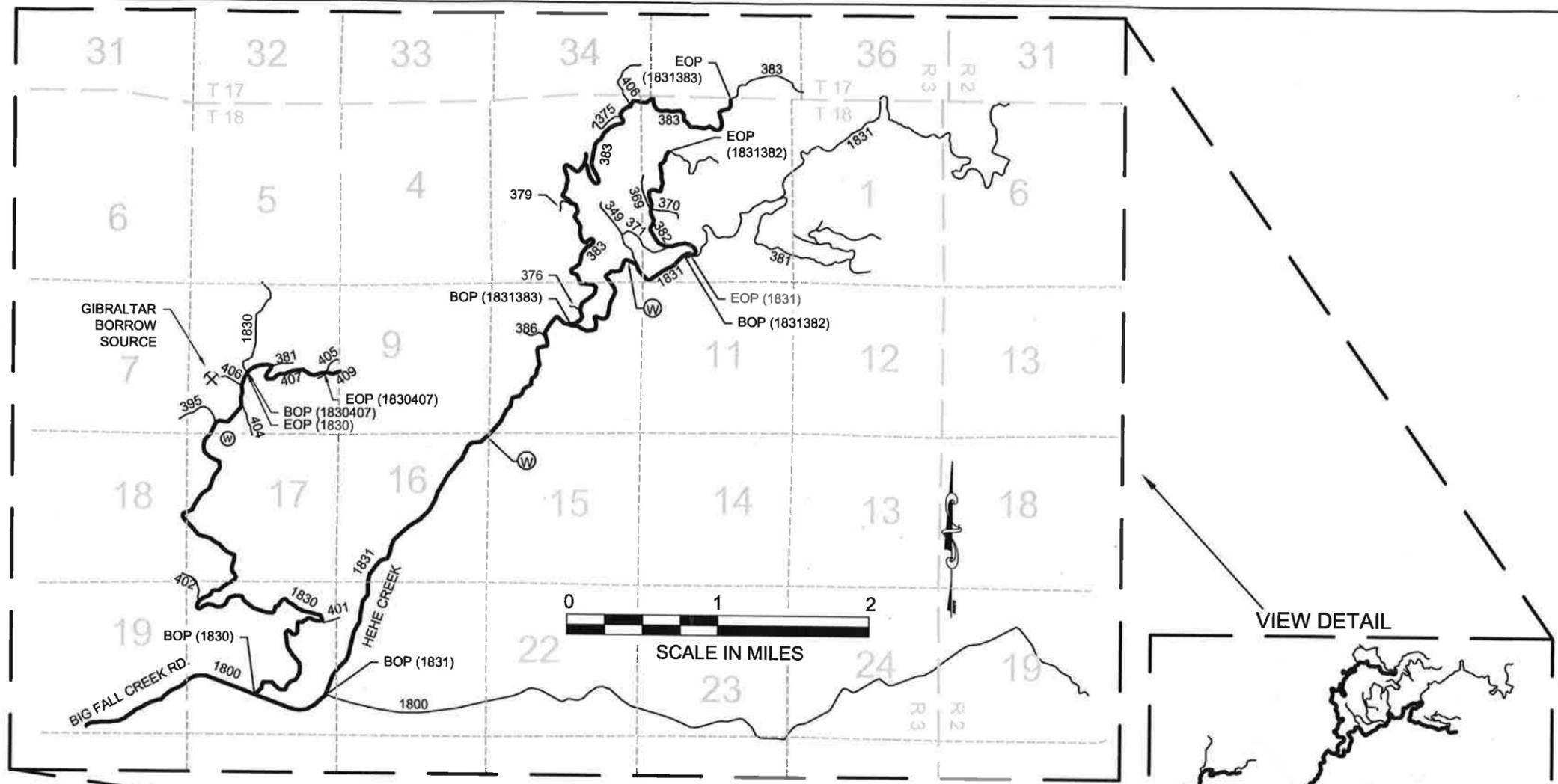
for *Duane Bishop* Date 4/16/14
District Ranger

for *Charlie Mckenna* Date 4/15/2014
Forest Engineer



LEGEND

- RECONSTRUCTION SEGMENTS
- ROADS UNUSED
- QUARRY
- WATER SOURCE



VIEW DETAIL

CITY OF SPRINGFIELD

CITY OF JASPER

JASPER LOWELL RD.

PLACE RD.

WINBERRY CREEK RD.

BIG FALL CREEK RD.

FS CULVERT STORAGE YARD AT M.P. 2.55

PUMA CAMPGROUND

FALL CREEK

BOP FS ROAD 18

CITY OF LOWELL

JASPER LOWELL RD.

FALL CREEK LAKE

PIONEER STREET

DEXTER RES.

TO OAKRIDGE



DISTANCES FROM INTERSECTION HWY 58 AND PIONEER STREET
 TO I-5 = 13 MILES
 TO OAKRIDGE = 18.5
 TO BOP ON ROAD 1800 = 11.87



GENERAL NOTES

- 1) Designated disposal areas will be flagged by the CO prior to material placement. See disposal site typical.
- 2) Replace culverts when stream channels are dry or during instream work period. Dewatering will be deleted if there is no water in the stream when the work is done. The instream work period begins July 1st and ends August 31st unless waived by the CO.
- 3) Salvage existing aggregate during culvert replacement; use as bedding and backfill material.
- 4) Spread Government furnished straw over all areas where soil has been disturbed, excluding ditches. Cover areas completely so soil is not visible. Straw is stored at the Flat Creek Work Center located on FS Road 24, 2 miles east of the Oakridge city limits. Contact the CO to arrange for straw pick up.
- 5) Do not undercut backslopes when cleaning and/or reconstructing ditch lines.
- 6) Rebuild fills with a maximum slope steepness of 1V:1.5H fill slopes and minimum 1' shoulders.
- 7) Reconditioning of roadbed includes turnouts and curve widening to the dimensions existing on the ground.
- 8) Remove all berms, existing or created, to allow drainage of water from the traveled way, unless otherwise designated to remain.
- 9) When all road reconditioning and scarification is complete for each road, the Purchaser shall request roadbed approval by the ER prior to placing aggregate. Spot rock locations will be staked by the CO. Note taper lengths are included in all spot rock lengths.
- 10) Linear grading will be staked by the CO on the ground.
- 11) Date and time restrictions are included in C6.24 and C6.315 of the timber sale provisions and specifications in FSSS 156.00.
- 12) Unsuitable material encountered during excavation shall be hauled to an approved disposal area. Suitable borrow material is available as needed on FS Road 1831 at M.P 1.25 and FS Road 1830406 "Gibraltar Rock Pit" or at other approved locations staked by the CO.

FS Road 180000 only

- 1) The submitted Traffic Control Plan shall include methods for accommodating public traffic and safety within the project until the project is accepted. Flaggers are required at both ends of the work zone to control traffic. At minimum, each culvert replacement site shall have a warning sign on both sides and cones on all four corners until the final placement of asphalt is completed.
- 2) Place warning signs to inform public of road construction work termini and rough road conditions at each access point into project area.
- 3) Initially place 12" of aggregate at culvert replacement and fill repair sites to accommodate traffic. Maintain leveling course at all times, match road surface elevations until asphalt is placed. Remove 4" of aggregate in preparation for asphalt placement for a final depth of 8" and recompact the subbase aggregate. Haul excess aggregate to area designated by the CO for stockpiling. Maintenance of aggregate leveling course is indirect to 32203. Removal of aggregate is indirect to 40451.

FS ROAD 1800000 ESTIMATE OF QUANTITIES

FS ROAD NUMBER		1800000		
PROJECT LENGTH (MILES)		9.72		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15755	Dewatering structure	Each	1	Dewatering for culvert installations.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f(1)), logs (f(1))	Each	1	Remove tree at pipe outlet.
20303	Removal of asphalt	Square Yard*	50	Disposal method (a).
20416	Waste, unsuitable material	Cubic Yard*	53	Haul to a disposal area approved by the CO.
20419	Drainage excavation, type lead in ditch	Foot	50	Improve ditch and excavate material on the right side of stream channel as staked by the CO.
25101	Placed riprap, class 4	Cubic Yard*	4	Commercial source.
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	48	Commercial source.
40451	ODOT 1/2 -inch dense graded HMAC, level 2, asphalt cement PG 64-22	Ton	12.00	Commercial source. Seal the edges of the completed patch with emulsified asphalt, and blot with fine sand.
41406	Saw cutting and joint sealing	Foot	103	Saw cut straight horizontal and vertical clean neat line.
60276	35 x 24 -inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	56	Unsuitable material encountered must be removed. Completely backfill pipe with aggregate. Backfill and compaction are indirect to pay item.

* Denotes contract quantity

FS ROAD 1830000 ESTIMATE OF QUANTITIES

FS ROAD NUMBER		1830000		
PROJECT LENGTH (MILES)		4.32		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15755	Dewatering structure	Each	1	Dewatering for culvert installations.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs	Each	2	Remove danger trees.
20358	Removal of culvert, disposal method (j)	Each	1	Remove and salvage existing culvert. Haul to FS Culvert Storage Yard.
20419	Drainage excavation, type outlet ditch	Foot	50	
23051	Roadside brushing, disposal method 1	Mile	2.22	
25101	Placed riprap, class 4	Cubic Yard*	7	Commercial source.
30359	Roadway reconditioning, compaction method E	Mile	2.22	
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	110	Commercial source.
60276	30-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	46	Unsuitable material encountered must be removed. Borrow material is indirect to this pay item. Backfill and compaction are indirect to pay item.
60403	Inlet, channel reconstruction	Each	1	Reconstruct inlet channel. Bentonite and borrow material are indirect to pay item.

* Denotes contract quantity

FS ROAD 1830407 ESTIMATE OF QUANTITIES

	FS ROAD NUMBER	1800407		
	PROJECT LENGTH (MILES)	0.69		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
23051	Roadside brushing, disposal method 1	Mile	0.69	
30359	Roadway reconditioning, compaction method E	Mile	0.69	

* Denotes contract quantity

FS ROAD 1831000 ESTIMATE OF QUANTITIES

FS ROAD NUMBER		1831000		
PROJECT LENGTH (MILES)		4.84		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15101	Mobilization	Lump Sum	All	Includes equipment washing, temporary traffic control and fire protection measures.
15755	Dewatering structure	Each	3	Dewatering for culvert installations.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f(1)), logs (f(1))	Each	4	Remove danger trees.
20301	Removal Log	Each	3	Clear logs from fill slope below culvert outlet.
20307	Cutting and disposal of roadway vegetation: tops and limbs (f(1)), logs (f(1)), and stumps (f(1))	Mile	4.84	Removal of logouts within the road bed and cut slope clearing limits.
20358A	Removal of culvert, disposal method (j)	Each	1	Remove and salvage existing culvert. Haul to FS Culvert Storage Yard.
20419	Drainage excavation, type outlet ditch	Foot	100	
20955	Pipe culvert excavation, compaction method N/A	Each	2	Trench excavation for culvert installation on new lay.
23051	Roadside brushing, disposal method 1	Mile	1.14	
25101	Placed riprap, class 4	Cubic Yard*	8	Commercial source.
30318	Road reconditioning, roadbed, compaction method E	Mile	4.84	Scarify to a 6 inch depth or a minimum 1" below the depth of all potholes washboards or surface irregularities.
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	1528	Commercial source.
60276	24-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	96	Unsuitable material encountered must be removed. Borrow material is indirect to this pay item. Backfill and compaction are indirect to pay item.
62509	Mulching, dry-straw method	Lump Sum	All	Spread Government furnished straw. This pay item accounts for all roads listed in this contract.

* Denotes contract quantity

FS ROAD 1831382 ESTIMATE OF QUANTITIES

	FS ROAD NUMBER	1831382		
	PROJECT LENGTH (MILES)	1.20		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15755	Dewatering structure	Each	5	Dewatering for culvert installations.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f(1)), logs (f(1))	Each	1	Remove danger trees.
20301	Removal Log	Each	1	Remove log from culvert inlet.
20358	Removal of culvert, disposal method (a)	Each	5	
20419	Drainage excavation, type outlet ditch	Foot	75	
23051	Roadside brushing, disposal method 1	Mile	1.20	
25101	Placed riprap, class 4	Cubic Yard*	24	Commercial source.
30359	Roadway reconditioning, compaction method E	Mile	1.20	
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	244	Commercial source.
60276	24-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	251	Unsuitable material encountered must be removed. Borrow material is indirect to this pay item. Backfill and compaction are indirect to pay item.
* Denotes contract quantity				

FS ROAD 1831383 ESTIMATE OF QUANTITIES

FS ROAD 1831383 ESTIMATE OF QUANTITIES				
	FS ROAD NUMBER	1831383		
	PROJECT LENGTH (MILES)	3.64		
PAY ITEM	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15755	Dewatering Structure	Each	1	Dewatering for culvert installation.
20253	Removal of individual trees, miscellaneous: disposal of tops & limbs (f(1)), logs f(1))	Each	1	Remove danger trees.
20307	Cutting and disposal of roadway vegetation: tops and limbs (f(1)), logs (f(1)), and stumps (f(1))	Mile	1.99	Removal of logouts within the road bed and cut slope clearing limits.
20358	Removal of culvert, disposal method (a)	Each	1	
21201	Linear Grading	Mile	0.02	As staked by the CO.
23051	Roadside brushing, disposal method 1	Mile	1.65	
25101	Placed riprap, class 4	Cubic Yard*	4	Commercial Source.
30359	Roadway reconditioning, compaction method E	Mile	1.65	
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	467	Commercial Source.
60276	24-inch corrugated aluminized steel pipe, 0.079-inch thickness, method B	Foot	40	Unsuitable material encountered must be removed. Borrow material is indirect to this pay item. Backfill and compaction are indirect to pay item.

* Denotes contract quantity

FS ROAD 1800000 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				End of County maintenance Beginning of project
1.52				Junction with FS Road 1817000 left.
2.55				FS Culvert Storage Yard left.
3.58				Clark Creek Organization Camp left.
5.40				Junction with FS Road 1824000 right.
7.04				Puma Campground left.
7.78	15755	1	Each	Install dewatering system.
	20253	1	Each	Remove tree at pipe outlet.
	41406	103	Foot	Saw cut asphalt and seal joints for culvert installation (8.15'W X 32' L) and asphalt patch (8'W X 23'L) as marked on the ground by the CO.
	20303	50	Square Yard*	Asphalt removal disposal method (a).
	20416	53	Cubic Yard*	Removal of unsuitable material. Includes excavation of material for culvert installation, 12" depth from under asphalt patch and a 5 cubic yard pile from road shoulder.
	20419	50	Foot	Construct lead in ditch 36" W as staked by the CO.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' L X 2' D).
	60276	56	Foot	Install on new lay, 35" X 24" culvert pipe as staled bu the CO.
	32203	48	Cubic Yard*	Backfill pipe with aggergate and place 12" of base course under asphalt patch.
	40451	12.00	Ton	Place 4" depth of hot mix.
9.21				Junction with FS Road 1830000 left.
9.72				Junction with FS Road 1831000 left. End of Project.

* Denotes contract quantity

FS ROAD 1830000 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Intersecting FS Road 1800000 at mile post 9.21. Beginning of project.
0.70	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	20419	50	Foot	Construct outlet ditch.
	60403	1	Each	Reconstruct inlet channel from culvert inlet to seep hole as staked by the CO. Mix 300 lb. of bentonite with borrow material to seal off inlet channel from seep hole to CMP inlet and around the new CMP install.
	25101	7	Cubic Yard*	Construct head wall (6' L1 x 9' L2 x 4' H x 2' D) 3 cubic yards and construct splash apron (6' W X 9' L X 2' D) 4 cubic yards.
	60276	46	Foot	Install 30-inch corrugated aluminized steel pipe. Lower culvert 2' to capture flow from hillside seep.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 14' top width. Blend to adjacent road surfaces to provide a smooth transition.
1.08				Junction with FS Road 1830401 right.
2.10				Junction with FS Road 1830402 left.
	30359	2.22	Mile	Begin roadway reconditioning. 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 disposal area. 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 potholes washboards or surface irregularities.
	23051	2.22	Mile	Begin roadside brushing.
2.75				Junction with FS Road 1830403 right.
3.49.				Junction with FS Road 1830410 right.
3.86				Junction with FS Road 1830395 left.
4.08				Junction with FS Road 1830404 right. Water source located at MP 0.02.
4.23				Junction with FS Road 1830406 left, designated borrow source Gibraltar rock
4.32	30359			End roadway reconditioning.
	23051			End roadside brushing.
				End of project.
	20253	2	Each	Fall 2 danger trees as marked by CO.
	32203	100	Cubic Yard*	Spot rock as marked by CO.

FS ROAD 1830407 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Intersecting FS Road 1830000 at mile post 4.32. Beginning of project.
	23051	0.69	Mile	Begin roadside brushing.
	30359	0.69	Mile	Begin roadway reconditioning. 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 disposal area. 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 potholes washboards or surface irregularities.
0.17				Junction with FS Road 1830381 left.
0.26				Disposal area right.
0.69				Junction with FS Road 1830405 left & FS Road 1830409 right. End roadside brushing. End roadway reconditioning. End of project.

FS ROAD 1831000 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Intersecting FS Road 1800000 at mile post 9.72. Beginning of project.
	20307	4.84	Mile	Begin cutting and disposal of roadway vegetation and logouts.
	30318	4.84	Mile	Begin road reconditioning, roadbed.
0.06	15755	1	Each	Install dewatering system.
	20358A	1	Each	Removal of culvert.
	20419	100	Foot	Construct outlet ditch 5' W.
	60276	34	Foot	Install 24-inch corrugated aluminized steel pipe.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 14' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.93	32203	97	Cubic Yard*	Spot rock, 524' x 14' x 4" as staked by the CO.
1.15	15755	1	Each	Install dewatering system.
	20301	3	Each	Remove logs/trees from outlet, and scatter as marked by the CO.
	20955	1	Each	Excavate trench for culvert installation on new lay.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	32	Foot	Install on new lay, 24-inch corrugated aluminized steel pipe as staked by the CO.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 14' top width. Blend to adjacent road surfaces to provide a smooth transition.

FS ROAD 1831000 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
1.20	15755	1	Each	Install dewatering system.
	20955	1	Each	Excavate trench for culvert installation on new lay.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	30	Foot	Install on new lay, 24-inch corrugated aluminized steel pipe as staked by the CO.
	32203	10	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 14' top width. Blend to adjacent road surfaces to provide a smooth transition.
1.25				Designated borrow source left as staked by the CO.
2.18				Water Source #3002.
2.47				Water Source #2602.
3.05				Junction with FS Road 1831386 left.
3.34				Junction with FS Road 1831383 left.
3.35	32203	23	Cubic Yard*	Spot rock, 116' x 14' x 4" as staked by the CO.
3.44	32203	16	Cubic Yard*	Spot rock, 78' x 14' x 4" as staked by the CO.
3.70	20253	1	Each	Fall danger tree left.
	23051	2	Mile	Begin roadside brushing.

FS ROAD 1831000 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
3.77	32203	8	Cubic Yard*	Spot rock, 41' x 12' x 4" as staked by the CO.
3.84	20253	1	Each	Fall danger tree left.
3.96	32203	8.00	Cubic Yard*	Spot rock, 41' x 12' x 4" as staked by the CO.
4.19				Water Source #2636.
4.39	32203	34	Cubic Yard*	Spot rock, 207' x 12' x 4" as staked by the CO.
4.55	32203	75	Cubic Yard*	Spot rock, 470' x 12' x 4" as staked by the CO.
4.66	32203	8	Cubic Yard*	Spot rock, 41' x 12' x 4" as staked by the CO.
4.69	32203	32	Cubic Yard*	Spot rock, 166' x 14' x 4" as staked by the CO.
4.70				Juction with FS Road 1831382 left.
4.84	30318			End road reconditioning, roadbed.
	23051			End roadside brushing.
	20253	2	Each	Fall 2 danger trees as marked by CO.
	32203	650	Cubic Yard*	Spot rock as marked by CO.
				End of project.

FS ROAD 1831382 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Intersecting FS Road 1831 at mile post 4.70. Beginning of project.
	23051	1.20	Mile	Begin roadside brushing.
	30359	1.20	Mile	Begin roadway reconditioning. 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 disposal area. 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 potholes washboards or surface irregularities.
	32203	99	Cubic Yard*	Spot rock, 623' x 12' x 4" as staked by the CO.
0.22	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	42	Foot	Install 24-inch corrugated aluminized steel pipe.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.35				Junction with FS Road 1831371 left.
0.60	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	20419	25	Foot	Construct outlet ditch.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	40	Foot	Install 24-inch corrugated aluminized steel pipe as staked by the CO.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.64	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	44	Foot	Install 24-inch corrugated aluminized steel pipe as staked by the CO.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.65				Junction with FS Roads 1831370 left, and 1831369 right.
0.78	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).

FS ROAD 1831382 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.79	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	77	Foot	Install 24-inch corrugated aluminized steel pipe.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
0.94	32203	14	Cubic Yard*	Spot rock, 67' x 14' x 4" as staked by the CO.
1.08	15755	1	Each	Install dewatering system.
	20358	1	Each	Removal of culvert.
	20419	50	Foot	Construct outlet ditch.
	25101	4	Cubic Yard*	Construct splash apron (6' W X 9' H X 2' D).
	60276	48	Foot	Install 24-inch corrugated aluminized steel pipe.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
1.11	32203	51	Cubic Yard*	Spot rock, 316' x 12' x 4" as staked by the CO.
1.14	20301	1	Each	Remove log jammed in culvert inlet and scatter away from drainage on outlet side.
1.20	23051			End roadside brushing.
	30359			End roadway reconditioning.
				End of project.
	20253	1.00	Each	Fall 1 danger trees as marked by CO.
	32203	40	Cubic Yard*	Spot rock as marked by CO.

Spot rock quantities include side slopes of 1V:2H, and 10 foot tapers on each end of the specified length.

* Denotes contract quantity

FS ROAD 1831383 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Intersecting FS Road 1831 at mile post 3.27. Beginning of project.
	20307	1.99	Mile	Begin cutting and disposal of roadway vegetation and logouts.
0.13				Junction with FS Road 1831376 left.
0.92				Junction with FS Road 1831384 left.
1.22				Junction with FS Road 1831379 left.
1.68				Junction with FS Road 1831377 left.
1.87				Junction with spur road right.
1.99	20307			End cutting and disposal of roadway vegetation and logouts.
	23051	1.65	Mile	Begin roadside brushing.
	30359	1.65	Mile	Begin roadway reconditioning. 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 disposal area. 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 potholes washboards or surface irregularities.
2.09	32203	14	Cubic Yard*	Spot rock, 48' x 12' x 6" as staked by the CO.
2.21	32203	27	Cubic Yard*	Spot rock, 102' x 12' x 6" as staked by the CO.
2.26	32203	52	Cubic Yard*	Spot rock, 206' x 12' x 6" as staked by the CO.
2.45	32203	173	Cubic Yard*	Spot rock, 708' x 12' x 6" as staked by the CO.
2.56				Junction with FS Road 1831406 left.
2.72	32203	46	Cubic Yard*	Spot rock, 181' x 12' x 6" as staked by the CO.
3.00	32203	13	Cubic Yard*	Spot rock, 44' x 12' x 6" as staked by the CO.

FS ROAD 1831383 RECONSTRUCTION SUMMARY

MILE POST	PAY ITEM	QUANTITY	UNIT	DESCRIPTION OF WORK
3.01	15755	1	Each	Install dewatering system.
	20358	1	Each	Remove of culvert.
	25101	4	Cubic Yard*	Construct splash apron (6'W X 9'H X 2'D).
	60276	40	Foot	Install 24-inch corrugated aluminized steel pipe.
	32203	8	Cubic Yard*	Place 8" crushed aggregate full depth for 15' centered over culvert with 10' tapers on each end and a 12' top width. Blend to adjacent road surfaces to provide a smooth transition.
3.27	32203	13	Cubic Yard*	Spot rock, 44' x12' x 6" as staked by the CO.
3.39	32203	52	Cubic Yard*	Spot rock, 206' x12' x 6" as staked by the CO.
3.58	21201	0.02	Mile	Linear grading: Realign road to the left into disposal site. Push material up against cut bank at a 2H:1V slope and grade road to provide 12' travelled way.
	32203	29	Cubic Yard*	Spot rock, 110' x12' x 6" as staked by the CO.
3.64	23051			End roadside brushing.
	30359			End roadway reconditioning.
				End of project.
	20253	1	Each	Fall 1 danger trees as marked by CO.
	32203	40	Cubic Yard*	Spot rock as marked by CO.

Spot rock quantities include side slopes of 1V:2H, and 10 foot tapers on each end of the specified length.

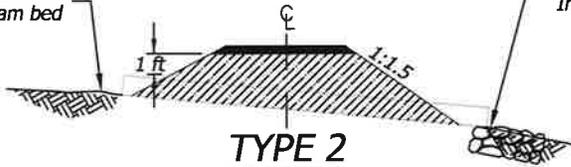
* Denotes contract quantity

HAHA THIN DRAINAGE LISTING														Remarks
M.P.	CMP	Outlet Pipe	As Built	Dimensions		Installation Details								
				Size	Thick	Type	Grade	Skew	Lead In	Outlet	Head	Splash		
									Ditch	Ditch	Wall	Apron		
	Feet	Feet	M.P.	Feet	Inch	FE Inch		%	Deg	Feet	Feet	C.Y.	C.Y.	
FS Road 1800000														
7.78	56			35 x 24	0.079	3	5	60	50			4		New install, squash pipe.
FS Road 1830000														
0.70	46			30	0.079	#	5	#		50	3	4		Construct headwall.
FS Road 1831000														
0.06	34			24	0.079	#	3	#		100				Install pipe 2 ft lower than existing.
1.15	32			24	0.079	3	5	90				4		New install.
1.20	30			24	0.079	3	5	90				4		New install.
FS Road 1831382														
0.22	42			24	0.079	#	#	#				4		
0.60	40			24	0.079	#	#	60		25		4		
0.64	44			24	0.079	#	#	120				4		
0.78												4		
0.79	77			24	0.079	#	#	#				4		
1.08	48			24	0.079	#	#	#		50		4		
1.14														Remove log from culvert inlet.
FS Road 1831383														
3.01	40			24	0.079	#	#	#				4		
THE ABOVE INSTALLATIONS INCLUDE CONNECTING BANDS														
NOTE: Standard pipe corrugation will be 2-2/3" X 1/2" unless otherwise noted.														
# Skew, grade and type shall match removed installation unless otherwise noted.														
Some installations of culverts may require additional excavation below grade line to achieve minimum 1 foot cover requirement.														
All culvert installs must meet a minimum grade of 5% unless otherwise stated.														
All pipes require gaskets. Gaskets, bands, and necessary hardware are indirect to respective 602 pay item.														
Riprap placement for splash aprons may require hand placement.														

CULVERT TYPES

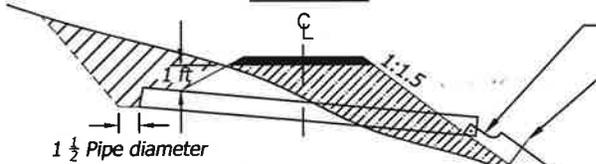
TYPE 1

Original ground or stream bed



Do not raise outlet above original ground or stream bed. Install splash apron when specified

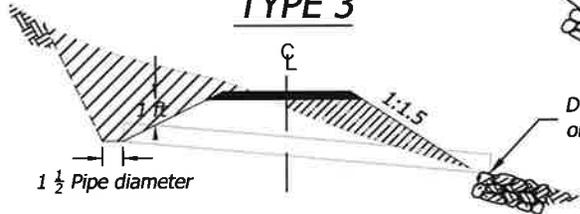
TYPE 2



Turner elbow
Anchors (when specified)

Note:
Elbows and anchors are indirectly included in the pay item for the outlet pipe.

TYPE 3



Install splash apron when specified

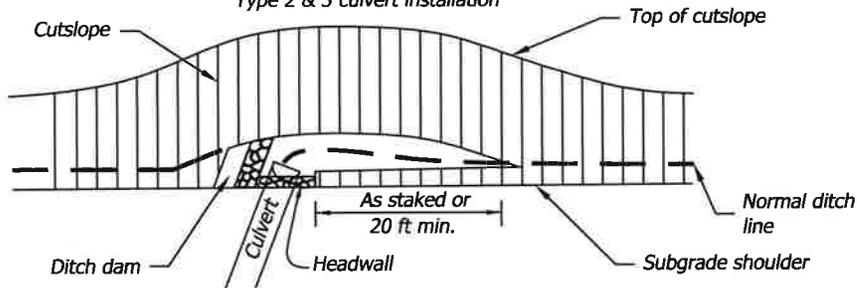
Drain outlet on natural ground or install splash apron when specified

Some installations of culverts may require additional excavation below grade line.

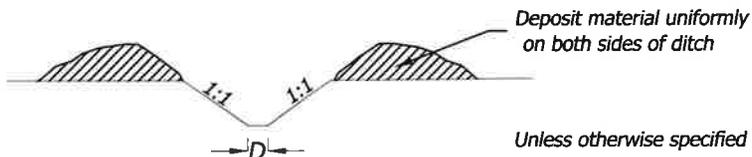
CATCH BASIN DETAIL

PLAN VIEW

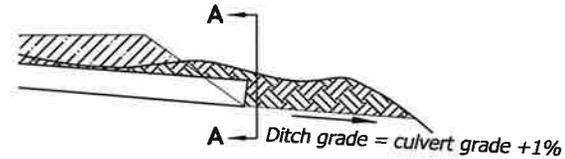
Type 2 & 3 culvert installation



LEAD OUT DITCH



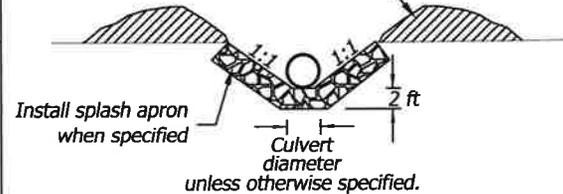
OUTLET DITCH



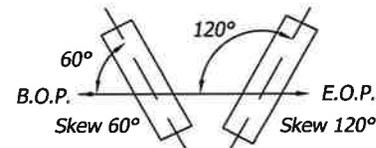
Note: Seed ditch and berm when specified

OUTLET DITCH SECTION A-A

Deposit material uniformly on both sides of ditch



SKEW DIAGRAM



Drawings not to scale

HAHA THIN TIMBER SALE

DRAINAGE CONSTRUCTION TYPICALS

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION

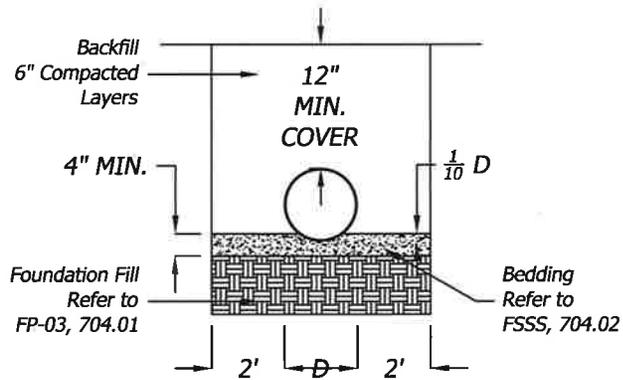


SHEET NUMBER TOTAL SHEETS

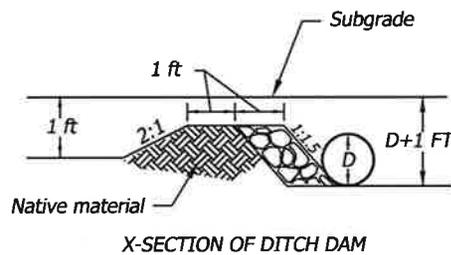
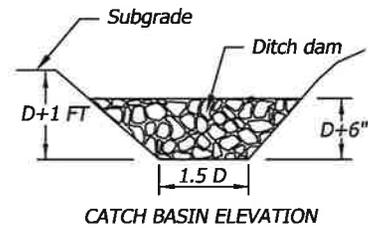
21

27

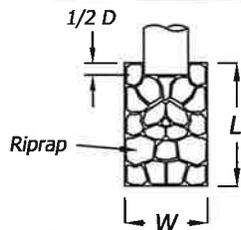
CULVERT BEDDING & BACKFILL TYP.



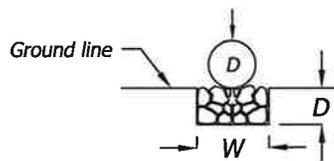
RIPRAP DITCH DAM



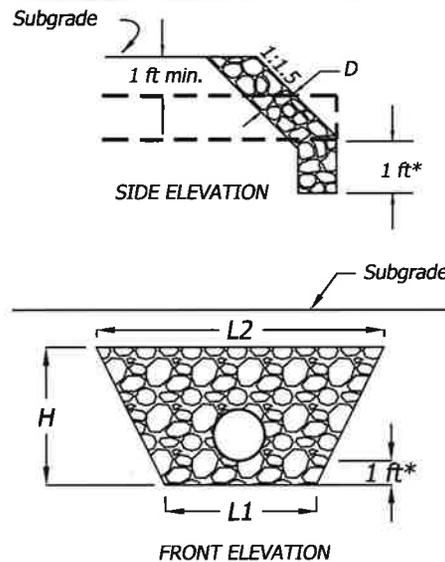
SPLASH APRON PLAN VIEW



SPLASH APRON ELEV. VIEW



RIPRAP HEADWALL



* For culverts over 24" in diameter otherwise 0 ft.

HAHA THIN TIMBER SALE

DRAINAGE CONSTRUCTION TYPICALS

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE

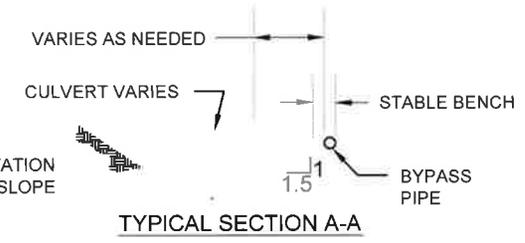
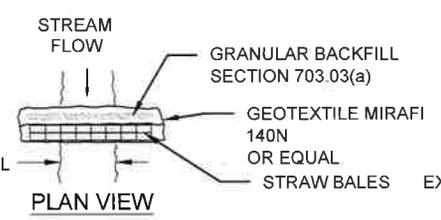
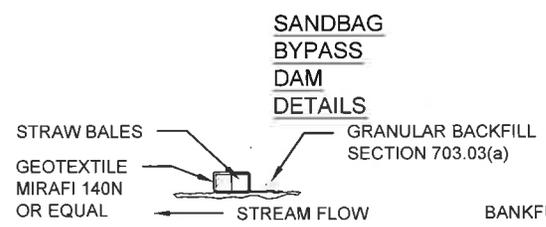
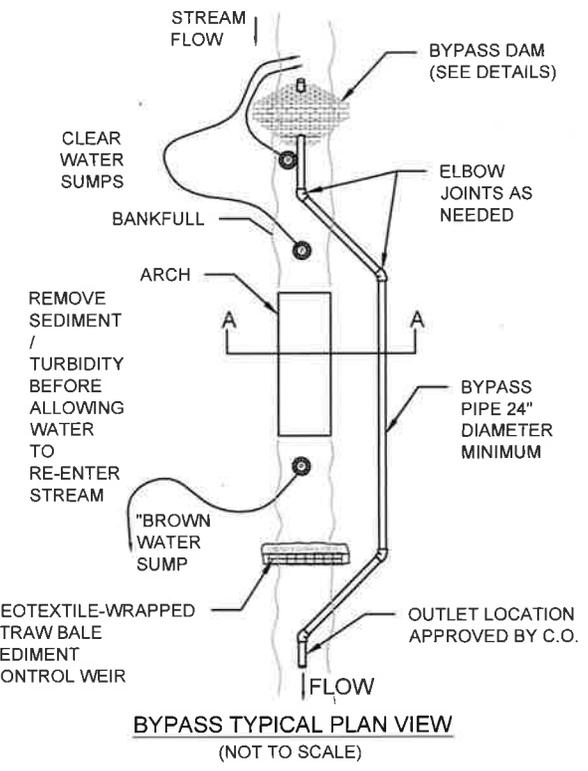
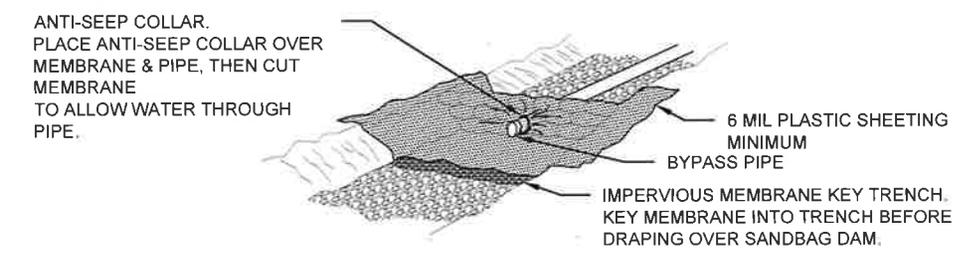
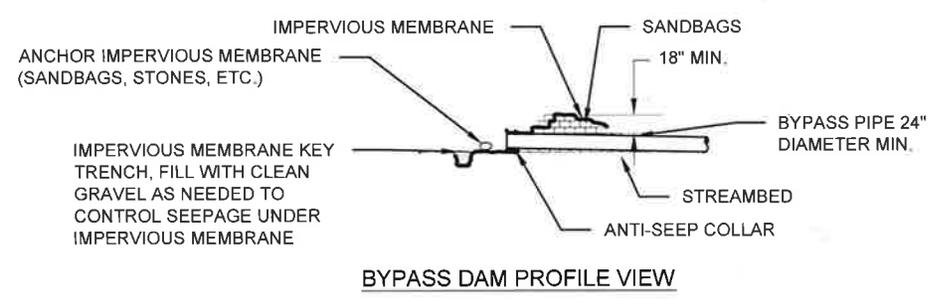
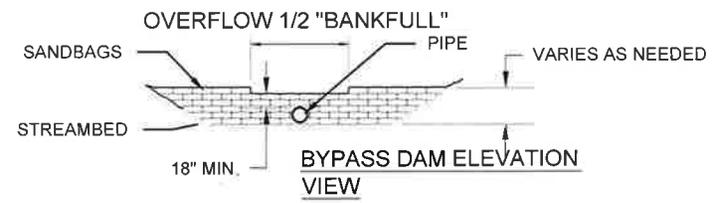


SHEET NUMBER	TOTAL SHEETS
22	27

HABA THIN TIMBER SALE
DEWATERING TYPICAL

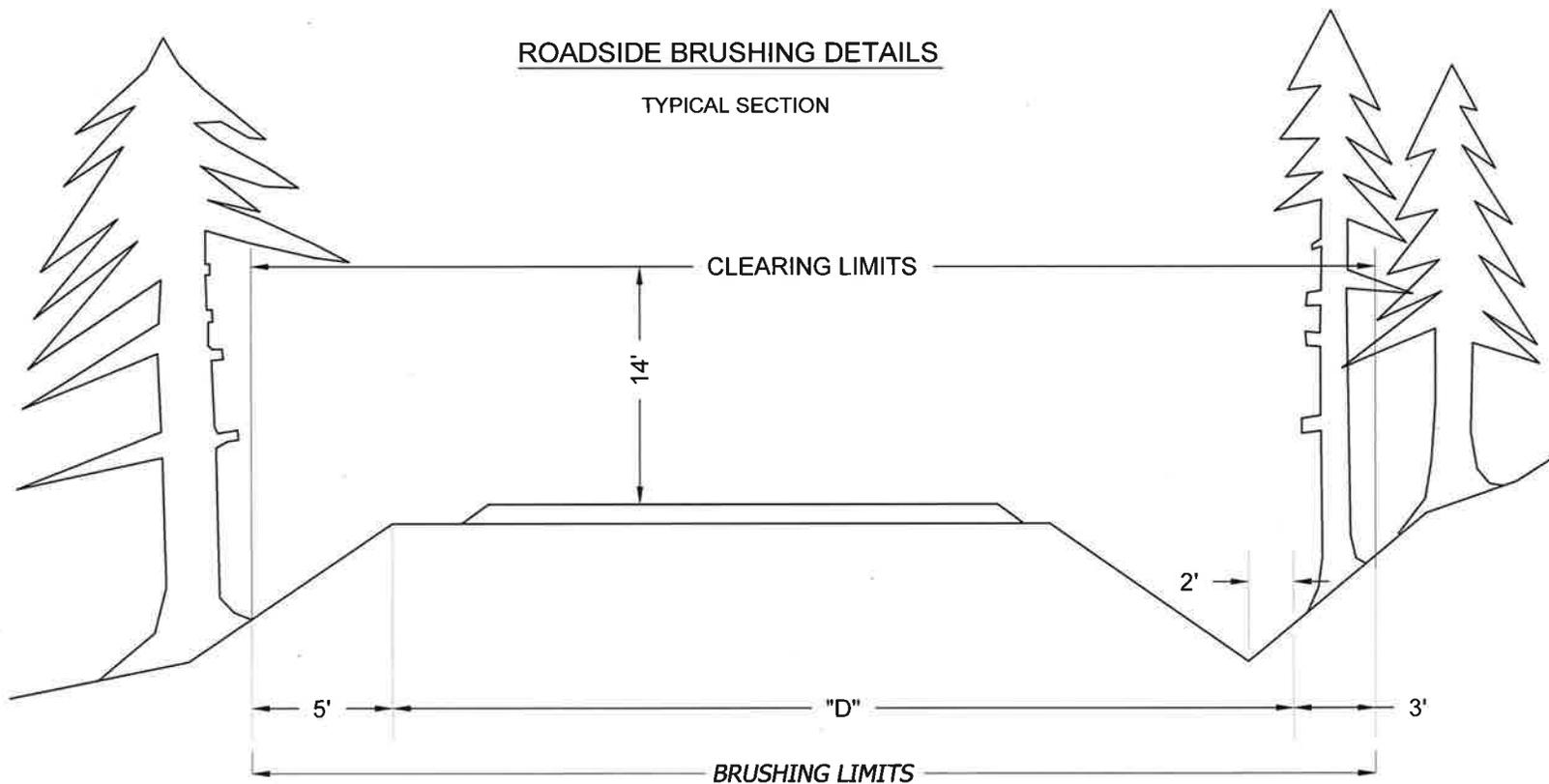


NOTES:
 1) THE DEWATERING & SEDIMENT CONTROL TYPICALS & DETAILS SHOWN BY THE GOVERNMENT DEPICT SEVERAL MINIMALLY ACCEPTABLE FEATURES TO BE PART OF A CONTRACTOR'S PLAN, REGARDLESS OF ANY PLAN APPROVED BY THE C.O., MAINTAINING WATER QUALITY DOWNSTREAM OF THE PROJECT REMAINS THE RESPONSIBILITY OF THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT.
 2) PUMP STREAM AROUND SITE DURING INSTALLATION OF PRIMARY DEWATERING SYSTEM. MAINTAIN PUMPING SYSTEM AS A CONTINGENCY, TO DISASSEMBLE THE PRIMARY SYSTEM, AND TO INTRODUCE STREAM FLOW ONTO THE NEWLY CONSTRUCTED STREAMBED.



SECTION VIEW
GEOTEXTILE-WRAPPED STRAW BALE SEDIMENT CONTROL WEIR

TYPICAL SECTION A-A



NOTES:

1. Leave trees over 8 inches in diameter measured at $4\frac{1}{2}'$ above the ground 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.
2. Grub stumps within "D" above and haul to designated waste areas or as noted on the work descriptions.
3. Cut all vegetation to a maximum height of 6 inches above the ground surface.
4. Roads mechanically brushed may require manual scattering of cut material beyond the clearing limits.

HABA THIN TIMBER SALE
ROADSIDE BRUSHING TYPICAL

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE

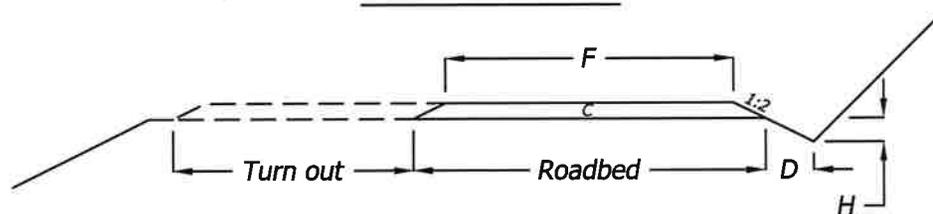


SHEET NUMBER TOTAL SHEETS

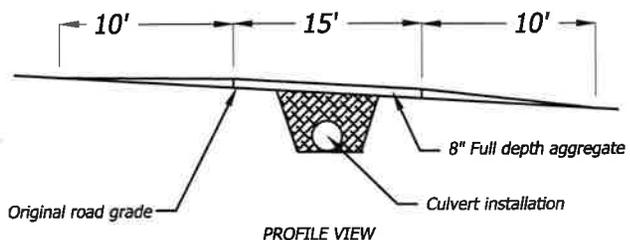
24

27

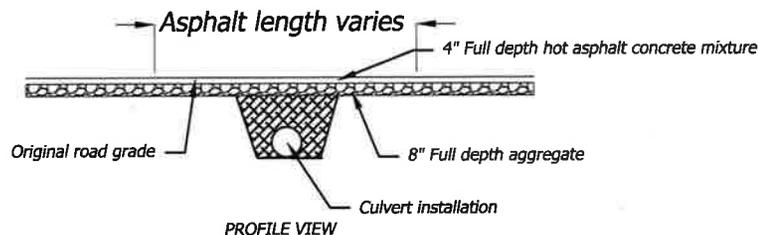
TYPICAL SECTION



CULVERT SURFACE ROCK REPLACEMENT FOR AGGREGATE ROADS ONLY



CULVERT SURFACE ROCK REPLACEMENT FOR PAVEMENT ROADS



Notes:

- 1) Top width dimensions are noted in the road reconstruction summary sheets
- 2) The spot rock length given in the reconstruction summary sheets do not include tapers, but 10' tapers do apply

ROAD NUMBER	BEGINNING MILE POST	ENDING MILE POST	CONSTRUCTION TOLERANCE	OUTSLOPED INSLOPED CROWNED	ROADBED WIDTH (FT)	DITCH DIMENSIONS (FT)		PAVEMENT STRUCTURE		
						D	H	TRAVELED WAY WIDTH (FT)	COMPACTED DEPTH (IN)	SLOPE RATIO
										AGG
								F	C	V:H
1800000	0.00	9.72	D	3 C	28*	2	1	24*	8	1:2
1830000	0.00	4.32	D	3 C	14*	2	1			
1830407	0.00	0.69	D	3 C	12*	2	1			
1831000	0.00	4.84	D	3 C	14*	2	1			
1831382	0.00	1.20	D	3 C	12*	2	1			
1831383	0.00	3.64	D	3 C	12*	2	1			

Drawings not to scale.

* Width are minimum. Reconstruct roadbed to match existing conditions.

HAHA THIN TIMBER SALE

ROAD RECONSTRUCTION TYPICALS

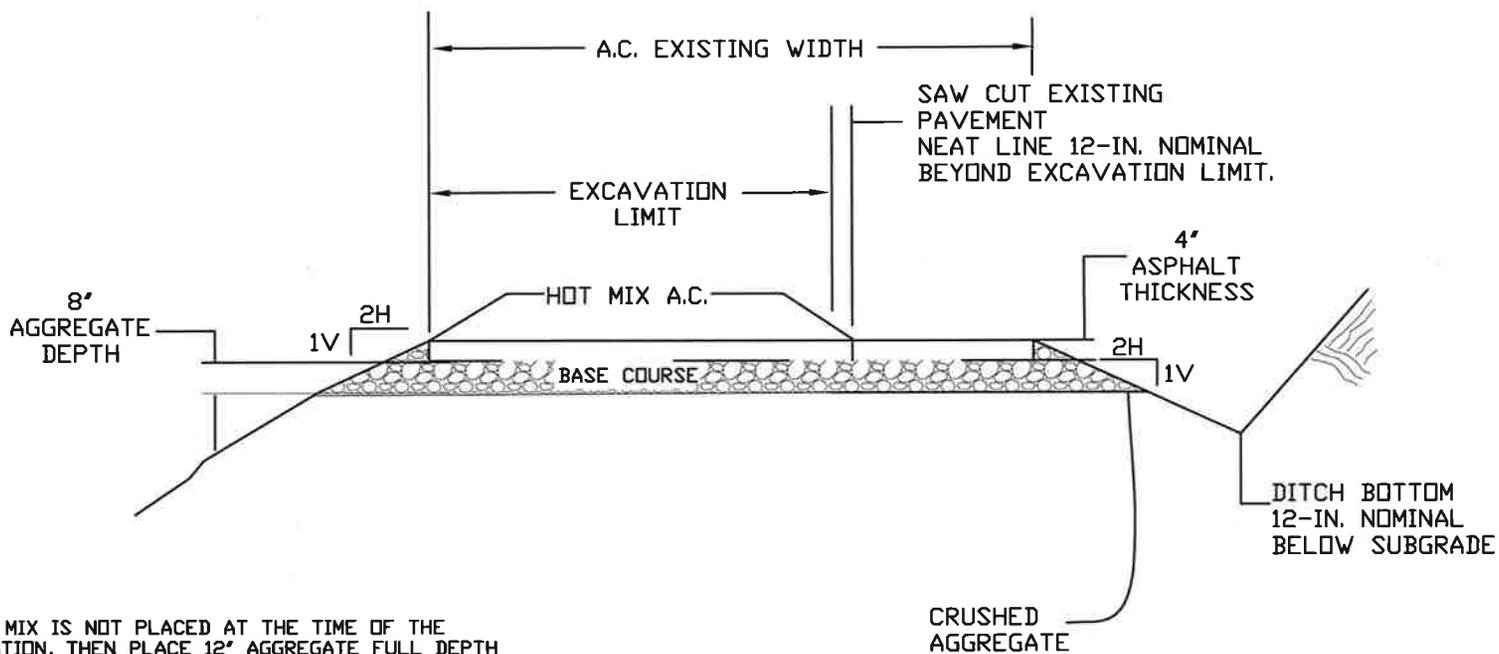


SHEET NUMBER TOTAL SHEETS

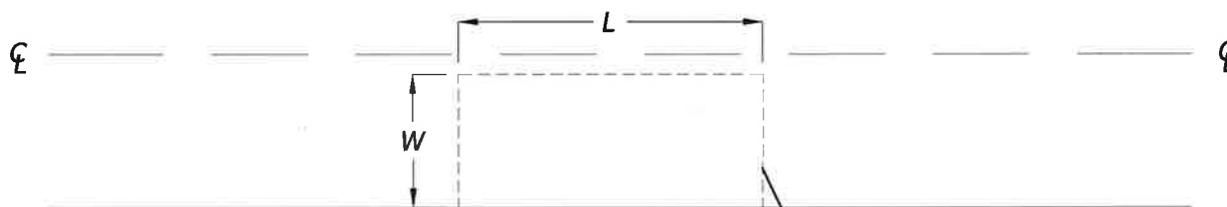
25

27

ASPHALT REPAIR



NOTE:
 IF HOT MIX IS NOT PLACED AT THE TIME OF THE EXCAVATION, THEN PLACE 12" AGGREGATE FULL DEPTH TO MAKE LEVEL WITH ROAD GRADE ELEVATION. THEN REMOVE THIS TOP 4" AND RECOMPACT THE BASE COURSE PRIOR TO PLACING THE HOT MIX.



ASPHALT PATCH
 SAW CUT EXISTING PAVEMENT
 NEAT LINE 12-IN. NOMINAL BEYOND EXCAVATION LIMIT.

(NOT TO SCALE)

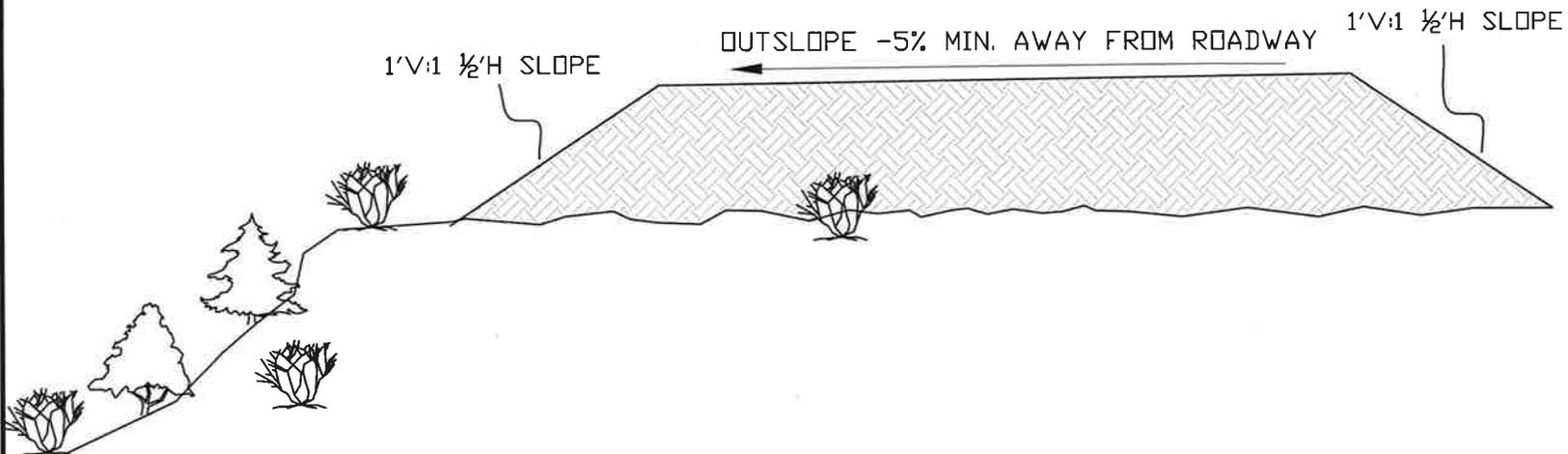
HAHA THIN TIMBER SALE
 ASPHALT REPAIR TYPICAL



SHEET NUMBER TOTAL SHEETS

26 27

DISPOSAL SITE TYPICAL



NOTES:

- 1) SCATTER MULCH OVER DISPOSAL MATERIAL AND ENSURE WATER WILL DRAIN AWAY.
- 2) DISPOSAL AREA LIMITS TO BE FLAGGED BY THE CD
- 3) MAINTAIN MINIMUM 5' DISTANCE FROM DOWNHILL SLOPES ON ALL SIDES.
- 4) DISPOSAL MATERIAL MAY ALSO BE PLACED AGAINST CUT BANKS AS APPROVED BY THE CD.
- 5) COMPACT MATERIAL IN 24" MAX LIFTS WITH 1 EQUIPMENT PASS.

HAHA THIN TIMBER SALE

DISPOSAL SITE TYPICAL

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION



SHEET NUMBER TOTAL SHEETS

27

27