



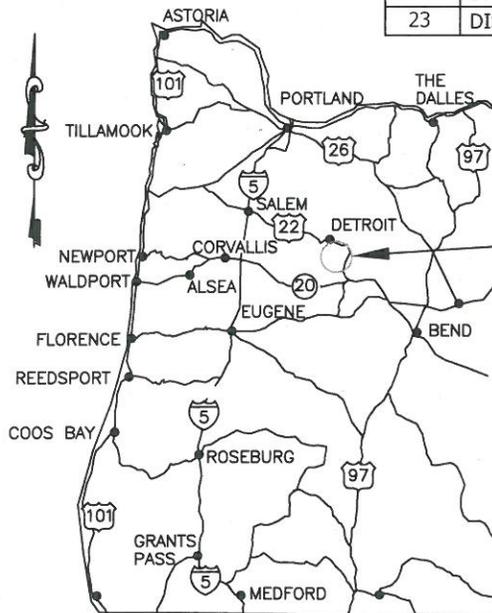
UNITED STATES DEPARTMENT OF AGRICULTURE
 FOREST SERVICE--REGION SIX
 WILLAMETTE NATIONAL FOREST
 DETROIT RANGER DISTRICT



PLANS FOR PROPOSED
JOJO THIN TIMBER SALE

ROAD NUMBER	LENGTH	TYPE OF WORK
2242	3.29 MILES	RECONSTRUCTION
2242-803	0.10 MILES	RECONSTRUCTION
2242-805	2.85 MILES	RECONSTRUCTION
2242-806	0.40 MILES	RECONSTRUCTION
2242-810	1.69 MILES	RECONSTRUCTION

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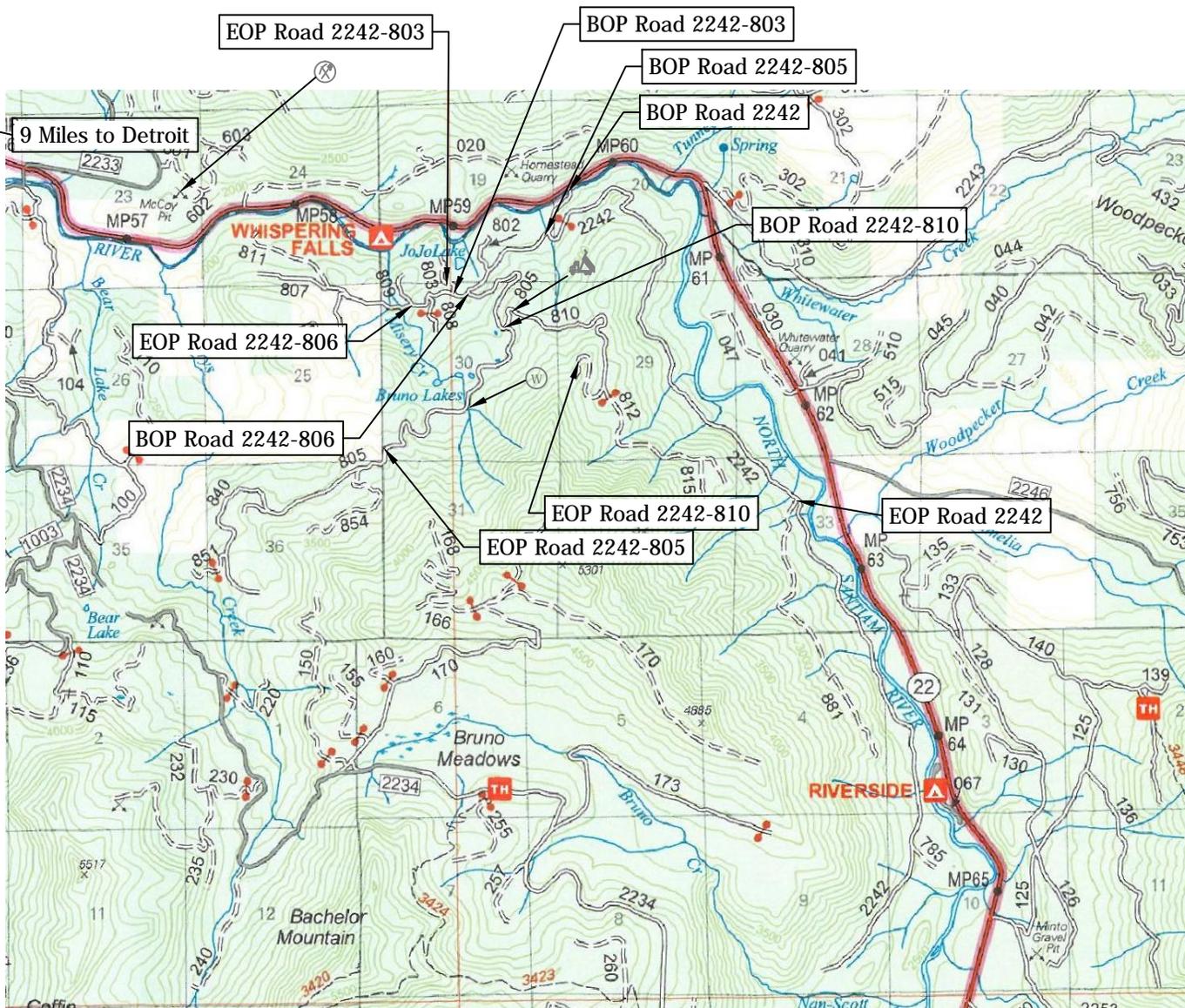
PROJECT SITE

**WESTERN OREGON
 INDEX MAP**

Project located in Marion and Linn Counties, OR

- STATE HIGHWAY
- FEDERAL HIGHWAY
- INTERSTATE HIGHWAY
- FOREST SERVICE HIGHWAYS
- FOREST SERVICE ROADS

DESIGNED BY: <i>Michael Howard</i>	DATE 3/14/2013
MICHAEL HOWARD	
REVIEWED BY: <i>Walter P. Huley</i>	DATE 3/14/13
REVIEWED BY: <i>Ken Robertson</i>	DATE 3/14/2013
(ASSISTANT DEVELOPMENT ENGINEER)	
RECOMMENDED BY: <i>J. P. [Signature]</i>	DATE 3/15/2013
(DISTRICT ENGINEER)	
APPROVED BY: <i>Tracy A. McMahon</i>	DATE 3/18/2013
(DISTRICT RANGER)	
APPROVED BY: <i>[Signature]</i>	DATE 3/15/13
(FOREST ENGINEER)	



T10S
T11S

R6E R7E

JOJO THIN TIMBER SALE

VICINITY MAP

LEGEND

-  Paved roads
-  Other roads
-  Other roads
-  Water source
-  Disposal area
-  Class 4 riprap, unclassified borrow and aggregate base



Scale in miles



SHEET NUMBER	TOTAL SHEETS
2	23

- Salvage existing aggregate during culvert installation and use as bedding and initial backfill material.
- Designated disposal site(s) are identified on the plans. The Contracting Officer will flag the disposal areas prior to placement of material. Smooth, shape and compact to drain with spreading equipment.
- All culvert installations/replacements with flowing water are considered stream channels. Replace culverts when stream channels are dry or during instream work window. Dewatering will be deleted if there is no water in the stream when work is being performed. The instream work period is between June 1st through August 31st.
- All new culvert installations require partial bevel cut (indirect cost to corresponding culvert installation).
- Spread weed free straw over disturbed soil at all culvert installations, disposal areas and other disturbed soil sites as directed by the Contracting Officer.
- Road 2242-810 - Roadway reconditioning requires the removal of all vegetation and root masses within the roadbed and in the ditch. Roadway reconditioning also includes reshaping ditches, road and culvert outlet ditches, and culvert inlet and outlets to achieve positive drainage. Haul material from ditch reconstruction, slough & slide removal to the designated disposal area.
- Minor excavation is required to place riprap for armoring culvert outlets (indirect cost to item 25104).
- Do not undercut road cutslopes when cleaning or reconstructing roadway ditch.
- Obtain mineral permit for aggregate base and sub-base from the Detroit Ranger Station.
- Construction tolerance class D for all roads.

Abbreviations

- HDPE: High Density Polyethylene
- CMP: Corrugated Metal Pipe
- BOP: Beginning Of Project
- EOP: End Of Project

JOJO THIN TIMBER SALE

GENERAL NOTES

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
3	23

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
20105	Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F	Lump Sum	All	For tree removal at culvert installations and ditch lines. Deck logs at an approved site by the Contracting Officer.
20358A	Removal of corrugated metal pipe, disposal method A	Each	2	Does not include excavation.
20358B	Removal of existing gate, disposal method A	Each	1	Includes all components of the gate structure.
20418	Drainage excavation, type ditch	Cubic Yard*	20	Disposal area located on the plans.
30318	Road reconditioning, roadbed, compaction B	Mile	0.27	
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	304	Grading D, aggregate base is Government provided at McCoy pit, road 2233 MP 0.81. In place compacted quantity. Quantity includes curve widening. Turnouts do not require aggregate placement.
60278A	24-inch corrugated polyethylene pipe, type S, method B	Foot	66	Provide soil tight bell and spigot joints.
60654	24-inch full-circle polyethylene outlet pipe, type C	Foot	10	Provide single pipe for each installation (no banding of pipe allowed).

* Denotes contract quantity

JOJO THIN TIMBER SALE

2242 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
4	23

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
20419	Drainage excavation, type lead off ditch	Foot	15	
20458	Embankment construction, compaction method B	Cubic Yard*	30	Obtain material from roadway excavation on road 2242-805 MP 1.71.
30318	Road reconditioning, roadbed, compaction B	Mile	0.10	Disposal area located on the plans.
32207	Subbase grading A, compaction method B	Cubic Yard*	96	Grading A, aggregate sub-base is Government provided at McCoy pit, road 2233 MP 0.81. In place compacted quantity. Quantity includes curve widening. Turnouts do not require aggregate placement.

* Denotes contract quantity

JOJO THIN TIMBER SALE

2242-803 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
5	23

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15101	Mobilization	Lump Sum	All	Includes fire protection, equipment cleaning and temporary traffic control.
15755	Erosion control & pollution prevention	Each	11	Dewatering for culvert installations.
20105	Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F	Lump Sum	All	For tree removal at culvert installations and ditch lines. Deck logs at an approved site by the Contracting Officer.
20304	Removal of logs, disposal method F	Lump Sum	All	Scatter logs as directed by Contracting Officer.
20358A	Removal of corrugated metal pipe, disposal method A	Each	16	Does not include excavation.
20401	Roadway excavation, compaction method B, finishing method N/A	Cubic Yard*	90	Utilize suitable material at locations called for on plans.
20415	Unsuitable excavation	Cubic Yard*	5	Disposal area located on the plans.
20458	Embankment construction, compaction method B	Cubic Yard*	20	Obtain material from roadway excavation on road 2242-805 MP 1.71.
20462	Unclassified borrow, compaction method B	Cubic Yard*	250	Material to be used when unsuitable or shortage of material is encountered during project work. Material is Government provided at McCoy pit, road 2233 MP 0.81. Haul and placement of unsuitable material to the designated waste area(s) is incidental to this pay item.
25104	Keyed riprap, class 4	Cubic Yard*	20	Government furnished material. Located at McCoy pit, road 2233 MP 0.81. Generated and sorting required.
30318	Road reconditioning, roadbed, compaction B	Mile	2.85	
30361	Road reconditioning, ditch	Foot	2481	Disposal area located on the plans.
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	2652	Grading D, aggregate is Government provided at McCoy pit, road 2233 MP 0.81. In place compacted quantity. Quantity includes curve widening. Turnouts do not require aggregate placement.
60278A	24-inch corrugated polyethylene pipe, type S, method B	Foot	570	Provide soil tight bell and spigot joints.
60278B	36-inch corrugated polyethylene pipe, type S, method B	Foot	76	Provide soil tight bell and spigot joints.
60654	24-inch full-circle polyethylene outlet pipe, type C	Foot	50	Provide single pipe for each installation (no banding of pipe allowed).

JOJO THIN TIMBER SALE

2242-805 ESTIMATE OF QUANTITIES

U.S.D.A FOREST SERVICE

PACIFIC NORTHWEST REGION



SHEET NUMBER	TOTAL SHEETS
6	22

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
60708	Cleaning culverts in place	Each	1	
62509	Mulching, dry method	Lump Sum	All	Contractor furnished. Includes disturbed ground on all roads and disposal areas.

* Denotes contract quantity

JOJO THIN TIMBER SALE

2242-805 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
7	23

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
15755	Erosion control & pollution prevention	Each	1	Dewatering for culvert installations.
20358A	Removal of corrugated metal pipe, disposal method A	Each	2	Does not include excavation.
20458	Embankment construction, compaction method B	Cubic Yard*	40	Borrow source located on road 2242-805 MP 0.05.
32203	Aggregate base, grading D, compaction method B	Cubic Yard*	20	Grading D, aggregate base is Government provided at McCoy pit, road 2233 MP 0.81. In place compacted quantity. Quantity includes curve widening. Turnouts do not require aggregate placement.
60278A	24-inch corrugated polyethylene pipe, type S, method B	Foot	100	Provide soil tight bell and spigot joints.
60654	24-inch full-circle polyethylene outlet pipe, type C	Foot	10	Provide single pipe for each installation (no banding of pipe allowed).
* Denotes contract quantity				

JOJO THIN TIMBER SALE

2242-806 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
8	23

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITIES	REMARKS
20103	Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F	Mile	1.69	Deck merchantable logs at an approved site by the Contracting Officer.
20415	Unsuitable excavation	Cubic Yard*	10	Disposal area located on the plans.
20358B	Removal of existing gate, disposal method A	Each	1	Includes all components of the gate structure.
20458	Embankment construction, compaction method B	Cubic Yard*	2	Obtain material from roadway reconditioning on road 2242-810.
30359	Roadway reconditioning, compaction B	Mile	1.69	Disposal area located on the plans.
32203A	Aggregate base, grading D, compaction method B	Cubic Yard*	15	Grading D, aggregate base is Government provided at McCoy pit, road 2233 MP 0.81. In place compacted quantity. Quantity includes curve widening. Turnouts do not require aggregate placement.

* Denotes contract quantity

JOJO THIN TIMBER SALE

2242-810 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
9	23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Beginning of project at mile post 59.7 on Highway 22.
0.01				Existing bridge.
0.04	30318	0.27		Begin roadbed reconditioning.
	32203	284	Cubic Yard*	Begin aggregate base placement, 4-inch compacted depth.
0.30				Road 2242-805 right.
				End roadbed reconditioning.
				End aggregate base placement, 4-inch compacted depth.
0.58	20358B	1	Each	Remove existing gate.
	20418	20	Cubic Yard*	Re-construct ditch by removing cut slope failure material. Place trees outside of existing clearing limits (incidental to item 20418).
1.21	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	32	Foot	Install 24-inch HDPE pipe at same skew and grade.
	60654	10	Foot	Install 24-inch HDPE outlet pipe.
	32203	10	Cubic Yard*	Place 8-inch depth of crushed aggregate over culvert installation. Blend to adjacent surfaces and widths to provide for smooth transition.
1.75	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	34	Foot	Install 24-inch HDPE pipe at same skew and grade.
	32203	10	Cubic Yard*	Place 8-inch depth of crushed aggregate over culvert installation. Blend to adjacent surfaces and widths to provide for smooth transition.
3.29				Road 2242-881 right.
				End of project.

JOJO THIN TIMBER SALE

2242 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
10	23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Beginning of project at mile post 0.07 on road 2242-806.
	30318	0.10	Mile	Begin roadbed reconditioning. Outslope roadbed 3% right.
	20458	30	Cubic Yard*	Place borrow (obtained from road 2242-805 MP 1.71) to raise subgrade elevation and to reduce abrupt vertical curve with road 2242-806.
	32207	96	Cubic Yard*	Begin 8-inch depth placement of grading A aggregate sub-base.
0.06	20419	15	Foot	Construct lead off ditch right. End outslope roadbed 3% right and begin 3% crown.
0.10				End roadbed reconditioning. End 8-inch depth placement of grading A aggregate sub-base. End of project.

JOJO THIN TIMBER SALE

2242-803 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
11	23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Beginning of project at mile post 0.30 on road 2242.
	30318	2.85	Mile	Begin roadbed reconditioning.
	32203	1272	Cubic Yard*	Begin aggregate base placement, 4-inch compacted depth.
0.06	20358A	1	Each	Remove existing 24-inch CMP.
	60278B	40	Foot	Install 36-inch HDPE pipe at same skew and grade. Lower outlet 3 ft to ground.
	25104	4	Cubic Yard*	Construct splash apron (10' L x 5' W x 2' D).
	20458	10	Cubic Yard*	Rebuild road shoulder with borrow material.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.14				Existing 24-inch CMP.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
0.39	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	36	Foot	Install 24-inch HDPE pipe at same skew and grade.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.47				Road 2242-802 right.
0.54	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 24-inch CMP.
	60278B	36	Foot	Install 36-inch HDPE pipe at same skew and grade.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.58	20304		Lump Sum	Remove logs 30 ft upstream of inlet and 20 ft downstream of outlet (as directed by Contracting Officer).
0.61	30361	211	Foot	Begin reconditioning of ditch.
0.64				Road 2242-806 right.
0.65				End reconditioning of ditch.

JOJO THIN TIMBER SALE

2242-805 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER TOTAL SHEETS

12

23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.70	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	2	Each	Remove existing 18-inch CMP.
	60278A	36	Foot	Install 24-inch HDPE pipe at same grade. Lower outlet 3 ft to ground.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.73	15755	1	Each	Perform dewatering for culvert installation.
	60278A	40	Foot	Install 24-inch HDPE pipe at 90° skew and 10% grade (as staked).
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.94	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	30	Foot	Install 24-inch HDPE pipe at same skew and grade.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
0.97				Disposal area right.
1.04	30361	1531	Foot	Begin reconditioning of ditch.
1.06	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	30	Foot	Install 24-inch HDPE pipe at same skew and grade.
	60654	20	Foot	Install 24-inch HDPE outlet pipe.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
1.17	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	34	Foot	Install 24-inch HDPE pipe at same skew and grade.
	60654	20	Foot	Install 24-inch HDPE outlet pipe.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
1.33				End reconditioning of ditch.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	34	Foot	Install 24-inch HDPE pipe at 110° skew and 10% grade (as staked).
	60654	10	Foot	Install 24-inch HDPE outlet pipe.
	20458	5	Cubic Yard*	Rebuild road shoulder with borrow material.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.

JOJO THIN TIMBER SALE

2242-805 RECONSTRUCTION SUMMARY

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION



SHEET NUMBER TOTAL SHEETS

13

23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
1.40				Road 2242-810 left.
				End aggregate base placement, 4-inch compacted depth.
	32203	278	Cubic Yard*	Begin aggregate base placement, 3-inch compacted depth.
1.48	30361	317	Foot	Begin reconditioning of ditch.
	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	60	Foot	Install 24-inch HDPE pipe at same skew and grade.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
1.54				End reconditioning of ditch.
	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	38	Foot	Install 24-inch HDPE pipe at 100° skew (as staked) and same grade.
	20458	5	Cubic Yard*	Rebuild road shoulder with borrow material.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
1.61	20105	All	Lump Sum	Remove trees and stump upstream of culvert as directed by Contracting Officer.
	20415	5	Cubic Yard*	Remove built up sediment from culvert inlet and haul to nearest designated disposal area.
1.62	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	34	Foot	Install 24-inch HDPE pipe at same skew. Lower outlet 2 ft to ground.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
1.71				Begin existing road slump.
				End aggregate base placement, 3-inch compacted depth.
	20401	90	Cubic Yard*	Reconstruct 270 foot slump as directed by Contracting Officer. Haul excess material to the designated disposal area. Construct ditch through slump (incidental to item 20401).
	32203	45	Cubic Yard*	Begin aggregate base placement, 8-inch compacted depth

JOJO THIN TIMBER SALE

2242-805 RECONSTRUCTION SUMMARY

U.S.D.A FOREST SERVICE

PACIFIC NORTHWEST REGION



SHEET NUMBER TOTAL SHEETS

14

23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
1.76				End existing road slump
				End aggregate base placement, 8-inch compacted depth
	32203	977		Begin aggregate base placement, 3-inch compacted depth.
1.89	60708	1	Each	Clean existing culvert.
1.97	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	50	Foot	Install 24-inch HDPE pipe at same skew and grade.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
2.07				Misery creek - Water source.
2.14	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	60	Foot	Install 24-inch HDPE pipe at same skew and grade.
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
2.33	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	32	Foot	Install 24-inch HDPE pipe at same skew and grade. Move inlet 2 ft upstream (as staked).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
2.45	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	56	Foot	Install 24-inch HDPE pipe at same skew and grade.
	25104	2	Cubic Yard*	Construct splash apron (7' L x 4' W x 2' D).
	32203	5	Cubic Yard*	Place 4-inch depth of crushed aggregate over culvert installation.
2.60				Un-named road right.
2.65	30361	422	Foot	Begin reconditioning of ditch.
2.73				End reconditioning of ditch.
2.85				End aggregate base placement, 3-inch compacted depth.
				End roadbed reconditioning.
				End of project.

JOJO THIN TIMBER SALE

2242-805 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A FOREST SERVICE



SHEET NUMBER TOTAL SHEETS

15

23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Beginning of project at mile post 0.64 on road 2242-805.
0.01	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	60	Foot	Install 24-inch HDPE pipe at same skew and grade.
	60654	10	Foot	Install 24-inch HDPE outlet pipe.
	20458	40	Cubic Yard*	Rebuild right road shoulder with borrow material.
	32203	10	Cubic Yard*	Place 8-inch depth of crushed aggregate over culvert installation. Blend to adjacent surfaces and widths to provide for smooth transition.
0.03	15755	1	Each	Perform dewatering for culvert replacement.
	20358A	1	Each	Remove existing 18-inch CMP.
	60278A	40	Foot	Install 24-inch HDPE pipe at same skew and grade.
	32203	10	Cubic Yard*	Place 8-inch depth of crushed aggregate over culvert installation. Blend to adjacent surfaces and widths to provide for smooth transition.
0.07				Road 2242-803 right.
0.22				Road 2242-808 left.
0.40				Road 2242-809 right.
				End of project.

JOJO THIN TIMBER SALE

2242-806 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER TOTAL SHEETS

16 23

MILE POST	ITEM NUMBER	QUANTITY	UNIT	DESCRIPTION OF WORK
0.00				Beginning of project at mile post 1.40 on road 2242-805.
	20103	1.69	Mile	Begin clearing and grubbing.
	30359	1.69	Mile	Begin roadway reconditioning.
0.15				Disposal area left. Material to be spread over existing scott broom noxious weeds. Prior to placement, obtain written direction from Contracting Officer.
0.30				Road 2242-813 right.
0.37				Existing 10 ft L x 8 ft W slump in center of road.
	32203	5	Cubic Yard*	Place crushed aggregate over slump culvert. Blend to adjacent surfaces and widths to provide for smooth transition.
0.40	20415	10	Cubic Yard*	Remove built up sediment from culvert inlets as directed by the Contracting Officer and haul to nearest designated disposal area.
0.45	32203	10	Cubic Yard*	Increase cover over culvert by placing 6-inch depth of crushed aggregate. Blend to adjacent surfaces and widths to provide for smooth transition.
0.74				Road 2242-814 left.
0.82	20358B	1	Each	Remove existing gate.
1.20				Road 2242-812 left.
1.50	20458	2	Cubic Yard*	Rebuild left shoulder at culvert with borrow material.
1.69				End clearing and grubbing.
				End roadway reconditioning.
				Disposal area left (50 CY maximum).
				End of project.

JOJO THIN TIMBER SALE

2242-810 RECONSTRUCTION SUMMARY

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER	TOTAL SHEETS
17	23

ROAD NUMBER	DESIGNED			AS BUILT			INSTALLATION DETAILS			RIPRAP		PIPE OUTLET DITCH (FT)	DEWATERING	REMARKS		
	STATION OR MILE POST	PIPE		OUTLET PIPE	STATION OR MILE POST	PIPE		OUTLET PIPE	TYPE	SKEW (°)	GRADE (%)				KEYED	
		DIAMETER (INCH)	LENGTH (FT)			DIAMETER	LENGTH (FT)								DIAMETER	LENGTH (FT)
2242	1.21	24	32	10				2	#	#						
	1.75	24	34					#	#	#						
2242-805	0.06	36	40					#	#		4			Lower outlet 3 ft to ground.		
	0.14										2					
	0.39	24	36					#	#	#	2		X			
	0.54	36	36					#	#	#			X			
	0.70	24	36					#	#				X	Lower outlet 3 ft to ground.		
	0.73	24	40					1	90	10	2		X	New installation. As staked.		
	0.94	24	30					#	#	#	2					
	1.06	24	30	20				2	#	#						
	1.17	24	34	20				2	#	#						
	1.33	24	34	10				2	110	10						
	1.48	24	60					#	#	#	2		X			
	1.54	24	38					#	100	#	2		X	New inlet location staked.		
	1.62	24	34					#	#		2		X	Lower outlet 2 ft to ground.		
1.89													Clean existing culvert.			
1.97	24	50					#	#	#			X				
2.14	24	60					#	#	#			X				
2.33	24	32					#	#	#			X	Move inlet 2 ft upstream (as staked).			
2.45	24	56					#	#	#	2		X				
2242-806	0.01	24	60	10				2	#	#						
	0.03	24	40					#	#	#			X			

Denotes skew, grade and type shall match removed installation unless otherwise noted.

X Denotes dewatering is required.

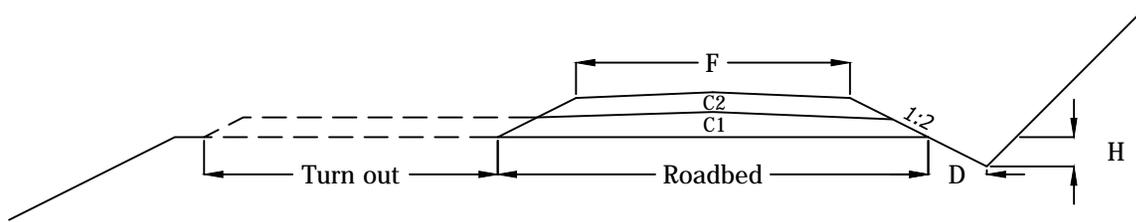
Some installations of culverts may require additional excavation below grade line.

JOJO THIN TIMBER SALE

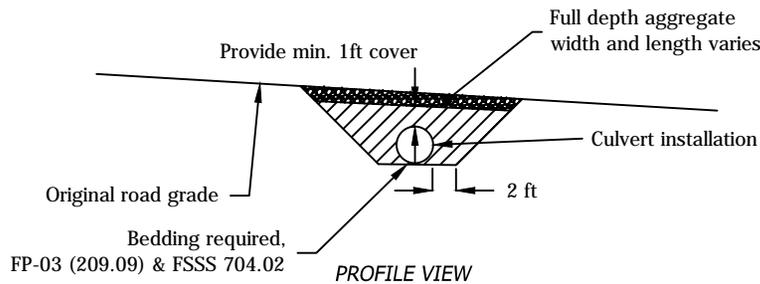
DRAINAGE LISTING



TYPICAL SECTION



CULVERT SURFACE ROCK REPLACEMENT



Note: Top width dimension is 12 ft unless noted otherwise

ROAD NUMBER	BEGINNING MILE POST	ENDING MILE POST	CONSTRUCTION TOLERANCE	OUTSLOPED INSLOPED CROWNED	ROADBED WIDTH (FT)	DITCH DIMENSIONS (FT)		PAVEMENT STRUCTURE					REMARKS	
								TRAVELED WAY WIDTH (FT)	GRADATION		COMPACTED DEPTH (IN)			SLOPE RATIO
									F	C1	C2	C1		C2
2242	0.00	0.30	D	3 C	15.3*	2*	1*	14	D	-	4	-	1:2	
2242	0.30	3.29	D	3 C	13.3*	2*	1*	12*	D	-	8	-	1:2	For culvert installations.
2242-803	0.00	0.06	D	3 O	14.7*	NA	NA	12	A	-	8	-	1:2	
2242-803	0.06	0.10	D	3 C	14.7*	NA	NA	12	A	-	8	-	1:2	
2242-805	0.00	1.71	D	3 C	13.3*	2*	1*	12	D	-	4	-	1:2	
2242-805	1.71	1.76	D	3 C	14.7*	2*	1*	12	D	-	8	-	1:2	
2242-805	1.76	2.85	D	3 C	13.0*	2*	1*	12	D	-	3	-	1:2	
2242-806	0.00	0.40	D	3 C	13.3*	2*	1*	12*	D	-	8	-	1:2	For culvert installations.
2242-810	0.00	1.69	D	3 C	-	2*	1*	12	D	-	-	-	-	

* Dimensions may be adjusted by the Contracting Officer to fit field conditions.

Drawings not to scale.

JOJO THIN TIMBER SALE

RECONSTRUCTION DETAILS

PACIFIC NORTHWEST REGION

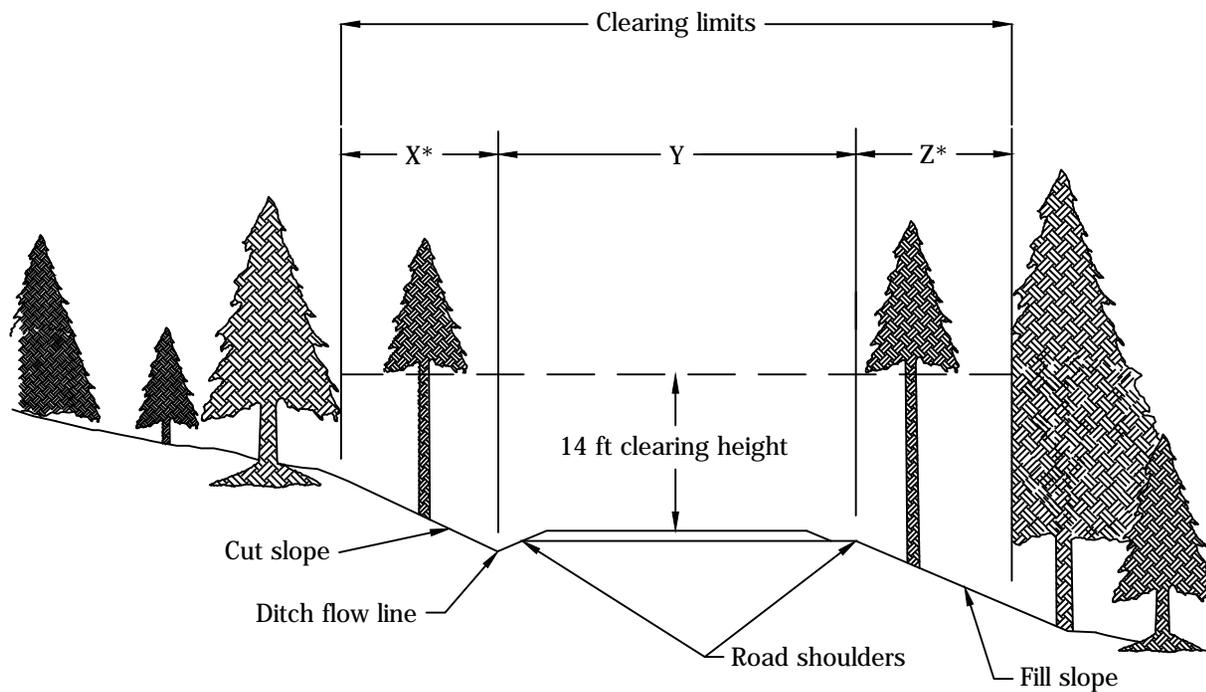
U.S.D.A. FOREST SERVICE



SHEET NUMBER TOTAL SHEETS

19

23



ROAD NUMBER	BEGINNING STATION OR MILE POST	ENDING STATION OR MILE POST	* (FT)
2242-810	0.00	1.69	3

NOTES:

1. Clear and grub all trees and stumps within "X, Y, and Z". Trees greater than 6 inches at 4.5 ft above the ground within "Z" can remain.
2. Cut other vegetation to a maximum height of 6 inches above the ground surfaces within "X, Y, and Z".
3. Limb trees to 14 ft above the traveled way surface.
4. Drawings not to scale.

JOJO THIN TIMBER SALE

CLEARING AND GRUBBING DETAIL

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

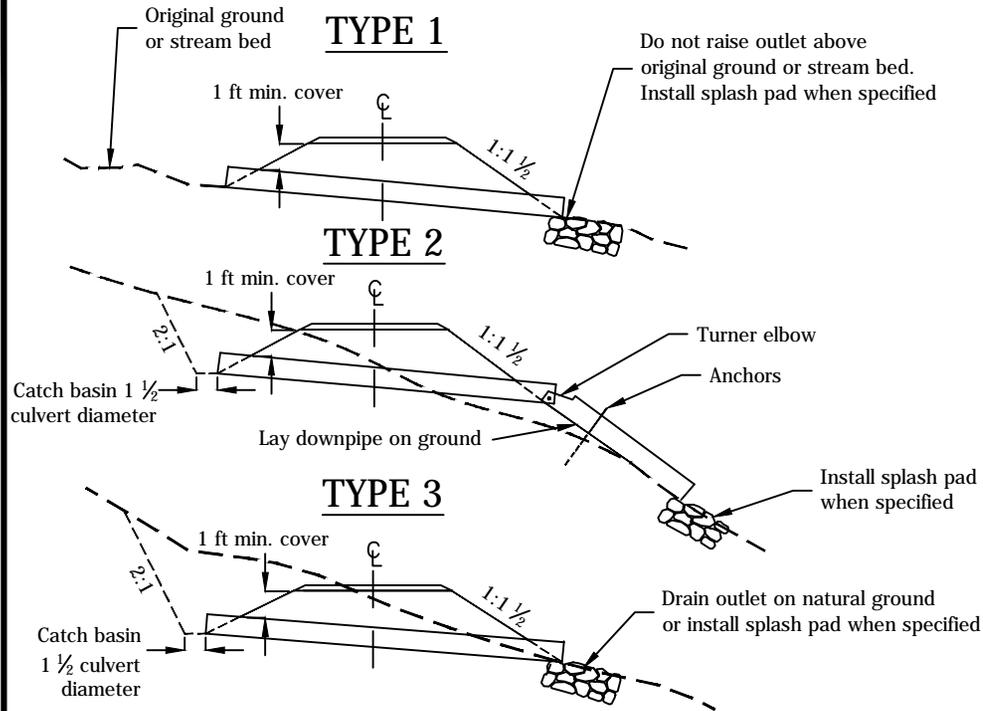


SHEET NUMBER TOTAL SHEETS

20

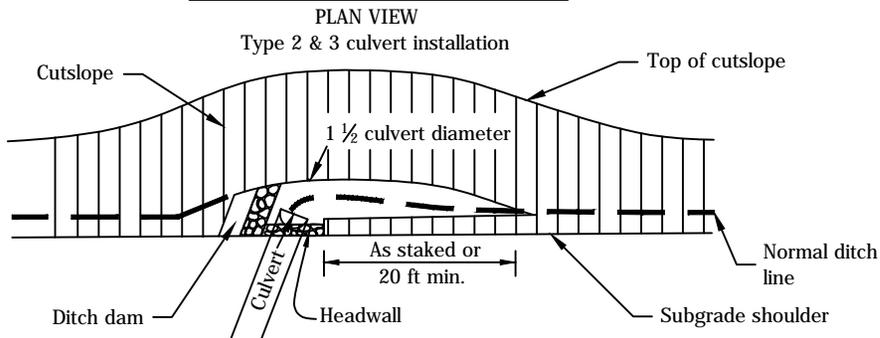
23

CULVERT TYPES



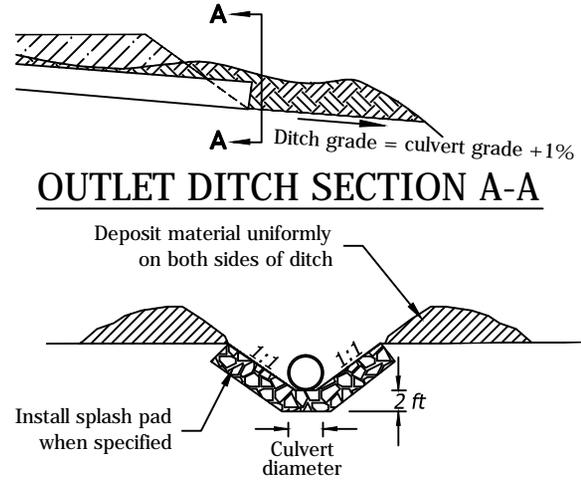
Some installations of culverts may require additional excavation below grade line.

CATCH BASIN DETAIL



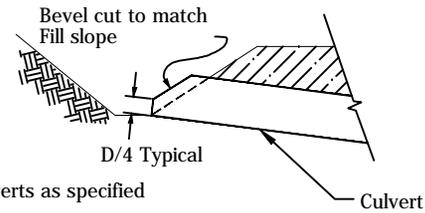
Drawings not to scale

OUTLET DITCH



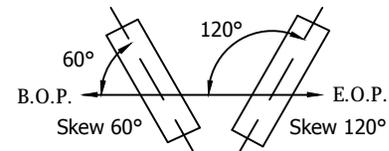
Note: Place mulch on berm

PARTIAL BEVELED INLET DETAIL

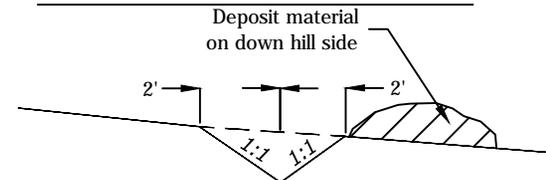


Note: Bevel culverts as specified

SKEW DIAGRAM



LEAD OFF DITCH DETAIL



Note: Place mulch on berm

JOJO THIN TIMBER SALE

DRAINAGE CONSTRUCTION TYPICALS

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

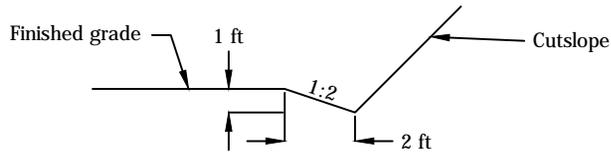


SHEET NUMBER TOTAL SHEETS

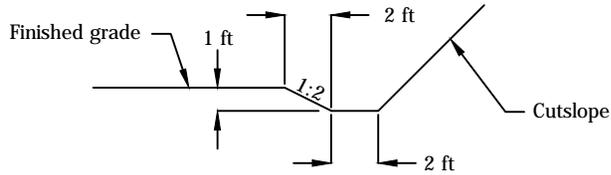
21

23

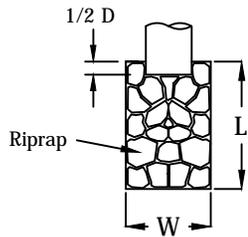
ROADWAY DITCH DETAILS



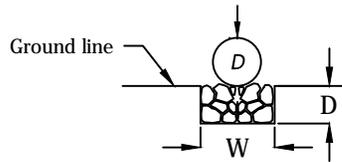
FLAT BOTTOM DITCH DETAILS



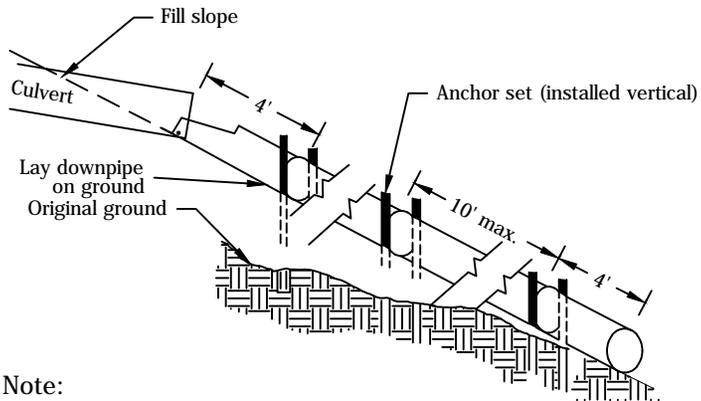
SPLASH PAD PLAN VIEW



SPLASH PAD ELEV. VIEW



ANCHOR DETAILS

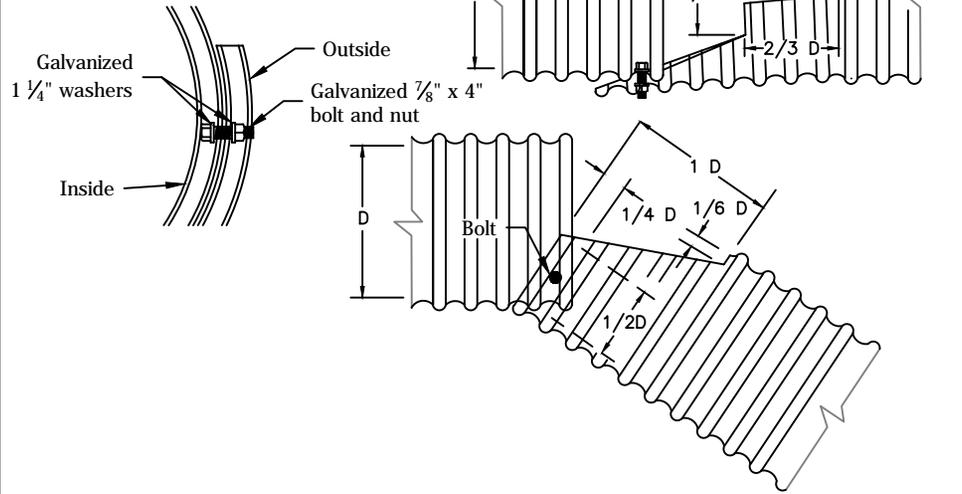


Note:

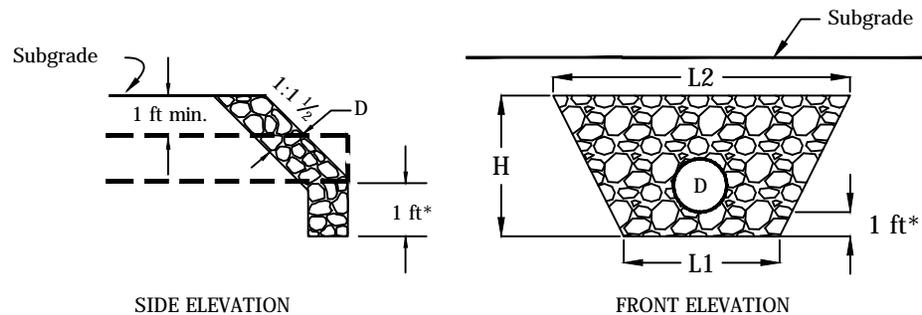
Elbows and anchors are indirectly included in the pay item for the corresponding outlet pipe. Anchor sets consist of two steel 6 ft fence posts (AASHTO M 281) and no. 9 galvanized wire. Drive posts a minimum 2 ft into the ground. Provide 3 strands of wire twisted together and encompass the entire circumference of the pipe and fence posts.

TURNER ELBOW DETAILS FOR PLASTIC PIPE

BOLT DETAIL FOR PLASTIC PIPE



RIPRAP HEADWALL



SIDE ELEVATION

FRONT ELEVATION

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

JOJO THIN TIMBER SALE

DRAINAGE CONSTRUCTION TYPICALS

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION

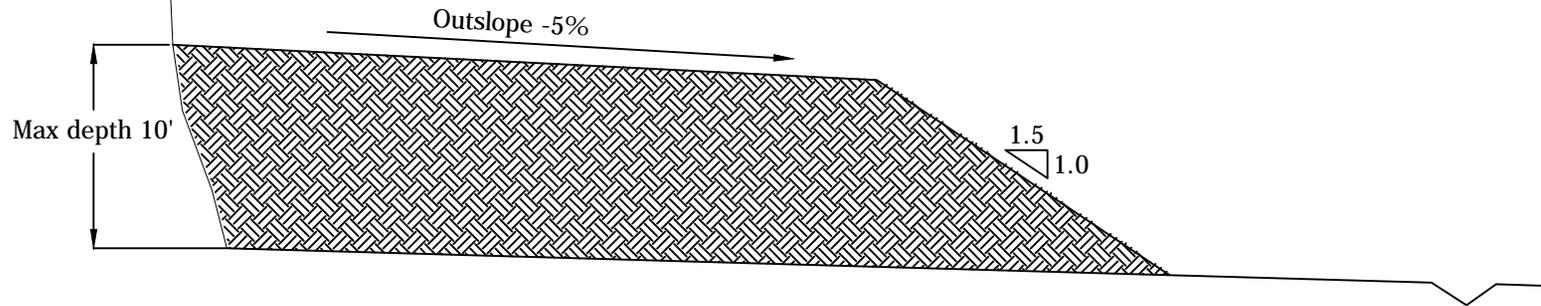


SHEET NUMBER TOTAL SHEETS

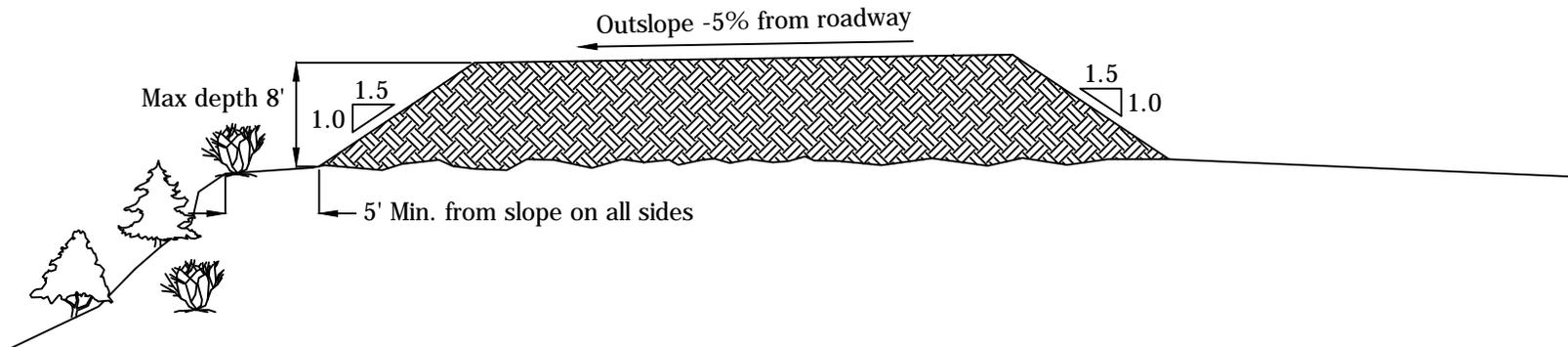
22

23

TYPICAL DISPOSAL AREA WITH VERTICAL FACE



TYPICAL DISPOSAL AREA WITH OPEN AREA



NOTES:

1. Disposal area limits to be marked by the CO.
2. Mulch the disposal area.

JOJO THIN TIMBER SALE
DISPOSAL AREA TYPICALS

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE



SHEET NUMBER TOTAL SHEETS

23 23