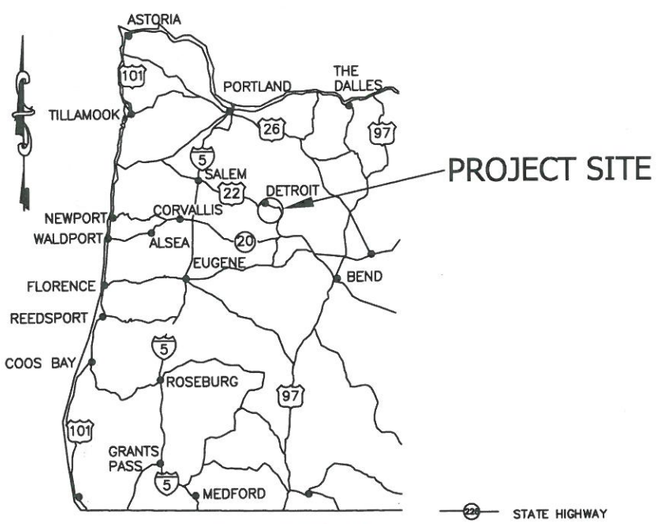
# FOREST SERVICE - REGION SIX
# WILLAMETTE NATIONAL FOREST
# DETROIT RANGER DISTRICT

PLANS FOR

# OSO THIN TIMBER SALE

| ROAD NUMBER | LENGTH | TYPE OF WORK |
|---|---|---|
| 1003 | 10.13 miles | RECONSTRUCTION |
| 1003-358 | 0.45 miles | RECONSTRUCTION |
| 1003-360 | 0.28 miles | RECONSTRUCTION |
| 2234 | 2.27 miles | RECONSTRUCTION |
| 2234-205 | 0.34 miles | RECONSTRUCTION |
| 2234-217 | 0.33 miles | RECONSTRUCTION |




**WESTERN OREGON INDEX MAP**

STATE HIGHWAY
FEDERAL HIGHWAY
INTERSTATE HIGHWAY

INDEX TO SHEETS

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WILLAMETTE national forest

| | |
|---|---|
| DESIGNED BY: Michael Howard | DATE 2/4/2015 |
| MICHAEL HOWARD - PROJECT ENGINEER | |
| REVIEWED BY: Danny Mathews | DATE 2/4/2015 |
| DANNY MATHEWS - CIVIL ENG. TECH. | |
| REVIEWED BY: | DATE 2/25/2015 |
| JEFF CASWELL - DEVELOPMENT ENGINEER | |
| RECOMMENDED BY: James P. Statezny Jr. | DATE 2/24/15 |
| JAMIE STATEZNY - ZONE ENGINEER | |
| APPROVED BY: Grady A. McMahan | DATE 2/25/15 |
| GRADY McMAHAN - DISTRICT RANGER | |
| APPROVED BY: | DATE 2/25/2015 |
| DARREN LEMON - DEPUTY SUB-REG. ENGINEER | |

PROJECT LOCATED IN LINN COUNTY, OREGON

PLANS TO BE PRINTED ON 11" X 17"

# OSO THIN TIMBER SALE

## VICINITY MAP

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

EOP Road 2234

BOP Road 2234

McCoy pit

BOP Road 2234 & 2234-205

EOP Road 2234-205 &
BOP Road 2234-217

EOP Road 2234-217

BOP Road 2234-100

EOP Roads 1003 & 2234-100

EOP Road 2234

BOP Road 1003

BOP Road 2236

EOP Road 2236

## LEGEND

- Paved roads
- Other roads
- Other roads
- Log deck area
- Water source
- Borrow and disposal area
- Riprap source
- Campground

0 1/2 1

Scale in miles

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 2 | 22 |

- All culvert installations/replacements with flowing water are considered stream channels. Replace culverts when stream channels are dry or during instream work window between June 1st through August 31st.

- Salvage and stockpile existing aggregate during culvert installation and use as bedding and initial backfill material.

- Item 32232, aggregate is Government provided at McCoy pit. Obtain a mineral permit from the Detroit Ranger Station.

- Item 62509, Contractor provided. Spread weed free mulch over disturbed soil at all culvert installations, fill repairs, disposal areas and other disturbed soil sites as directed by the Contracting Officer. All disturbed/constructed slopes flatter than 1V:1H shall be covered with mulch. Reconditioned ditches do not require mulch. Mulch shall be applied minimum 1" thick so that no gaps exist between soil and matrix.

- 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 construction equipment as directed by Contracting Officer.

- All new HDPE culvert installations require partial bevel cut to the inlet end (indirect cost to corresponding culvert installation).

- Construction tolerance class D for all roads.

Abbreviations

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

OSO THIN TIMBER SALE

GENERAL NOTES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 3 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 15101 | Mobilzation | Lump Sum | All | Includes fire protection, equipment cleaning and temporary traffic control for ALL roads. |
| 15713 | Soil erosion and pollution control | Lump Sum | All | For culvert dewatering. |
| 20105 | Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F | Lump Sum | All | For tree removal at culvert installations sites. Log deck area(s) shown on the vicinity map. |
| 20358 | Removal of culvert, disposal method A | Each | 24 | Does not include excavation. |
| 20419 | Drainage excavation, type culvert outlet ditch | Foot | 20 | Place mulch on berm. |
| 20462 | Unclassified borrow, compaction method B | Cubic Yard* | 8 | Government furnished material, located at McCoy pit. |
| 25101 | Placed riprap, class 4 | Cubic Yard* | 20 | Government furnished material, located at McCoy pit. |
| 30318 | Road reconditioning, roadbed, compaction method E. | Mile | 1.92 | |
| 32232 | Haul and place stockpiled aggregate, compaction method B | Cubic Yard* | 2460 | See general notes. |
| 60256A | 48-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 60 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts and gaskets. |
| 60256B | 18-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 40 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts. |
| 60278 | 24-inch corrugated polyethylene pipe, type S, method B | Foot | 958 | Contractor furnished material. Provide soil tight bell and spigot joints. |
| 60654 | 24-inch full-circle polyethylene outlet pipe, type C | Foot | 40 | Contractor furnished material. Includes anchors, wire, and hardware for installation(s). |
| 62509 | Mulching, dry method | Lump Sum | All | See general notes. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 1003 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 4 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 15713 | Soil erosion and pollution control | Lump Sum | All | For culvert dewatering. |
| 20105 | Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F | Lump Sum | All | For tree removal at culvert installations sites. Deck merchantable timber at nearest turnout. |
| 20462 | Unclassified borrow, compaction method B | Cubic Yard* | 20 | Government furnished material, located off road 2234 MP 3.35 (right side). |
| 60256 | 24-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 70 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts. |
| 62509 | Mulching, dry method | Lump Sum | All | See general notes. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 1003-358 ESTIMATE OF QUANTITIES

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 5 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 15713 | Soil erosion and pollution control | Lump Sum | All | For culvert dewatering. |
| 20462 | Unclassified borrow, compaction method B | Cubic Yard* | 30 | Government furnished material. Located at off road 2234 MP 3.35 (right side). |
| 60256 | 36-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 40 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts and gaskets. |
| 62509 | Mulching, dry method | Lump Sum | All | See general notes. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 1003-360 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 6 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 20103 | Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F | Mile | 0.92 | See clearing and grubbing typical. Merchantable timber decking area(s) show on the plans. |
| | | | | |
| 30360 | Roadway reconditioning | Mile | 2.27 | Clean the existing asphalt road surface of all loose material, dirt, or other deleterious substances. All material shall be scattered over the road shoulder onto the fill slope. No material shall be put into the ditch line. Reshape ditches and culvert inlets and outlets to achieve positive drainage and a uniform ditch width, depth, and grade. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 2234 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 7 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 15713 | Soil erosion and pollution control | Lump Sum | All | For culvert dewatering. |
| 20105 | Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F | Lump Sum | All | For tree removal at culvert installations sites. Deck merchantable timber at nearest turnout. |
| 20358 | Removal of culvert, disposal method A | Each | 1 | Does not include excavation. |
| 32232 | Haul and place stockpiled aggregate, compaction method B | Cubic Yard* | 20 | See general notes. |
| 60256 | 24-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 50 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts. |
| 62509 | Mulching, dry method | Lump Sum | All | See general notes. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 2234-205 ESTIMATE OF QUANTITIES

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 8 | 22 |

| ITEM NUMBER | DESCRIPTION | UNIT | QUANTITIES | REMARKS |
|---|---|---|---|---|
| 15713 | Soil erosion and pollution control | Lump Sum | All | For culvert dewatering. |
| 20103 | Clearing and grubbing, disposal of tops and limbs F, logs J, stumps F | Mile | 0.33 | See clearing and grubbing typical. Also includes tree removal at culvert installation site. Deck merchantable timber at nearest turnout. |
| 20358 | Removal of culvert, disposal method A | Each | 1 | Does not include excavation. |
| 30359 | Roadway reconditioning, compaction method E | Mile | 0.33 | Includes reconditioning of ditch, shoulder, roadbed and aggregate surface. Do not undercut road cutslopes when cleaning or reconstructing roadway ditch. Haul material to the designated disposal area and place mulch. |
| 60256 | 36-inch corrugated steel pipe, 0.109-inch thickness, method B | Foot | 40 | Government furnished sections and bands are available for pickup at the Detroit Ranger station. Contractor to furnish bolts and gaskets. |
| 62509 | Mulching, dry method | Lump Sum | All | See general notes. |

* Denotes contract quantity

OSO THIN TIMBER SALE

ROAD 2234-217 ESTIMATE OF QUANTITIES

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 9 | 22 |

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 0.93 on road 10. |
| | | | | |
| 0.65 | 20462 | 1 | Cubic Yard* | Raise culvert catch basin with borrow to elevation of invert. |
| | | | | |
| 0.88 | 20462 | 1 | Cubic Yard* | Raise culvert catch basin with borrow to elevation of invert. |
| | | | | |
| 0.95 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60256A | 60 | Foot | Install 48-inch CMP at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 1.61 | | | | Disposal area left, appx. 100'L x 20'W. |
| | | | | |
| 1.62 | | | | Road 1003-404 right. |
| | | | | |
| 1.89 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 2.01 | 20462 | 1 | Cubic Yard* | Raise culvert catch basin with borrow to elevation of invert. |
| | | | | |
| 2.21 | 20462 | 1 | Cubic Yard* | Raise culvert catch basin with borrow to elevation of invert. |
| | | | | |
| 2.33 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 34 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 2.85 | | | | Road 1003-405 right. |
| | | | | |
| 3.08 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 36 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 60654 | 20 | Foot | Install 24-inch HDPE outlet pipe. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 3.30 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 40 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 3.56 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 36 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 60654 | 20 | Foot | Install 24-inch HDPE outlet pipe. |
| | 25101 | 20 | Cubic Yard* | Place class 4 riprap as directed by Contracting Officer. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 4.03 | 20462 | 1 | Cubic Yard* | Raise culvert catch basin with borrow to elevation of invert. |
| | | | | |
| 4.11 | | | | Road 1003-409 right. |
| | | | | |
| 4.26 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew. Lower outlet to ground. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 4.46 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 36 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 20419 | 20 | Foot | Construct culvert lead off ditch. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 4.51 | | | | Road 1003-305 right. |
| | | | | |
| 4.99 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 54 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| | | | | |



# OSO THIN TIMBER SALE

## ROAD 1003 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 5.02 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60256B | 40 | Foot | Install 18-inch CMP at same skew and grade. Re-attach existing down spout (incidental to item 60256B) |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 5.17 | | | | Road 1003-417 right. |
| | | | | |
| 5.26 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 30 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 6.08 | | | | Road 1003-308 left "Y". |
| | | | | |
| 6.11 | | | | Road 1003-308 left "Y". |
| | | | | |
| 6.15 | | | | Road 1003-320 left. |
| | | | | |
| 6.55 | | | | Road 1003-324 left and road 1003-419 right. |
| | | | | |
| 6.95 | | | | Road 1003-354 right and un-named road left. |
| | | | | |
| 7.10 | | | | Road 1003-355 left. |
| | 30318 | 1.92 | Mile | Begin roadbed reconditioning. |
| | 32232 | 2140 | Cubic Yard* | Begin aggregate base placement, 4-inch compacted depth. |
| | | | | |
| 7.14 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 30 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 7.22 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 44 | Foot | Install 24-inch HDPE pipe at same skew and lower outlet to ground. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 7.39 | | | | Road 1003-456 right. |
| | | | | |
| 7.57 | 20462 | 3 | Cubic Yard* | Repair left road shoulder by placing borrow. |
| | | | | |
| 7.70 | | | | Road 1011 right "Y". |
| | | | | |
| 7.74 | | | | Road 1011 right "Y". |
| | | | | |
| 7.83 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and lower outlet to ground. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 7.94 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and lower outlet to ground. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 8.06 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and lower outlet to ground. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 8.19 | | | | Road 1003-358 left. |
| | | | | |
| 8.24 | | | | Road 1003-360 left. |
| | | | | |
| 8.33 | | | | Road 1003-448 right. |
| | | | | |
| 9.02 | | | | Road 1003-381 left. |
| | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | End roadbed reconditioning. |
| | | | | End aggregate base placement, 4-inch compacted depth. |
| | | | | |



# OSO THIN TIMBER SALE

## ROAD 1003 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 9.05 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.17 | | | | Road 1003-465 right. |
| | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 46 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.28 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 60 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.34 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 50 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.36 | | | | Road 2236 right "Y". |
| | | | | |
| 9.38 | | | | Road 2236 right "Y". |
| | | | | |
| 9.72 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 34 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.93 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 38 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 10 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 9.88 | | | | Disposal area right, appx. 100'L x 40'W. |
| | | | | |
| 10.00 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60278 | 40 | Foot | Install 24-inch HDPE pipe at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 10.13 | | | | End of project. |
| | | | | Road 2234 left and right, and road 2234-100 straight. |



# OSO THIN TIMBER SALE

## ROAD 1003 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 8.19 on road 1003. |
| | | | | |
| 0.31 | 60256 | 35 | Foot | Install 24-inch CMP at $90^0$ skew and 5% grade. |
| | | | | Remove logs from culvert excavation and place as directed by Contracting Officer (Incidental to Item 60256) |
| | 20462 | 10 | Cubic Yard* | Place borrow material to replace void from removed logs. |
| | | | | |
| 0.45 | 60256 | 35 | Foot | Install 24-inch CMP at $90^0$ skew and 5% grade. |
| | | | | Remove logs from culvert excavation and place as directed by Contracting Officer (Incidental to Item 60256) |
| | 20462 | 10 | Cubic Yard* | Place borrow material to replace void from removed logs. |
| | | | | End of project. |

SHEET NUMBER 13
TOTAL SHEETS 22

# OSO THIN TIMBER SALE

## ROAD 1003-358 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 8.24 on road 1003. |
| | | | | |
| 0.28 | 60256 | 40 | Foot | Install 36-inch CMP at $90^0$ skew and 5% grade. |
| | 20462 | 30 | Cubic Yard* | Place borrow material over new pipe installation and blend to adjacent ends as directed by Contracting Officer. |
| | | | | End of project. |



# OSO THIN TIMBER SALE

## ROAD 1003-360 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 56.15 on Highway 22. |
| | 20103 | 0.53 | Mile | Begin clearing and grubbing. |
| | 30360 | 0.53 | Mile | Begin cleaning existing asphalt surface and ditchline. |
| | | | | |
| 0.10 | | | | Road 2234-100 left. |
| | | | | |
| 0.53 | | | | End clearing and grubbing. |
| | | | | End cleaning existing asphalt surface and ditchline. |
| | | | | |
| 3.35 | | | | Disposal/borrow area right. |
| | | | | |
| 3.43 | | | | Road 2234-205 left. |
| | 30360 | 1.74 | Mile | Begin cleaning existing asphalt surface and ditchline. |
| | | | | |
| 3.46 | | | | Road 2234-120 left. |
| | | | | |
| 4.25 | | | | Road 2234-219 right. |
| | | | | |
| 4.78 | | | | Road 1003 right and road 2234-100 left. |
| | 20103 | 0.39 | Mile | Begin clearing and grubbing. |
| | | | | |
| 5.17 | | | | End clearing and grubbing. |
| | | | | End cleaning existing asphalt surface and ditchline. |
| | | | | End of project. |



# OSO THIN TIMBER SALE

## ROAD 2234 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 3.43 on road 2234. |
| | | | | |
| 0.23 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60256 | 50 | Foot | Install 24-inch CMP at same skew and grade. |
| | 32232 | 20 | Cubic Yard* | Place aggregate base course. |
| | | | | |
| 0.34 | | | | End of project. |
| | | | | Road 2234-217 right. |



# OSO THIN TIMBER SALE

## ROAD 2234-205 WORK SUMMARY

| MILE POST | ITEM NUMBER | QUANTITY | UNIT | RECONSTRUCTION SUMMARY |
|---|---|---|---|---|
| 0.00 | | | | Beginning of project at mile post 0.34 on road 2234-205. |
| | 20103 | 0.33 | Mile | Begin clearing and grubbing. |
| | 30359 | 0.33 | Mile | Begin roadway reconditioning. Outslope the road 3%. |
| | | | | |
| 0.18 | | | | Replace existing culvert. |
| | 20358 | 1 | Each | Remove existing culvert. |
| | 60256 | 40 | Foot | Install 36-inch CMP at $90^0$ skew and lower outlet to ground. |
| | | | | |
| 0.33 | | | | End clearing and grubbing. |
| | | | | End roadway reconditioning. |
| | | | | End of project. |

SHEET NUMBER 17

TOTAL SHEETS 22

# OSO THIN TIMBER SALE

## ROAD 2234-217 WORK SUMMARY

U.S.D.A. FOREST SERVICE

PACIFIC NORTHWEST REGION

| ROAD NUMBER | DESIGNED | | | | AS BUILT | | | | INSTALLATION DETAILS | | | RIPRAP | | CULVERT OUTLET DITCH (FT) | CLEAN EXISTING CULVERT | CRUSHED AGGREGATE | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STATION OR MILE POST | PIPE | | OUTLET PIPE | STATION OR MILE POST | PIPE | | OUTLET PIPE | TYPE | SKEW (°) | GRADE (%) | KEYED | | | | DEPTH (INCHES) | TOTAL (CY*) | |
| | | DIAMETER (INCH) | LENGTH (FT) | FULL CIRCLE (FT) | | DIAMETER | LENGTH (FT) | FULL CIRCLE (FT) | | | | HEADWALL (CY) | SPLASH PAD (CY) | | | | | |
| **1003** | 0.65 | | | | | | | | | | | | | | | | | Raise culvert catch basin with borrow. |
| | 0.88 | | | | | | | | | | | | | | | | | Raise culvert catch basin with borrow. |
| | 0.95 | 48 | 60 | | | | | | # | # | # | | | | | 8 | 20 | Government furnished CMP. |
| | 1.89 | 24 | 50 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 2.01 | | | | | | | | | | | | | | | | | Raise culvert catch basin with borrow. |
| | 2.21 | | | | | | | | | | | | | | | | | Raise culvert catch basin with borrow. |
| | 2.33 | 24 | 34 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 3.08 | 24 | 36 | 20 | | | | | # | # | # | | | | | 8 | 10 | |
| | 3.30 | 24 | 40 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 3.56 | 24 | 36 | 20 | | | | | # | # | # | | | | | 8 | 10 | |
| | 4.03 | | | | | | | | | | | | | | | | | Raise culvert catch basin with borrow. |
| | 4.26 | 24 | 50 | | | | | | # | # | | | | | | 8 | 10 | Lower outlet to ground. |
| | 4.46 | 24 | 36 | | | | | | # | # | # | | | 20 | | 8 | 10 | |
| | 4.99 | 24 | 54 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 5.02 | 18 | 40 | | | | | | # | # | # | | | | | 8 | 10 | Government furnished CMP. Re-attach existing down spout. |
| | 5.26 | 24 | 30 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 7.14 | 24 | 30 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 7.22 | 24 | 44 | | | | | | # | # | | | | | | 8 | 10 | Lower outlet to ground. |
| | 7.83 | 24 | 50 | | | | | | # | # | | | | | | 8 | 10 | Lower outlet to ground. |
| | 7.94 | 24 | 50 | | | | | | # | # | | | | | | 8 | 10 | Lower outlet to ground. |
| | 8.06 | 24 | 50 | | | | | | # | # | | | | | | 8 | 10 | Lower outlet to ground. |
| | 9.02 | 24 | 50 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 9.05 | 24 | 50 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 9.17 | 24 | 46 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 9.28 | 24 | 60 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 9.34 | 24 | 50 | | | | | | # | # | # | | | | | 8 | 20 | |
| | 9.72 | 24 | 34 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 9.93 | 24 | 38 | | | | | | # | # | # | | | | | 8 | 10 | |
| | 10.00 | 24 | 40 | | | | | | # | # | # | | | | | 8 | 20 | |
| | | | | | | | | | | | | | | | | | | |
| **1003-358** | 0.31 | 24 | 35 | | | | | | 1 | 90 | 5 | | | | | | | Government furnished CMP. |
| | 0.45 | 24 | 35 | | | | | | 1 | 90 | 5 | | | | | | | Government furnished CMP. |
| | | | | | | | | | | | | | | | | | | |
| **1003-360** | 0.28 | 36 | 40 | | | | | | 1 | 90 | 5 | | | | | | | Government furnished CMP. |
| | | | | | | | | | | | | | | | | | | |
| **2234-205** | 0.23 | 24 | 50 | | | | | | # | # | # | | | | | 8 | 20 | Government furnished CMP. |
| | | | | | | | | | | | | | | | | | | |
| **2234-217** | 0.18 | 36 | 40 | | | | | | # | 90 | | | | | | | | Government furnished CMP. Lower outlet to ground. |

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

*Denotes contract quantity

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

OSO THIN TIMBER SALE

DRAINAGE LISTING

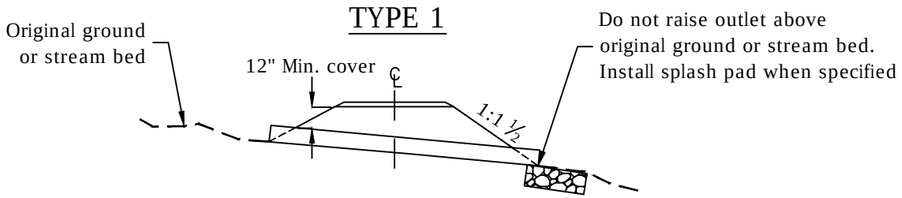
PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

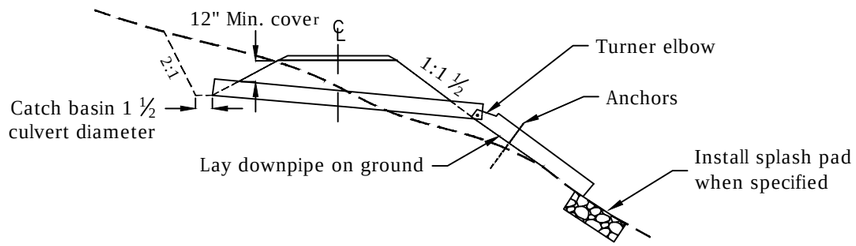
| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 18 | 22 |

## CULVERT TYPES

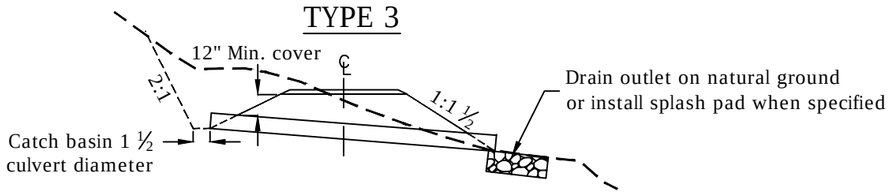
### TYPE 1




### TYPE 2

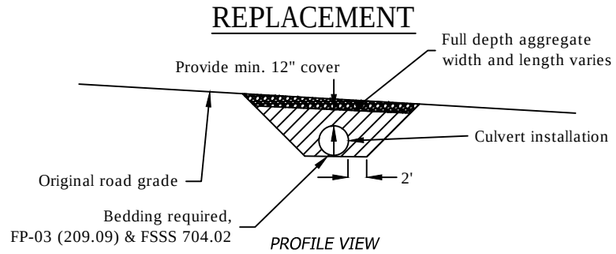



### TYPE 3



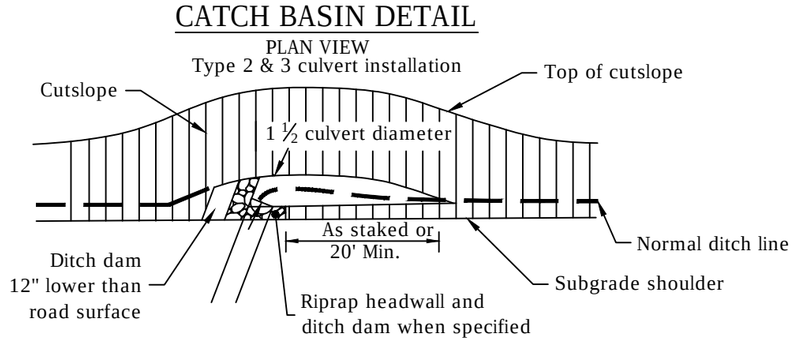

Some installations of culverts may require additional excavation below grade line.

## CULVERT SURFACE ROCK REPLACEMENT



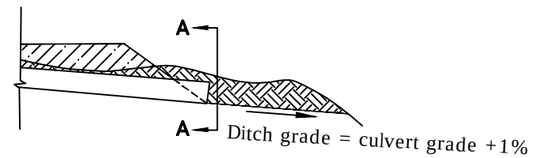

Note: Top width dimension is 12' unless noted otherwise

## CATCH BASIN DETAIL

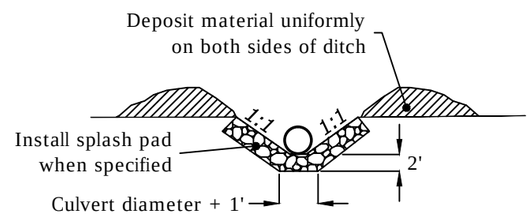



Drawings not to scale

## CULVERT OUTLET DITCH

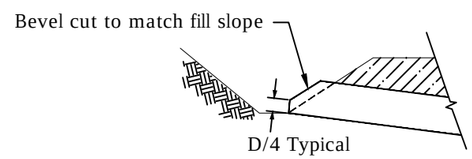



## CULVERT OUTLET DITCH SECTION A-A



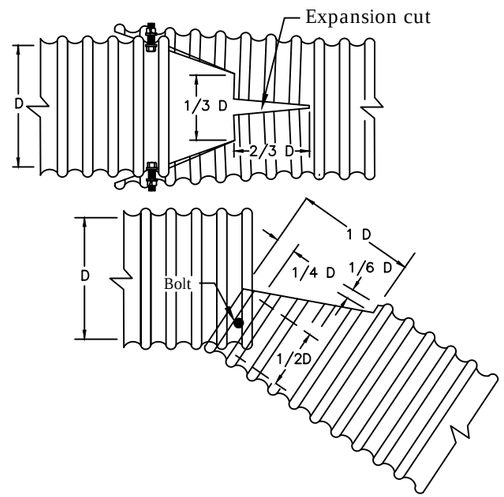

Note: Place mulch on berm

## PARTIAL BEVELED INLET DETAIL

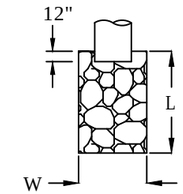



Note: Bevel culverts as specified

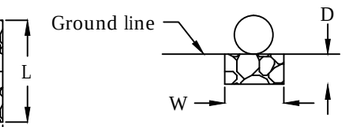
## TURNER ELBOW DETAILS FOR PLASTIC PIPE



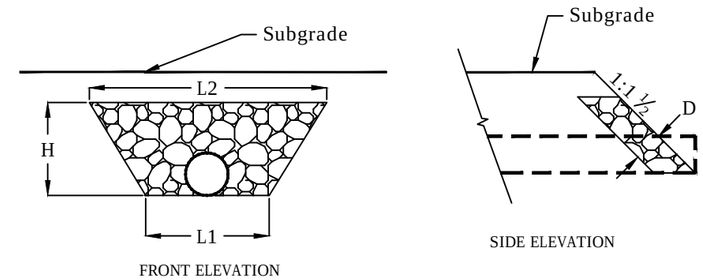

## SPLASH PAD PLAN VIEW



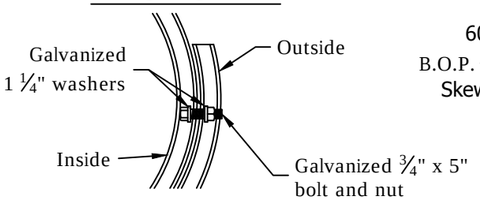

## SPLASH PAD ELEV. VIEW



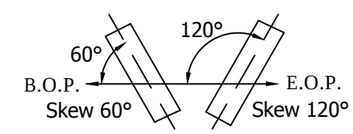

## RIPRAP HEADWALL



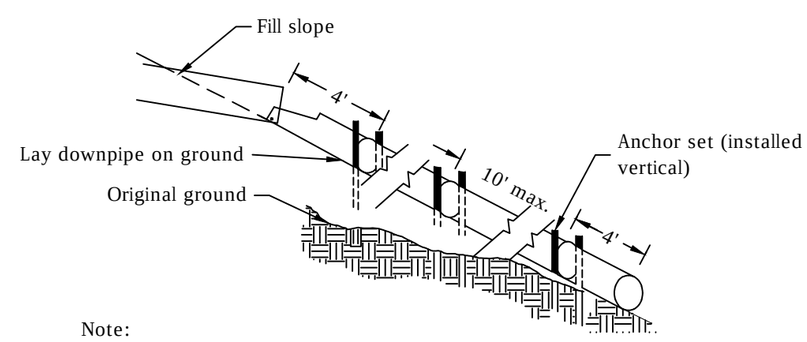

## BOLT DETAIL FOR PLASTIC PIPE




## SKEW DIAGRAM




## ANCHOR DETAILS




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

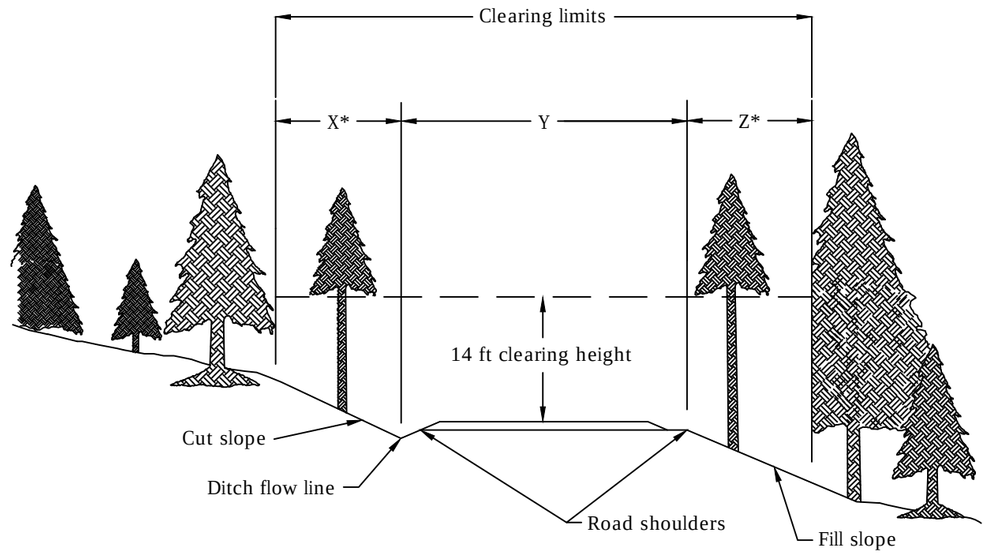
# OSO THIN TIMBER SALE

# DRAINAGE CONSTRUCTION TYPICALS

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 19 | 22 |




| ROAD NUMBER | BEGINNING STATION OR MILE POST | ENDING STATION OR MILE POST | * (FT) |
|---|---|---|---|
| 2234 | 0.00 | 0.53 | 3 |
| 2234 | 3.43 | 5.17 | 3 |
| 2234-217 | 0.00 | 0.33 | 3 |

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

OSO THIN TIMBER SALE

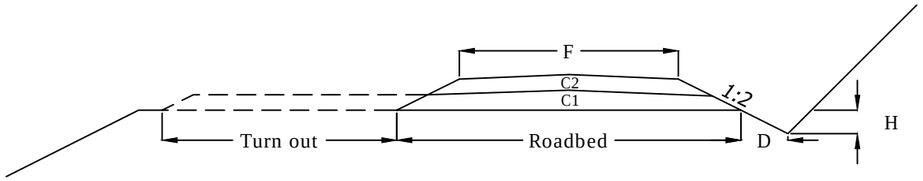
CLEARING AND GRUBBING TYPICAL

PACIFIC NORTHWEST REGION

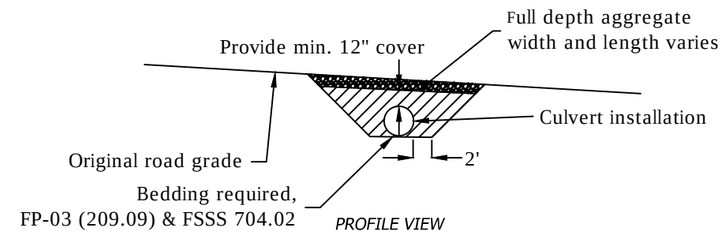
U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 20 | 22 |

## TYPICAL SECTION

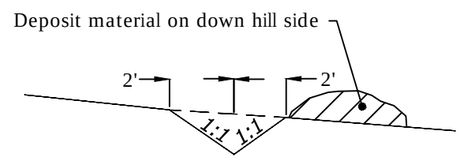



## CULVERT SURFACE ROCK REPLACEMENT




Note: Top width dimension is 12' unless noted otherwise

## LEAD OFF DITCH DETAIL




Note: Place mulch on berm

| 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 AGG | |
| | | | | % | | D | H | F | C1 | C2 | C1 | C2 | V:H | |
| 1003 | 0.00 | 10.13 | D | 3 C | 14.7* | NA | NA | 12 | D | - | 8 | - | 1:2 | For culvert installations. |
| 1003 | 7.10 | 9.02 | D | 3 C | 13.3* | NA | NA | 12 | D | - | 4 | - | 1:2 | 4-inch aggregate placement. |
| 2234-205 | 0.00 | 0.34 | D | 3 C | 14.7* | NA | NA | 12 | D | - | 8 | - | 1:2 | For culvert installation. |
| 2234-217 | 0.00 | 0.33 | D | 3 O | NA | NA | NA | 12* | NA | - | NA | - | NA | For roadway reconditioning and culvert installation. |
| 2234-358 | 0.31 | 0.45 | D | 3 O | NA | NA | NA | 12* | NA | - | NA | - | NA | For culvert installations. |
| 2234-360 | 0.28 | 0.28 | D | 3 O | NA | NA | NA | 12* | NA | - | NA | - | NA | For culvert installation. |
| * Dimensions may be adjusted by the Contracting Officer to fit field conditions. | | | | | | | | | | | | | | |

Drawings not to scale.

OSO THIN TIMBER SALE

RECONSTRUCTION DETAILS

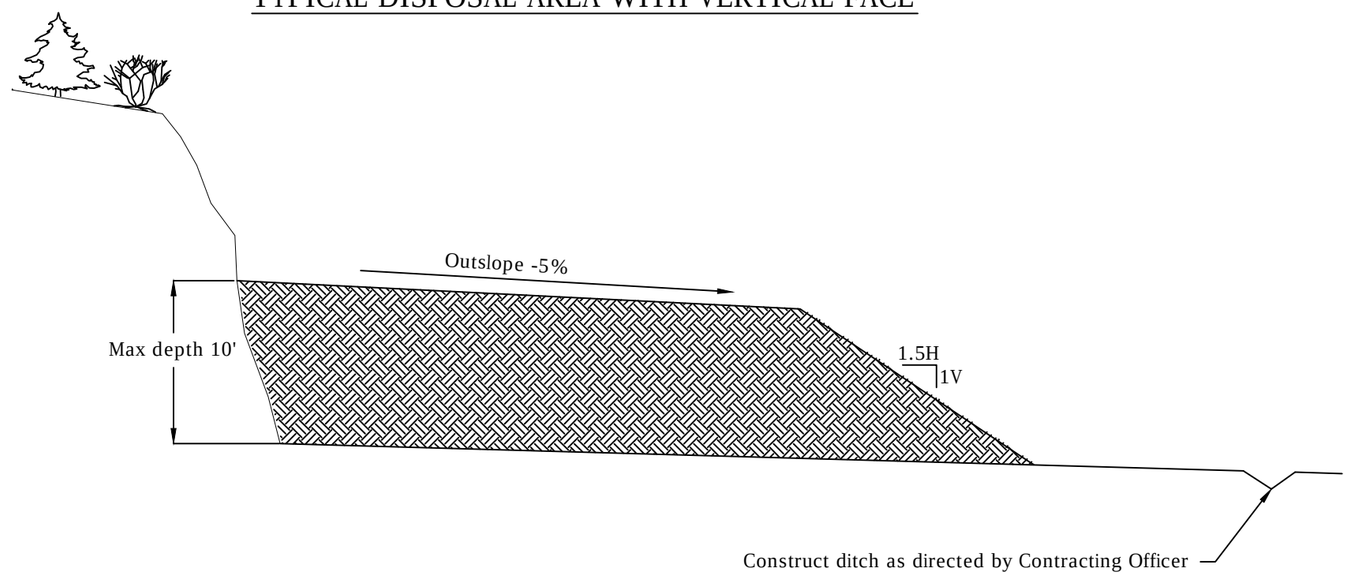
PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

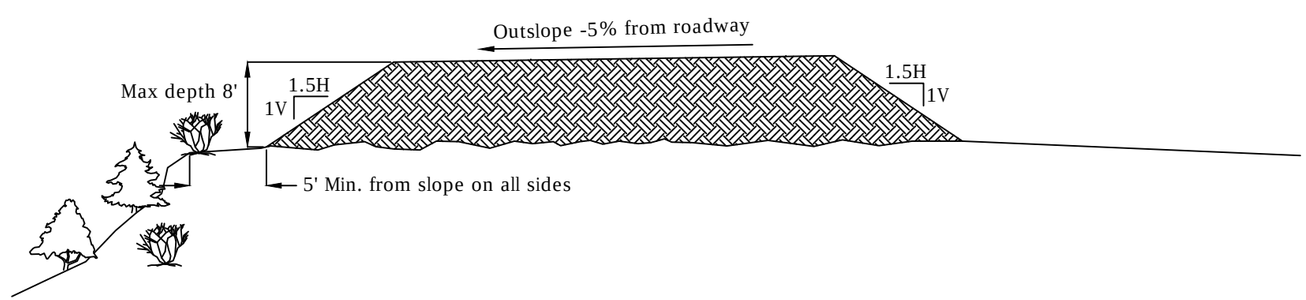
SHEET NUMBER 21

TOTAL SHEETS 22

## TYPICAL DISPOSAL AREA WITH VERTICAL FACE




## TYPICAL DISPOSAL AREA WITH OPEN AREA




NOTES:
1. Disposal area limits to be staked by the Contracting Officer.
2. Mulch the disposal area.

OSO THIN TIMBER SALE

DISPOSAL TYPICALS

PACIFIC NORTHWEST REGION

U.S.D.A. FOREST SERVICE

| SHEET NUMBER | TOTAL SHEETS |
|---|---|
| 22 | 22 |