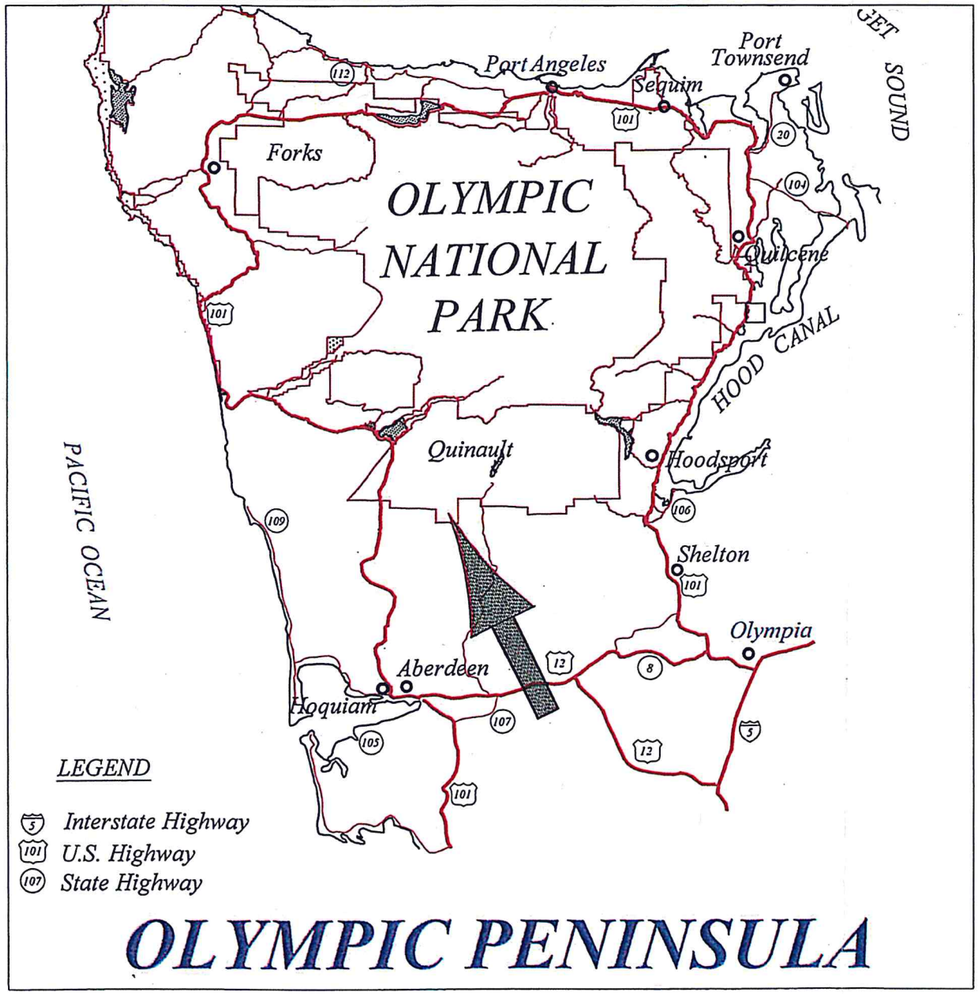
USDA-Forest Service Region 6
Olympic National Forest
RECONSTRUCTION PLANS FOR:

COUGAR TIMBER SALE

Road List			
Road No.	M.P.	Type of work	Units
2200000	8.6 - 12.0	Road Reconstruction	US Customary
2210000	0.00 - 6.00	Road Reconstruction	US Customary
2210015	0.00 - 0.74	Road Reconstruction	US Customary
2210018	0.00 - 0.04	Road Reconstruction	US Customary
2210040	0.00 - 0.25	Road Reconstruction	US Customary
2210060	0.00 - 0.23	Road Reconstruction	US Customary
2210072	0.00 - 0.74	Road Reconstruction	US Customary
2210073	0.00 - 0.12	Road Reconstruction	US Customary



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Portions of Forest Roads 2210018 (Stations 0+00 to 2+00), 2210040 (Stations 0+00 to 5+00) and 2210072 (Stations 3+00 to 10+00) exceed grades of 20 percent. To comply with Washington State Law and Timber Sale contract provisions, provide equipment and measures to accommodate the steep grade or logging equipment or trucks specifically designed and approved by the manufacturer to operate on grades over 20 percent. In addition install and maintain traffic control devices, install & maintain road surfacing and implement suitable traffic control plans & communications plans to provide safe operations during all phases of construction and timbersale operations.

DESIGNED BY:

NAME	TITLE	DATE
[illegible]	CIVIL ENGR. TECH.	05/12/2015

APPROVED FOR TECHNICAL ADEQUACY:

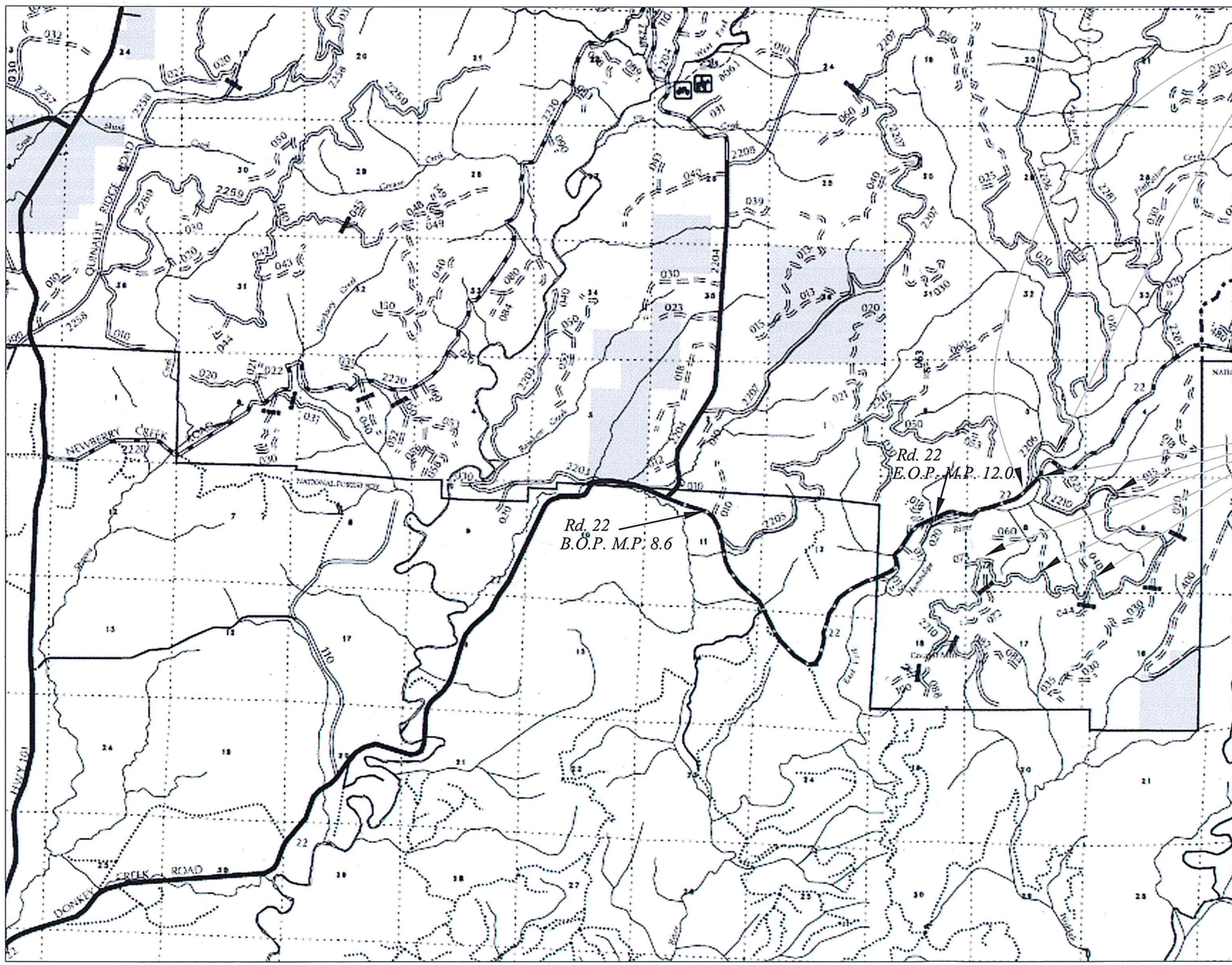
NAME	TITLE	DATE
Shannon R Henriquez		5/14/15

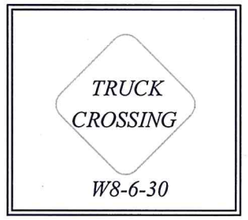
RECOMMENDED BY:

NAME	TITLE	DATE
[illegible]		5/14/15

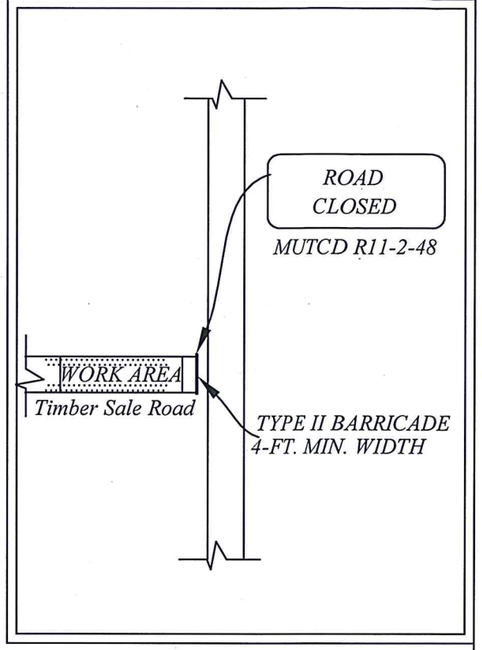
APPROVED BY:

NAME	TITLE	DATE
[illegible]	District Ranger	5/15/15

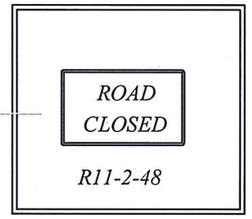




NOTE:
Signs, locations, and installation details per MUTCD (Current Edition)



PROJECT LOCATIONS



NOTE:
Signs, locations, and installation details per MUTCD (Current Edition)

TRAFFIC CONTROL PLAN FOR ROAD CLOSURE

1) Notify CO 10 days before road closure under Supplemental Specification 156.05. Operations at all other times will accommodate traffic.

2) Traffic control devices shall be maintained for duration of closure.

3) All signs shall conform with MUTCD Sections 2A-11, through 2A-16, 6B-1, and 6B-2 of the Current Edition.

4) Post and maintain R11-2-48 sign on road 2210015, 2210040, 2210060, 2210072 & 2210073 at the beginning of the project.

5) Post and maintain W8-6-30 on FSR 22, 500' on either side of the FSR 2210 reconstruction for the duration of the construction.

Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
USDA - Forest Service - R6	Olympic	Pacific	Cougar Timber Sale Road Reconstruction	Vicinity Map & Traffic Control Plan	2 Of 16

ESTIMATE of QUANTITIES

Project Name: Cougar Timber Sale.			2200000	2210000	
		MP-BOP	8.6	0.00	
		MP-EOP	12.0	6.0	
ITEM NO.	DESCRIPTION	PAY UNIT	QUANTITIES	QUANTITIES	REMARKS
15101	Mobilization	Lump Sum	1	1	Includes all work needed to access sites. Cleaning of all equipment is required prior to entering National Forest Land.
15713	Soil Erosion & Pollution Control	Lump Sum	1	1	Maintenance of erosion control devices is an indirect cost to this pay item.
15721	Temporary Water Bars	Each		1	Install Rubber Razor Bar, see details on sheet 8 of 16.
20105	Clearing & Grubbing, Disposal of Tops & Limbs F, Logs F, Stumps F	Lump Sum		1	
20401	Roadway excavation, Compaction Method A, Finished Method A	Cubic Yard	120	600	**22 Rd.** - Unsuitable material to be disposed of at M.P. 12.4 on rd. 2200000 at an area designated by the C.O. Asphalt shall becomes the property of the Purchaser, and will be disposed of off National Forest Land. **High Voltage power line** are buried in the roadway fill. Call 811 to request power line locating before digging and coordinate protection of power line with Grays HarborPUD at 1-800-562-7726. **2210 Rd.** - Unsuitable material to be disposed of at M.P. 4.9 on rd. 2210000 or at an area designated by the C.O.
25101	Placed Riprap, Class 1	Cubic Yard		535	Commercial Source. Materials for Curving Widening. Grading and shaping and rolling are indirect costs to this pay item.
25104	Keyed Riprap, Class 4	Cubic Yard		115	Riprap shall be commercial source, machined placed, Angular & weed free. Geo-textile fabric is an indirect cost to this pay item. 65 CY's for M.P. 0.2 see sheet 9 of 16, and 50 CY's for M.P. 0.7 see sheet 12 of 16.
30322	Road Reconditioning, Compaction Method B	Mile	0.1	6.0	Opening road and removing road closure are an indirect cost to this pay item. Roller compaction as specified in subsection 322.05. Scarification will be required.
32203	Aggregate Base, Grading D, Compaction Method B	Cubic Yard	505	1010	Commercial Source. Grading and shaping are indirect costs to this pay item. Roller compaction as specified in subsection 322.05.
60501	Underdrain System	Foot		625	Material shall be 6 inch corrugated polyethylene drain tubing conforming to AASHTO 252 Type CP with a Fabric sleeve. Grandular Backfill shall be coase aggregate as in specification 703.03 (a)(1 Inch minus drain rock) and is a indiect cost to this pay item. Backfill shall be 2 C.Y. / 100 feet of pipe for a total of 15 C.Y.s.
62530	Seeding & Mulching, Dry Method	Lump Sum	1	1	Seed will be government furnished. Apply seed @ 15 lbs/Ac and mulch at 4000 lbs/ Ac. Notify F.S. 7 days prior to use. Supply Weed free Certification for Mulch.

ESTIMATE of QUANTITIES

Project Name: Cougar Timber Sale.			2210015	2210018	2210040	2210060	2210072	2210073	
		MP-BOP	0.00	0.00	0.00	0.00	0.00	0.00	
		MP-EOP	0.74	0.04	0.25	0.23	0.74	0.12	
ITEM NO.	DESCRIPTION	PAY UNIT	QUANTITIES	QUANTITIES	QUANTITIES	QUANTITIES	QUANTITIES	QUANTITIES	REMARKS
15101	Mobilization	Lump Sum	1	1	1	1	1	1	Includes all work needed to access sites. Cleaning of all equipment is required prior to entering National Forest Land.
15401	Contractor Testing	Lump Sum	1				1		Testing is required on all pipe installation.
15708	Check Dams	Each	12						See sheet 7 of 13 for details. Class 1 Clean Riprap is an indirect cost to this pay item.
15713	Soil Erosion & Pollution Control	Lump Sum	1	1	1	1	1	1	Maintenance of erosion control devices is an indirect cost to this pay item.
15721	Temporary Water Bars	Each	1						Install Rubber Razor Bars, see sheet 7 of 13.
20105	Clearing & Grubbing, Disposal of Tops & Limbs F, Logs F, Stumps F	Lump Sum	1	1	1	1	1	1	
30322	Road Reconditioning, Compaction Method B	Mile	0.74	0.04	0.25	0.23	0.74	0.12	Opening road and removing road closure are an indirect cost to this pay item. Roller compaction as specified in the subsection 322.5. Ditchout is an indirect cost to this pay item.
32203	Aggregate Base, Grading D, Compaction Method B	Cubic Yard	705	35	270	300	335	55	Commercial Source. Grading and shaping are indirect costs to this pay item. Roller compaction as specified in subsection 322.05.
32218	Screened Aggregate Grading Q, Compaction Method B	Cubic Yard					100	125	Commercial Source. Grading and shaping are indirect costs to this pay item. Roller compaction as specified in subsection 322.05. See sps 703.05 (c) Table 703-16.
60201	24 In. Pipe Culvert	Foot	40				120		Bands, bedding and Down Pipes are indirect to this pay item. Compaction Testing is required. Riprap for headwall & apron is indirect to this pay item. Culverts shall becomes the property of the Purchaser and will be disposed of off National Forest Land.
60708	Cleaning Culverts In Place	Each	10		2				Clean pipe inlet and outlet as specified in the work list.
62530	Seeding & Mulching, Dry Method	Lump Sum	1	1	1	1	1	1	Seed will be government furnished @ 15 lbs/Ac. Notify F.S. 7 days prior to use.

Note: Pipe material can be galvanized CMP with a Turner Elbow for a Downspout or Smooth bore Plastic with a full plastic elbow for a corrugated Downspout.

GENERAL NOTES:

1) *Should weather conditions during project operations generate and transport substantial sediment to the stream channel, cease operations until the weather conditions improve.*

2) *An erosion control plan shall be submitted by the Purchaser per Specification 15713. The erosion control plan shall include all necessary drawings and documentation to describe the Purchaser's ability to prevent sediment from reaching a live stream.*

3) *Item 62530, seed shall be applied prior to straw mulch. Seed will be furnished by the government and applied at a rate of 15 lbs/Acre. Mulching must also be certified weed free straw or mulch. Mulch at the rate of 4000 lbs per acre. Seed and mulch in accordance with Specification 625 all areas disturbed by construction activities.*

4) *For Riprap, utilize rocks found on site during excavation if it meets specification.*

5) *All areas that have been excavated and disposal sites shall be sloped to drain, seeded and mulched.*

6) *Have a hazardous spill clean-up kit on site available during equipment operation.*

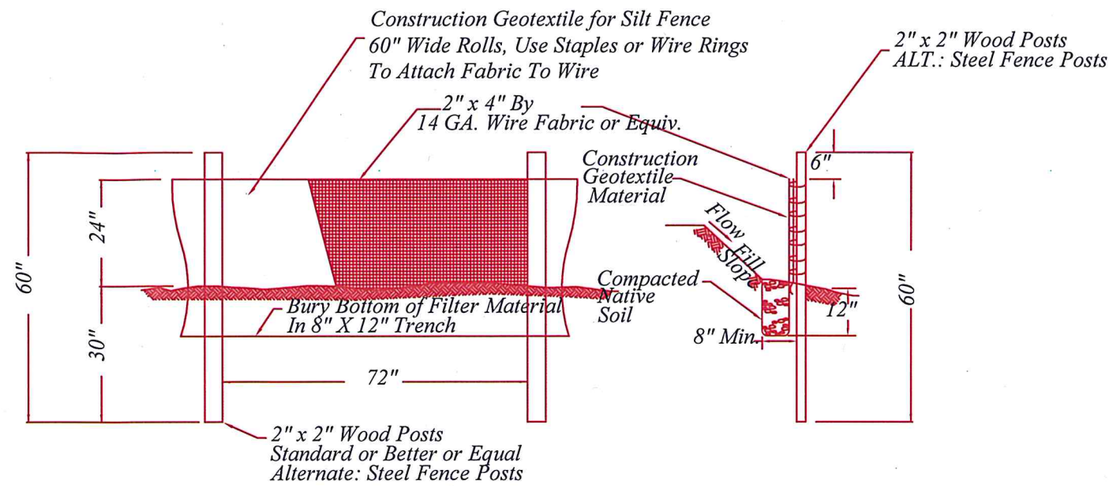
7) *Merchantable timber removed during roadway cleaning operations shall be decked adjacent to roadway, decking areas shall be located by the CO. Utilizations standards are: all Douglas Fir, Hemlock, other coniferous species and Red Alder that are 12 feet long and a minimum 6 inch diameter inside the bark at the small end.*

8) *Clearing and Brushing - Trim tree branches that extend over the road surface and shoulders to attain a clear height of 15 feet from top of cut to toe of fill.*

9) ***Rd. 22 - High Voltage Power Lines** are Buried in the roadway fill. Call 811 to request power line locating before digging and coordinate protection of the power line with Grays Harbor PUD at 1-800-562-7726. Call well in advance prior to excavation for line locating and PUD response time. Delay time for locating, coordinating and protection of power line before and during work are an indirect cost to pay item 20401. Plan accordingly.*

TEMPORARY EROSION CONTROL

DETAILS



SILT FENCE STAKING DETAIL
NOT TO SCALE

NOTE:

1) *Silt fence shall be installed at the locations where necessary to prevent silt runoff.*

2) *Minor grading may be utilized in lieu of silt fences at some locations to prevent silt runoff from leaving the project site. Work shall be an indirect cost to other items.*

3) *Silt fence joints shall be minimized. When neccessary, silt fence shall be spliced together only at a support post, with a minimum of 24" overlap.*

4) *Repair of damaged silt fence and removal of silts against fence shall be an indirect cost to soil erosion and pollution control.*

5) *Silt fence shall be installed concurrently with clearing and grubbing.*

6) *Work shall be done under dry conditions. A contingency plan will be submitted prior to beginning construction activities, along with an erosion control plan.*

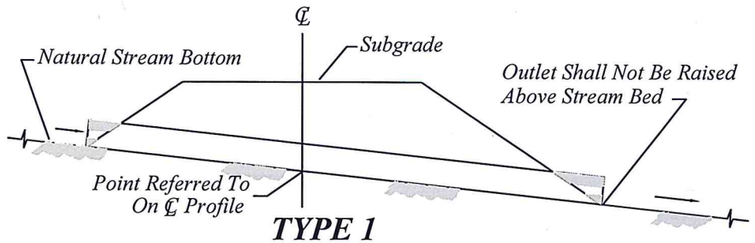
7) *Contractor shall protect existing vegetation and shall confine excavation to within the clearing limits.*

MATERIALS:

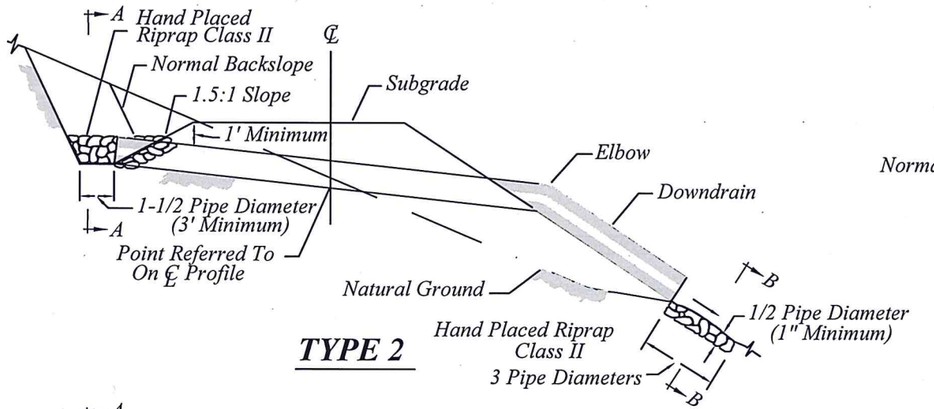
1) *Construction geotextile for silt fence shall be Type V - C*

CULVERT CONSTRUCTION DETAILS

NOT TO SCALE



TYPE 1



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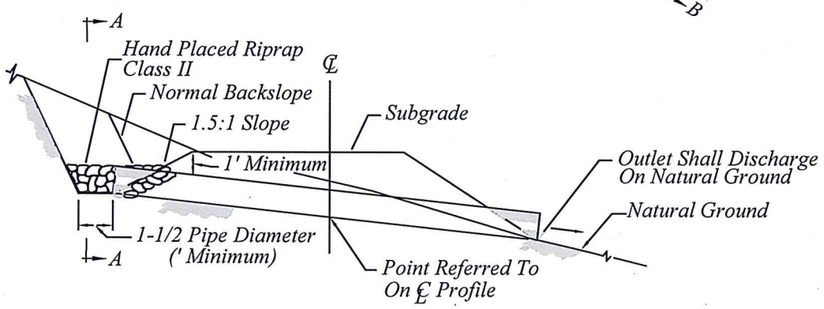

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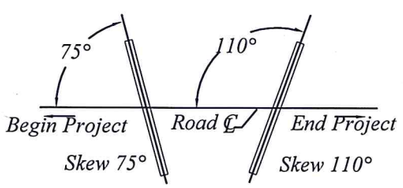
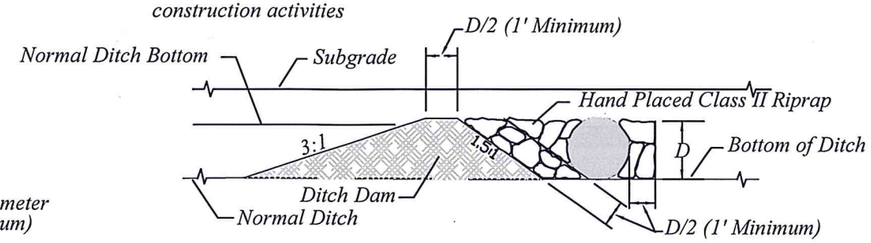


SKEW DIAGRAM

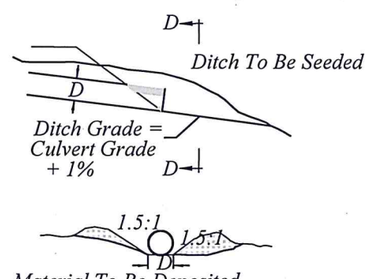
GENERAL NOTES

1) All downdrains 36" and larger shall be half buried.
2) All bands shall be 12" minimum width .
3) Dimple bands shall not be used on elbows or down drains.
4) All steel culverts shall be galvanized coated.
5) Riprap quantities shall be incidental to pipe installation unless a pay item is designated in the Schedule of Items.
6) Riprap headwall or apron may be required on all 3 types of culvert installation if listed in the work list.
7) A copy of the M.O.U. / H.P.A. will be onsite during all construction activities



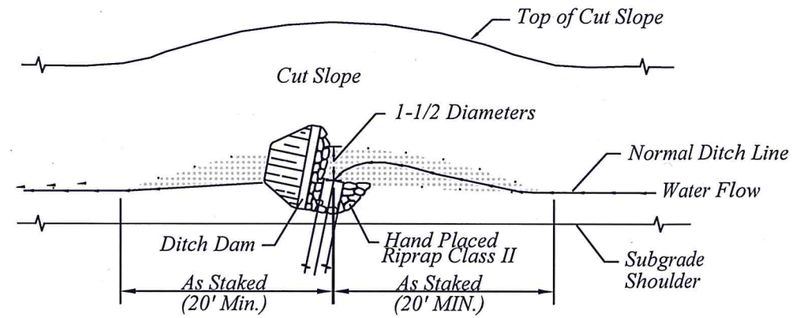
SECTION A-A

Catch Basin Detail
Type 2 & 3 Culvert Installation



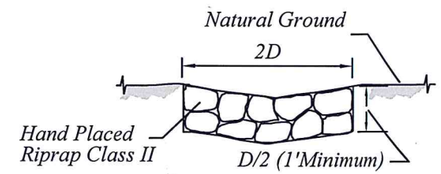
SECTION D-D

Outlet Ditch Details



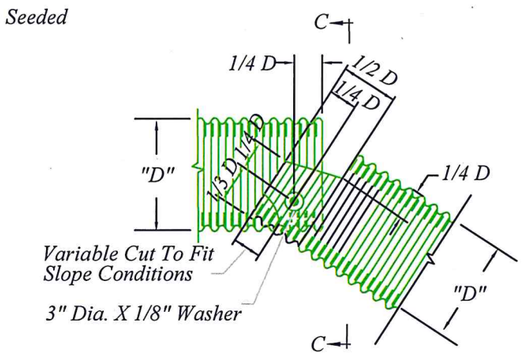
PLAN VIEW

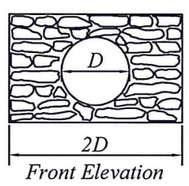
Type 2 & 3 Culvert Installations
Catch Basin Detail



SECTION B-B

Outlet Apron Detail



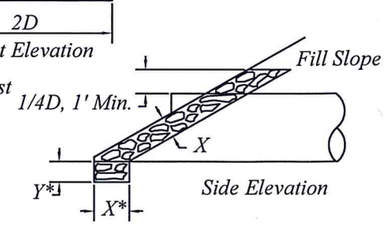


Front Elevation

Note: In narrow channels, adjust riprap to stream

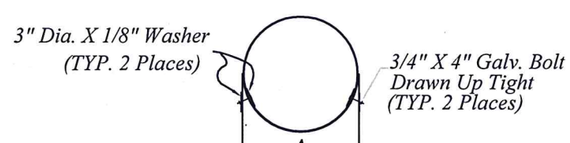
*Varies w/ Pipe D

D	X	Y
18" - 24"	12"	0
30" - 60"	12"	12"
60" - 96"	18"	18"
MORE THAN 96"	24"	24"



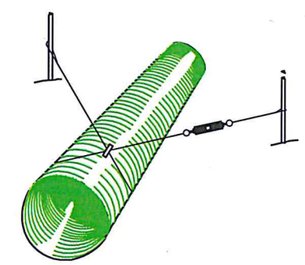
Side Elevation

HAND-PLACED RIPRAP HEADWALLS



SECTION C-C

TURNER ELBOW DETAILS



SPECIFICATIONS FOR ANCHORS

1) Anchors are not required for the first 20' of down drains.
2) One anchor shall be required for each additional 20' or less.
3) Anchor posts shall be 6' galvanized steel fence posts. Posts shall be set 3' or more in the ground.
4) Anchor cable shall be 3/8" wire rope.
5) Cable clamps shall be galvanized steel.
6) Turnbuckles shall be 12" galvanized steel.

CULVERT ANCHOR DETAILS

Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
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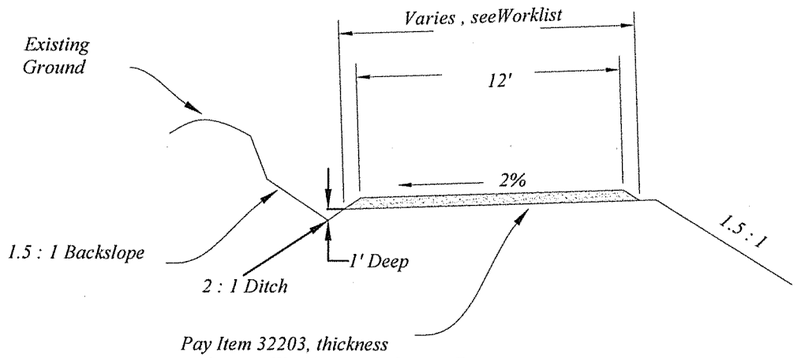
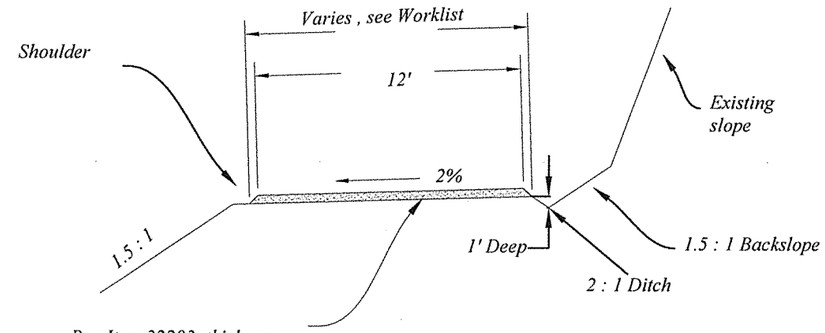


Note: Minimum 2% slope if road crowning, inslope, or outslope is required.

TYPICAL INSLOPE GRADING DETAIL - SINGLE LANE

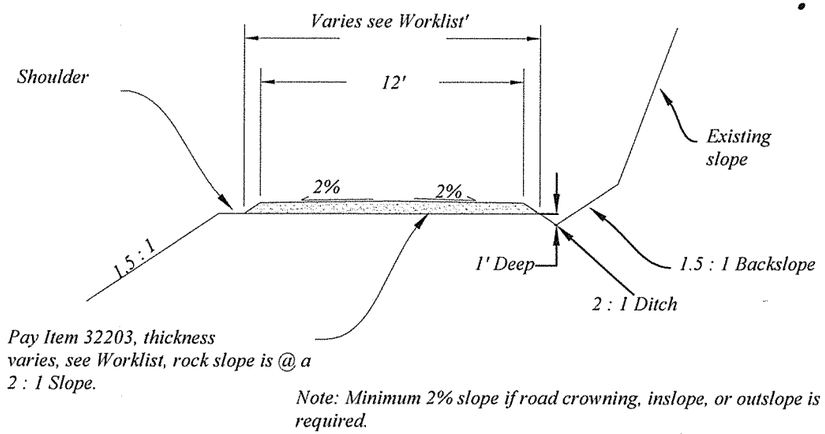


Note: Minimum 2% slope if road crowning, inslope, or outslope is required.

TYPICAL OUTSLOPE GRADING DETAIL - SINGLE LANE

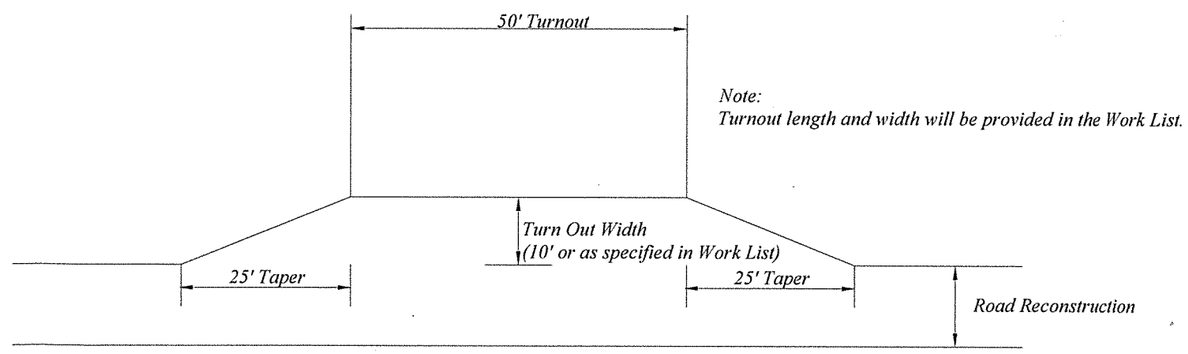
Note:
Pay Item 30322, Roadbed Reconditioning.

- Repair soft and unstable areas to existing grade
- Roller compaction required, See Subsection 204.11



Note: Minimum 2% slope if road crowning, inslope, or outslope is required.

TYPICAL CROWN GRADING DETAIL - Single Lane



Note:
Turnout length and width will be provided in the Work List.

ROAD TURN OUT DETAIL

Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
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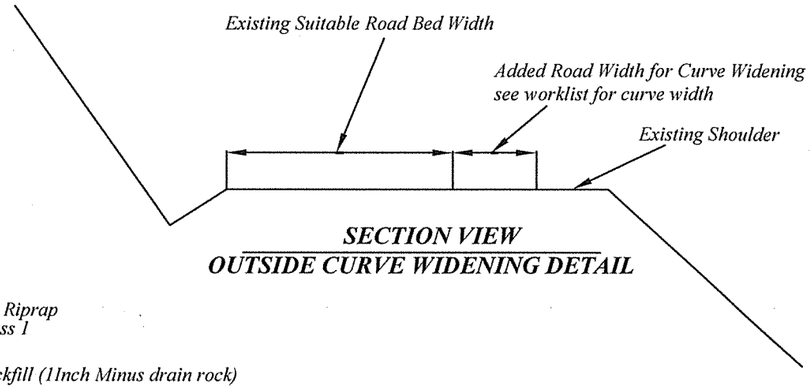
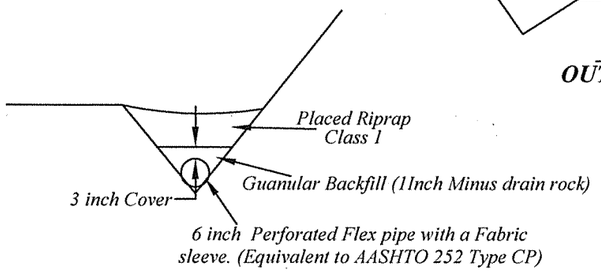
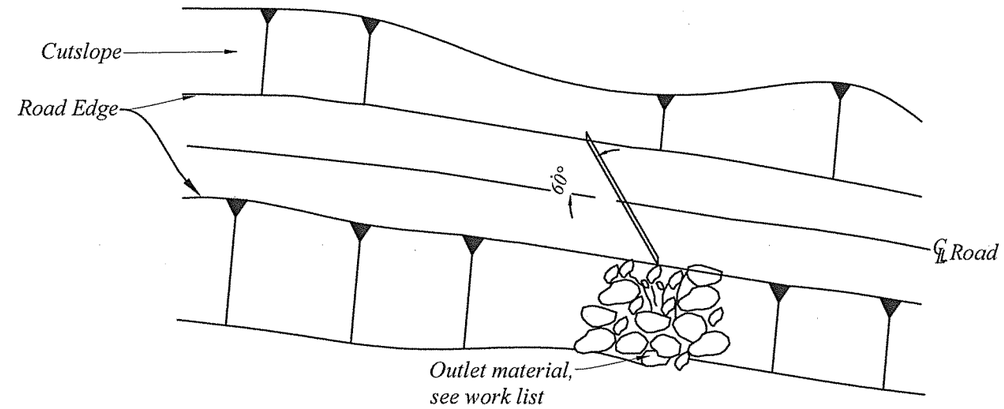


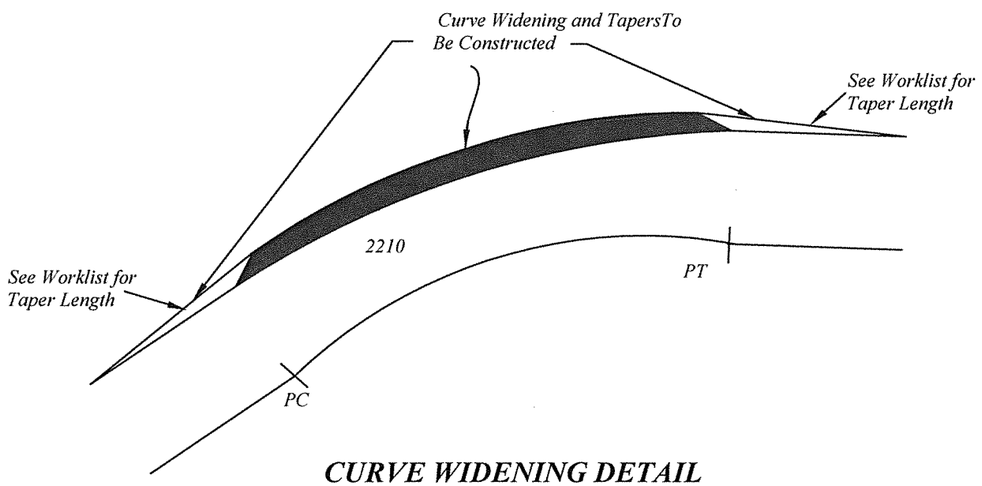
SECTION VIEW
OUTSIDE CURVE WIDENING DETAIL



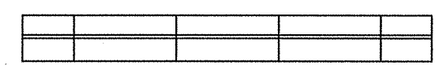
SECTION VIEW
6" PERFORATED FLEX PIPE DETAIL



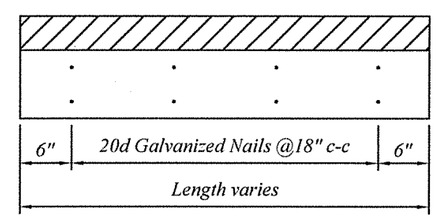
PLAN VIEW
RUBBER RAZOR BAR



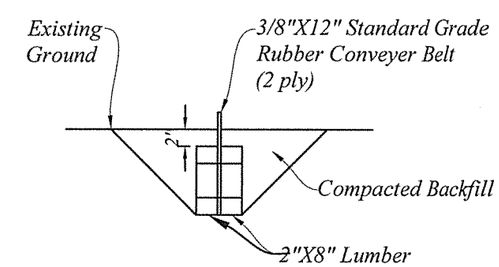
CURVE WIDENING DETAIL



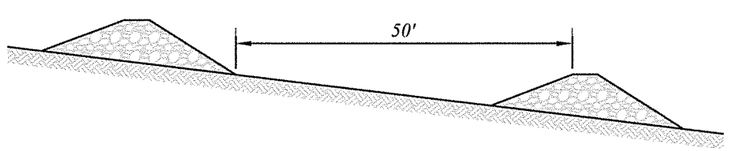
PLAN VIEW



ELEVATION VIEW



SYNTHETIC WATER BAR SECTION
NOT TO SCALE



DAM SPACING
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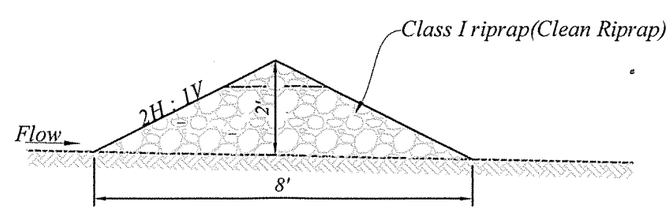

DITCH DAM PROFILE VIEW
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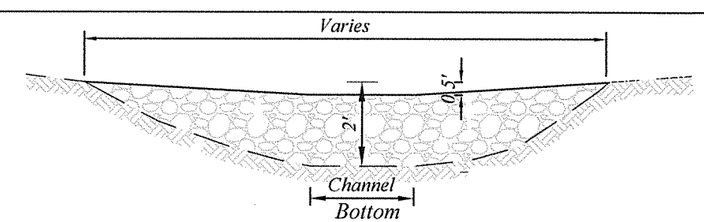
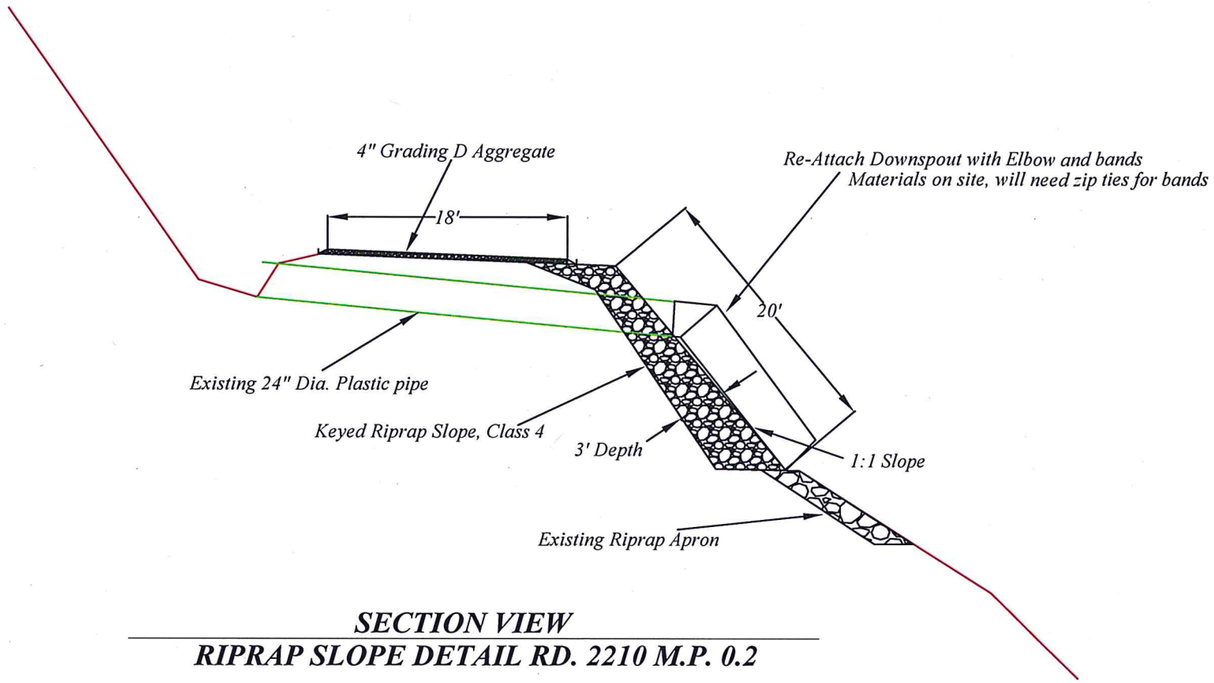
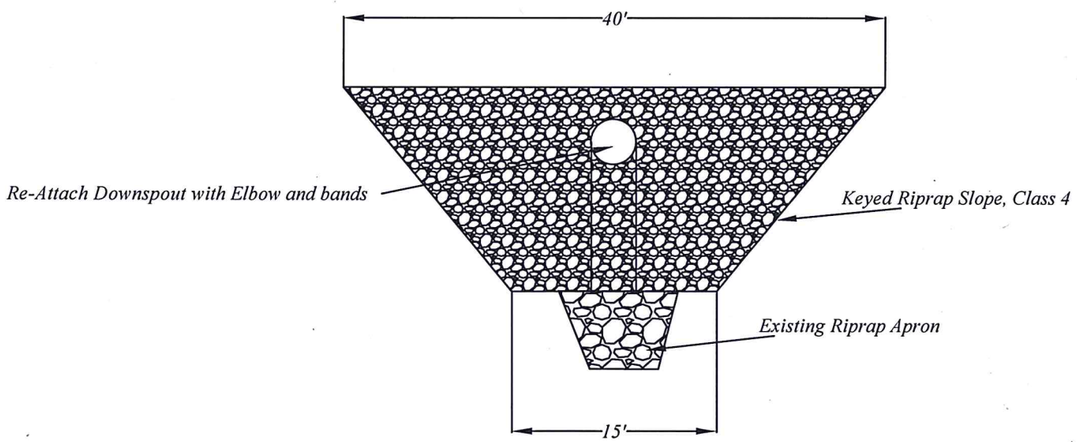


CROSS SECTION
NOT TO SCALE

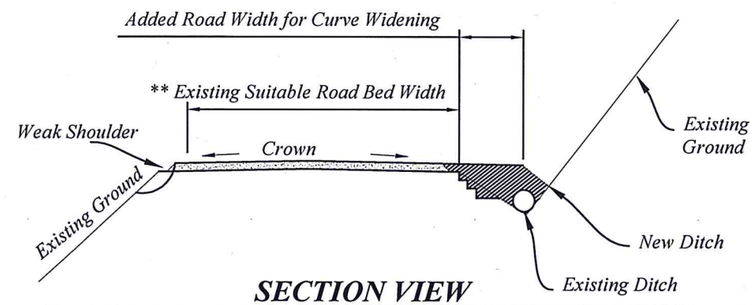
Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
USDA - Forest Service - R6	Olympic	Pacific	Cougar Timber Sale	Typical Curve Widening, Rubber Razor Bar & Check Dam Details	8 of 16



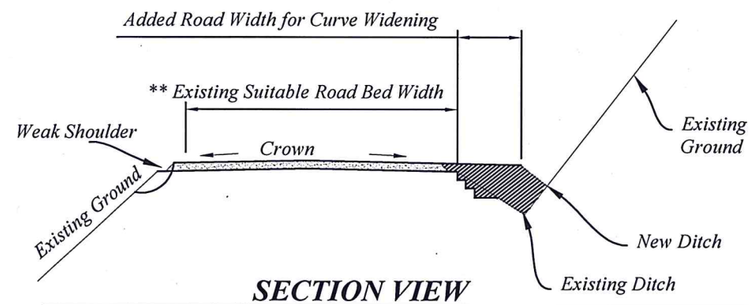
SECTION VIEW
RIPRAP SLOPE DETAIL RD. 2210 M.P. 0.2



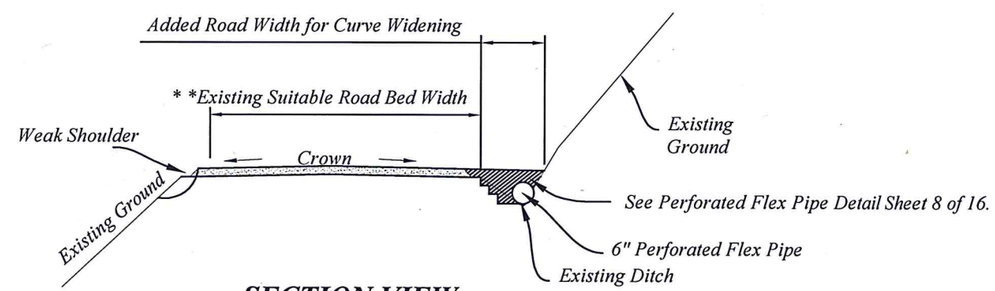
SIDE VIEW
RIPRAP SLOPE DETAIL RD. 2210 M.P. 0.2



SECTION VIEW
CURVE WIDENING UPHILL, DITCH SHIFT AND CULVERT OPTION



SECTION VIEW
CURVE WIDENING UPHILL, DITCH SHIFT OPTION



SECTION VIEW
CURVE WIDENING UPHILL, CULVERT OPTION

Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
USDA - Forest Service - R6	Olympic	Pacific	Cougar Timber Sale	FSR 2210000 Recocstruction Details	9 Of 16

STATION	REQUIREMENT	Rock Quan. (C.Y.)		CULVERT INSTALLATION / IMPROVEMENTS		
	High Voltage Power Lines *are Buried in the roadway fill. Call 811 to request power line locating before digging and coordinate protection of the power line with Grays Harbor PUD at 1-800-562-7726. Call well in advance prior to excavation for line locating and PUD response time. Delay time for locating, coordinating and protection of power line before and during work are an indirect cost to pay item 20401. Plan accordingly.*	Pit Run	Agg. Surf.	Exc.	Length (Ft)	Riprap (Sq.Yd.)
	FSR 2200000 Work List					
M.P. 8.6	Cut and remove 100 'of asphalt by 16' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		35	10		
M.P. 9.0	Cut and remove 225 'of asphalt by 16' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		75	20		
M.P. 9.15	Cut and remove 110 'of asphalt by 17' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		40	12		
M.P. 9.3	Cut and Remove 90' of asphalt by 14' wide. Replace with 6" of Crushed Aggregate full width and roller compact.		30	8		
M.P. 10.2	Cut and remove 100' of asphalt by 14' wide. Replace with 6" of Crushed Aggregate full width and roller compact.		30	8		
M.P. 10.3	Cut and remove 150 'of asphalt by 14' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		45	12		
M.P. 10.35	Cut and remove 105 ' length of asphalt by 14' wide. Replace with 6" of Crushed Aggregate full width and roller Compact.		35	9		
M.P. 10.4	Cut and remove 105 ' length of asphalt by 16 wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		35	11		
M.P. 10.6	Cut and remove 116 'of asphalt by 14' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		35	10		
M.P. 10.7	Install 4 Carsonite post with reflective decals along the road edges. .2 on each side.)					
M.P. 11.0	Scarify, Blade and Shape for 450' length x 18' width and Roller Compact. Place 6 " of Aggregate for full width for the first 200'and roller compact.		75			
M.P. 11.5	Cut and remove 75 'of asphalt by 18' wide. Replace with 6" of Crushed Aggregate full Width and roller Compact.		30	9		
M.P. 12.0	Site Surface Repair: Scarify, Blade and Shape for 100' length x 18' width and Roller Compact. Place 6 " of Aggregate for full width and roller compact.		40	11		

Unit / Region : USDA - Forest Service - R6

National Forest : Olympic

District : Pacific

Project Name : Cougar Timber Sale

Sheet Name : FSR 2200000 Work List

Sheet Number : 10 of 16

Unit / Region : USDA - Forest Service - R6

National Forest : Olympic

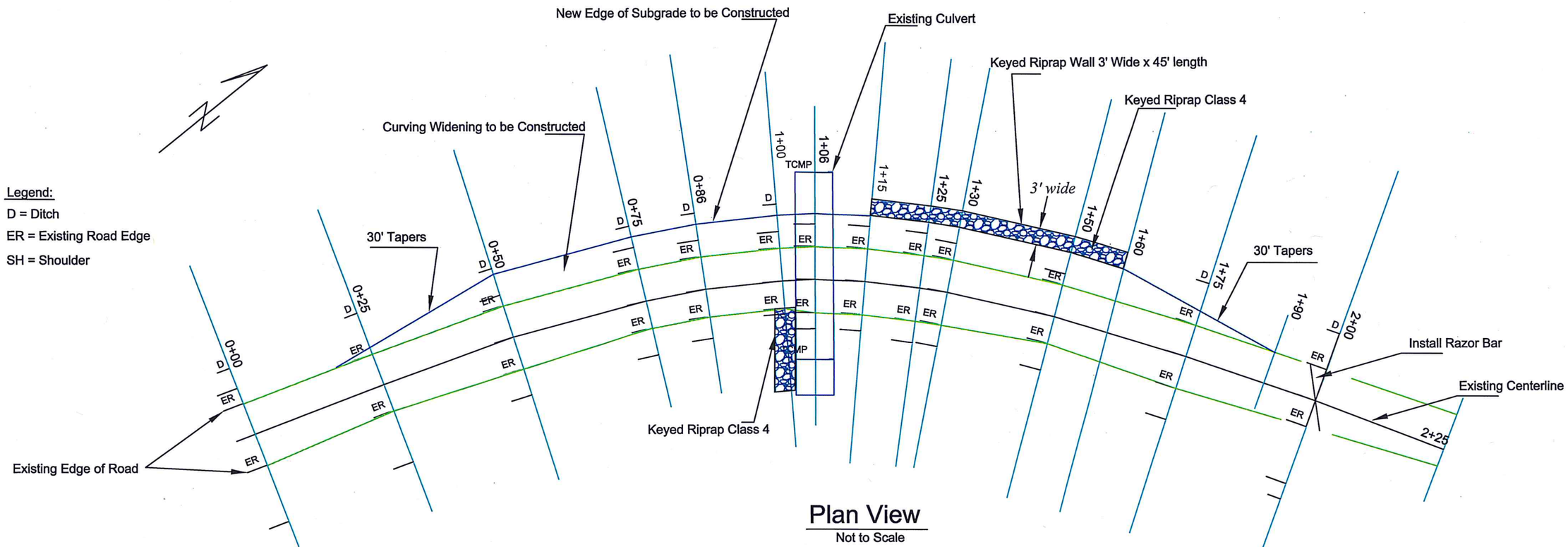
District : Pacific

Project Name : Cougar Timber Sale

Sheet Name : FSR 2210000 Work List

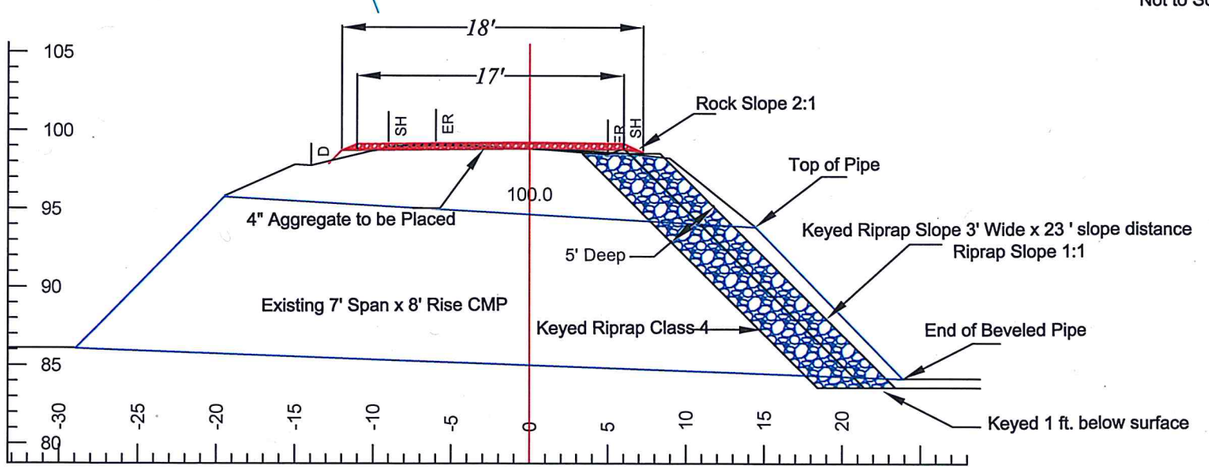
Sheet Number : 11 of 16

STATION	REQUIREMENT	Rock Quan. (C.Y.)		CULVERT INSTALLATION / IMPROVEMENTS		
	NOTE: All Curve Widening will include a 1 foot shoulder and tapers at both ends of the curves to be constructed.	Class 1 Riprap (C.Y.)	Agg. Surf.	6" Flex Pipe (FT)	Add'l Borrow (C.Y.)	Riprap In/Out (C.Y.)
	FSR 2210000 Work List					
M.P. 0.00	Begin Clearing and Grubbing. Begin Blading And Shaping. Begin Placing 4" Aggregate.		980			
M.P. 0.2	Curve Widening - Existing Road Width is 12 feet. Increase road width to 18 feet for Lowboys. Existing 24 Inch Plastic Pipe. Install Riprap Slope as shown in sheet 9 of 16.	50				
M.P. 0.25	Curve Widening - Existing Road Width is 11 feet. Increase road width to 20 feet for Lowboys. Remove vegetation for 80 feet length x 9 feet wide , dispose at waste area as directed by the C.O. Place 3 inch clean Riprap at 1 foot depth over the same area with 50' tapers on each end and roller compact. Seed and Mulch waste area. Place 6" Perforated Flex Plastic Pipe in ditch before covering.*	45		50		
M.P. 0.6	Curve Widening - Existing Road Width is 11 feet. Increase road width to 18 feet for Lowboys. Existing 18 Inch Plastic Pipe, cover inlet with 2 Inch square grate and fill catch basin with 3 inch clean riprap. Continue placing Riprap for 60 feet Length x 7 feet wide for a 1.5 foot Depth with 30' tapers on each end and roller compact. Begin placing 6" Perforated Flex Plastic Pipe 60 after existing pipe in ditch before covering.*	40		60		
M.P. 0.7	Curve Widening - Existing Road Width is 11feet. Increase road width to 17 feet for Lowboy. Existing CMP and Creek. Remove vegetation for 100 feet Length x 6 feet wide and 20 CY of waste Material, dispose of at waste site directed by the C.O. Place 3 inch clean riprap at 2 foot Depth with 30' tapers on each end and roller compact. Install Riprap Wall from Sta 1+15 to 1+60 on the left. Install Erosion Control at the fills slope riprap wall prior to excavation at Sta. 1+00. See Details on Sheet 10 of 14.	60				
M.P. 0.75	Curve Widening - Existing Road Width is 11 feet. Increase Road width to 15 feetfor Lowboys. Remove Vegetation starting 10 feet after pipe for 50 feet length x 5 feet wide , dispose at waste area as directed by the C.O. Place Riprap at 3 feet depth over the same area with 30 taperson each end and roller compact.	40				
M.P. 1.0	End Placing 4" Aggregate					
M.P. 1.3	Curve Widening - Existing Road Width is 15 feet. Increase road width to 22 feet for Lowboys. Existing 24 Inch CMP. Remove vegetation for 200 feet Length x 7 feet wide, dispose at waste site as directed by the C.O. Place 3 inch clean riprap at 1.5 foot Depth, with 30' tapers on each end and roller compact. Begin placing 6" Perforated Flex pipe, 30 feet after the Culvert, in ditch before covering.	90		130		
M.P. 1.4	Curve Widening - Existing Road Width is 15 feet. Increase road width to 20 feet for Lowboys. Existing 18 Inch CMP. Remove vegetation for 80 feet Length x 5 feet wide dispose at waste area as directed by the C.O. Place Riprap for 1.5 foot Depth over the same area with 40' tapers on each end and roller compact. Construct a 1: 1 Ditch with the curve widening. Excavate 1.5 Dia. hole and refill will riprap material.	40				
M.P. 3.3	Curve Widening - Existing Road Width is 16 feet. Increase road width to 22 feet for Lowboys. Remove vegetation for 170 feet length x 6 feet wide , dispose at waste area as directed by the C.O. Place 3 inch clean riprap at 1 foot depth over the same area with 40' tapers on each end and roller compact. Seed and Mulch waste area. Begin placing 6" Perforated Flex Plastic Pipe, 20 before the PC for 40 feet and 30 feet before the PT for 60 feet, in ditch before covering.*	50		90		
M.P. 3.7	Curve Widening - Existing Road Width is 16 feet. Increase road width to 28 feet for Lowboys. Remove vegetation for 150 feet length x 12 feet wide , dispose at waste area as directed by the C.O. Place 3 inch clean riprap at 1 foot depth over the same area with 60' tapers on each end and roller compact. Seed and Mulch waste area.. Begin placing 6" Perforated Flex Plastic Pipe, 30 before the PC for 110 feet and 40 feet before the PT for 70 feet, in ditch before covering.* Remove 600 CY of Excavation for Cuve widening (460 CY at the PC and 140 CY at the PT).	100		180		
M.P. 4.2	Curve Widening - Existing Road Width is 14 feet. Increase road width to 18 feet for Lowboys. Remove vegetation for 85 feet length x 4 feet wide , dispose at waste area as directed by the C.O. Place 3 inch clean riprap at 1 foot depth over the same area with 30' tapers on each end and roller compact. Seed and Mulch waste area. Begin placing 6" Perforated Flex Plastic Pipe, 15 feet before the PC for 115 feet, in ditch before covering.*	20		115		
M.P. 4.8	Place 6" Aggregate for 75 Feet at the Jct. of the 2210072 Road. Blade, shape and Compact according to Specifications.		30			
M.P. 4.9	Existing Turnaround, Possible Waste area on the right.					
M.P. 6.0	End Clearing and Grubbing. End Blading and Shaping.					
	* 6" Perforated Flex Plastic pipe shall be equivalent to AASHTO 252 Type CP pipe with a Fabric sleeve.					



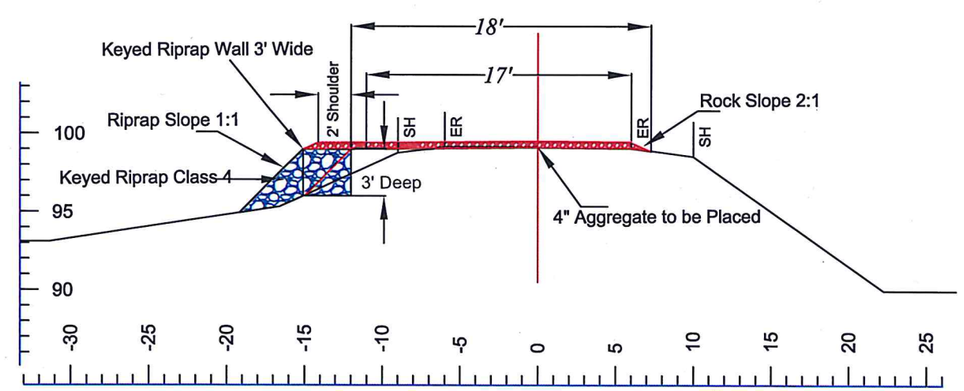
Plan View

Not to Scale



X-Section View

Station 0+95 to 1+05



X-Section View

Station 1+15 to 1+60

Unit / Region :	National Forest :	District :	Project Name :	Sheet Name :	Sheet Number :
USDA - Forest Service - R6	Olympic	Pacific	Cougar Timber Sale	FSR 2210000 M.P. 0.7 Curving Widening Detail	12 of 16

FSR 2210015

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210 M.P. 1.0			
0+00	BOP, Begin reconstruction of FSR 2210015. Begin brushing and clearing, grading and shaping, road reconditioning. 14' Subgrade, Compaction Method C (204.11). Begin crowning roadway and Aggregate Placement 4" depth..	630 AGG.		
0+70	Existing 24" ditch relief culvert, clean inlet and outlet.			
0+90 - 3+80	Install 12 Rock Check Dams in ditch			
1+00	Existing cross ditch, Install Rubber Razor Bar			
4+00	Jct. of Temp. Road Left			
4+30	Install 24" x 40' ditch relief culvert,Skew 120	+5 AGG.	24" x 40'	1/1
6+00	Existing 24" ditch relief culvert, clean inlet and outlet			
7+25 - 7+75	Construct 10' X 50' turnout left w/ 25' tapers.	+10 AGG.		
8+20	Existing 24" ditch relief culvert, clean inlet and outlet			
10+85	Existing 24" ditch relief culvert, clean inlet and outlet			
13+65	Existing 24" ditch relief culvert, clean inlet			
14+70 - 15+20	Construct 10' X 50' turnout left w/ 25' tapers.	+10 AGG.		
16+00	Construct ditchout left			
18+00	Existing 24" ditch relief culvert w/25' Downspout and anchors, clean inlet			
19+75 - 20+25	Construct 10' X 50' turnout left w/ 25' tapers.	+10 AGG.		
21+00	Existing 24" ditch relief culvert, clean inlet			
23+60	3' X 1' Sink hole, dig out and add 3 CY of Aggregate material	+3 AGG.		

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ AGG.	Culvert Size	Riprap In/Out (C.Y.)
25+00	Existing 24" ditch relief culvert			
27+15 - 27+65	Construct 10' X 50' turnout right w/ 25' tapers.	+10 AGG.		
28+70 - 29+20	Construct 10' X 50' turnout left w/ 25' tapers.	+10 AGG.		
30+40	Existing 24" ditch relief culvert w/30'Downspout and anchors, clean inlet			
31+00	End Crown Begin Inslope			
31+25 - 32+25	Construct 10' X 100' turnout left w/ 25' tapers.	+17 AGG.		
33+00	End Inslope Begin Crown			
34+45	Existing 24" ditch relief culvert w/30' Downspout and anchors, clean inlet			
35+00	Jct. of FSR 2210018 on the Left			
37+75	Existing 24" ditch relief culvert w/30'Downspout and anchors, clean inlet			
39+25	EOP , End Reconstruction of FSR 2210015 End Clearing and brushing, grading and shaping, reconditioning and Rock Placement. End Crowning			

FSR 2210018

List 1 of 1

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210015 M.P. 0.66			
0+00	BOP, Begin reconstruction of FSR 2210018. Begin brushing and clearing, grading and shaping, road reconditioning. 14' Subgrade, Compaction Method C (204.11). Begin crowning roadway. Reconstruct Ditch line. Begin placing 4" lift of aggregate Base, Grading D, Compaction Method B (322.05 - refers to 204.11), Max size may be up to 3". Begin Grade greater than 18%.	35 Agg.		
0+30	Closure Berm, Level out and fill in cross ditch.			
1+10	Existing Cross ditch level out and Fill in. Ditch Out Left			
2+00	EOP , End Reconstruction of FSR 2210040 End Clearing and brushing, grading and shaping, reconditioning . End Crowning and Ditch Reconstruction. End Grade greater than 18 %			
2+20	Existing Cross ditch. Do not Disturb.			

FSR 2210040

List 1 of 1

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210 M.P. 3.1			
0+00	BOP, Begin reconstruction of FSR 2210040. Begin brushing and clearing, grading and shaping, road reconditioning. 16' Subgrade, Compaction Method C (204.11). Begin crowning roadway. Reconstruct Ditch line. Begin placing 12" lift of aggregate Base, Grading D, Compaction Method B (322.05 - refers to 204.11). Begin Grade greater than 18%	250 Agg.		
1+00	End 12' Aggregate Base, Begin 6" Aggregate Base and 15' Subgrade with same Compaction.			
1+75	Existing 18" ditch relief culvert, clean inlet			
4+30	Existing 18" ditch relief culvert, clean inlet			
5+00	End Grade greater than 18%.			
9+00	End 6" Aggregate Base.			
11+00 - 12+00	Construct 10' X 50' Turnout Left, w/ 25' Tapers	+10 Agg.		
12+60	Existing Turnaround	+10 Agg.		
13+00	EOP , End Reconstruction of FSR 2210040 End Clearing and brushing, grading and shaping, reconditioning . End Crowning and Ditch Reconstruction.			

FSR 2210072

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210 M.P. 4.8			
0+00	BOP, Begin reconstruction of FSR 2210072. Begin brushing and clearing, grading and shaping, road reconditioning. 14' Subgrade, Compaction Method C (204.11). Begin insloping roadway. Begin Placing 6" lift of aggregate Base, Grading D, Compaction Method B (322.05 - refers to 204.11)	315 Agg.		
2+35	Install 24" ditch relief culvert, Skew 110°, Install 20' downpipe Begin 2:1 Ditch Reconstruction		24" x 40'	1/1
3+00	Begin Grade greater than 18 %			
3+25 - 3+75	Construct 10' X 50' turnout right w/ 25' tapers.	+10 Agg.		
4+50	Install 24" ditch relief culvert, Skew 110°. Install 20' downpipe.		24" x 40'	1/1
6+00	End Insloping. Begin Crowning			
6+25	Ditch out right to daylight			
6+35	Ditch out Left			
10+00	End Grade greater than 18%.			
10+70	Ditch out right to daylight			
11+40	Ditch out right to daylight			
12+00	End 6" Aggregate Base			
12+70	**Existing Forest Service Gate**			
15+00	Ditch out right to daylight			
15+30	Ditch out left to daylight			
16+40	Jct. to old Cougar Pit			
18+25 - 18.75	Construct 10' X 50' Turnout Left	+10 S.A.		
19+00	Land Survey Monument, Do Not Disturb. Ditch out left to daylight			

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
19+50	Crack in right side of Road.Add Pit Run Aggregate.	+10 S.A.		
20+00	Temp. Rd. Intersection			
20+25	Crack in right side of Road.Add Pit Run Aggregate.			
24+50	Ditch out both sides to daylight			
25+60	Ditch out both sides to daylight			
27-25 - 27+75	Construct 10' X 50' turnout left w/ 25' tapers.	+10 S.A.		
29+30	Ditch out left to daylight.			
30+75 - 31+25	Construct 10' X 50' turnout left or right w/ 25' tapers.	+10 Agg.		
31+75 - 33+00	Pit Run aggregate to fill in Grubbed Tree Stumps along Road Edge.	20 S.A.*		
32+00 - 32+70	Road Edge Slumping add Pit Run Aggregate	+20 S.A.		
34+40	Construct Turnaround Left	+10 S.A.		
35+00	Road Edge Slumping add Pit Run Aggregate	+20 S.A.		
35+50	Change to 4" Pitrun Aggregate			
39+00	EOP , End Reconstruction of FSR 2210072 End Clearing and brushing, grading and shaping, reconditioning and Crowning.			

FSR 2210060

List 1 of 1

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210060 M.P. 4.0			
0+00	BOP, Begin reconstruction of FSR 2210060. Begin brushing and clearing, grading and shaping, road reconditioning. 15' Subgrade, Compaction Method C (204.11). Begin crowning roadway. Reconstruct 2:1 Ditch line both sides. Begin placing 6" lift of aggregate Base, Grading D, Compaction Method B (322.05 - refers to 204.11).	300 Agg.		
0+60	Closure Berm, Level out and fill in cross ditch.			
2+40	Construct ditch out Right continue ditch construction on the left.			
4+00	Construct Ditch left to existing Ditch out left.			
5+90	Contruct 2:1 Ditch on both sides of road.			
9+40	Construct ditch out Right continue ditch construction on the left.			
10+40	Construct Ditch left to existing Ditch out left.			
12+25	EOP, End Reconstruction of FSR 2210060, End Clearing and Grubbing, grading,and shaping, reconditioning and Aggregate placement, End crowning and Ditch Reconstruction			

FSR 2210073

List 1 of 1

STATION	REQUIREMENT	Rock Quan. (C.Y.)	CULVERT INSTALLATION / IMPROVEMENTS	
		Pit Run/ Agg.	Culvert Size	Riprap In/Out (C.Y.)
	Project Begins at approximately FSR 2210 M.P. 4.9			
0+00	BOP, Begin reconstruction of FSR 2210073. Begin brushing and clearing, grading and shaping, road reconditioning. 14' Subgrade, Compaction Method C (204.11). Begin crowning roadway. Reconstrut Ditch line. Begin Placing 4' Pit Run Aggregate	50 S.A.		
2+80	End 4" Pit Run Aggregate. Begin 24" Pitrun Aggregate to level road grade. Jct to Temp. Road. End Crowning and Begin Outslope w/ no ditch	75 S.A.		
3+40	End 24" Pit Run Aggregate Begin placing 4" lift of aggregate Base, Grading D, Compaction Method B (322.05 - refers to 204.11).	55 Agg.		
4+00 - 4+70	Remove trees from Edge of Road and top of cut			
4+70	End Outsloping Begin Crowning and Reconstruct Ditch Line.			
6+35	EOP , End Reconstruction of FSR 2210073 End Clearing and brushing, grading and shaping, reconditioning and Aggergate Placement. End Crowning and Ditch Reconstruction.			