GRMWP Project Proposal

1. Project Name:

Broady Road Stormproofing & Decommissioning

2. Applicant:

USFS, Wallowa Valley Ranger District
Ken Gebhardt, District Ranger
PO Box 905
Joseph, OR 97846
kgebhardt@fs.fed.us
Phone: 541-426-5581
Fax: 541-426-5522

3. Participating Landowner(s) and Agencies:

Same as Applicant above.

4. Project Contact(s):

Dana M Nave
PO Box 905
Joseph, OR 97846
dmnave@fs.fed.us
Phone: 541-426-5690
Fax: 541-426-5522

5. Project Location:

The project is located in the Broady Creek Subwatershed of the Lower Joseph Creek Watershed, T04N R44E Sections 3-7, and 10, as well as in T05N R44E Sections 20, 28, 29, 32 and 33. It is along mainstem Broady Creek and West Fork Broady Creek in the north part of Wallowa County on Forest Service land.

6. Project Objectives:

Joseph Creek is one of the five highest priority Geographical Areas for restoration of the Grande Ronde Subbasin steelhead population, and Lower Joseph Creek (LJC) is ranked as priority #2 under the Joseph Creek population, with Key Habitat Quantity and Sediment listed as Key Limiting Factors to that population (GRSBP Supplement, p. 16). Lower Joseph Creek is also a restoration priority for the Joseph Creek steelhead focal fish population. Table 3-3 of the GRSBP Supplement states "Tributary reaches are likely the source of the identified sediment impacts", and it is recommended that upstream tributaries should be given priority for restoration (GRSBP Supplement, p. 17). Broady Creek is a tributary to Cottonwood Creek which is a tributary to Joseph Creek.

Two of the strategies to help improve sediment conditions in a High Priority Geographical Area are to close sediment-producing roads and to improve drainage in open sediment-producing roads (GRSBP Supplement, p. 48). This project reduces the risk of sediment transport and delivery to West Fork Broady and mainstem Broady Creeks by closing 9.0 miles of road and decommissioning 4.1 miles of road. This project also improves drainage on the closed road by installing drain dips, reduces the risk of culvert failure by removing all shallow culverts and reduces the "diversion potential" by creating grade-sags over deep culverts. The diversion potential is the likelihood of the water backed up behind a plugged culvert to get diverted down the road and not flow directly over it, thereby creating gullies down the roadbed and delivering exponentially greater quantities of sediment to the creek once it finally gets there. By reducing the risk of culvert failure and reducing the diversion potential if culverts do fail, we are addressing the Limiting Factors of Key Habitat Quantity and Sediment.

The Joseph Creek Watershed ranks 4th in a list of 8 watersheds that have the potential to positively impact steelhead populations from comprehensive habitat restoration (GRSBP Supplement, p. 50). This project will help to protect critical anadromous fish habitat and restore watershed processes that

form, connect and sustain those habitats by controlling sediment delivery to stream channels from roads, and removing roads or road-related runoff (GRSBP Supplement, p. 47).

7. Project Description:

Introduction - This project would stormproof FSR 4600-505 (9.0 miles) along Broady Creek and West Fork Broady Creek by removing all shallow culverts (inlets < 5 feet below road surface), creating grade sags over deeper culvert crossings, and creating drain dips according to USFS. The inside ditch on the -505 road that extends approximately 4 miles from FSR 4600-000 to the East Fork Broady confluence would be filled. Additionally, 4.1 miles of road (FSR 4600-545 (1.6 miles), FSR 4600-555 (1.1 miles), and FSR 4655-065 (1.4 miles)) would be decommissioned by removing all culverts and reestablishing the up- and down-stream channels at a consistent gradient. Gates would be installed on either end of the -505 road, and a trash rack in front of the West Fork Broady arch (at "Dp11") would be removed.

Existing condition – This project was conceived while completing the NEPA for the Baldwin Vegetation Management Project EA. Since that decision was signed in 2004, FSR 4600-505 ("the -505 road") has technically been a closed road and is supposed to be used for Administrative Access only (i.e. used by USFS employees and Permittees to do work). No barriers have been installed, however, so the -505 road, a "V" shaped road which starts on the 4600 road and runs down mainstem Broady Creek then follows West Fork Broady Creek back up to the 4650 road, has been accessible to full-sized vehicles all the way down both sides of the "V" until a debris flow or slump ("Debris 3" and "Slump 1" on the maps) make the road impassable to full-sized vehicles. Below those points, the road is accessible only to OHVs and equipment capable of overland travel, such as an excavator.

Three debris flows (likely from thunderstorms) have buried or ripped out shallow culverts along the -505 road – 2 along Broady Creek and 1 along West Fork Broady – and there has been one significant road failure where part of the road has slumped down into Broady Creek. Because of the chance of more debris flows and slumps, and because this road is going to stay on the FS system, it was decided in the EA to "stormproof" the -505 road to reduce the risk of road-related sediment entering Broady Creek and West Fork Broady Creek. Stormproofing would include removing all 30 shallow culverts along its length and allowing natural hydrologic and sediment transport processes take place in those draws; filling in the inside ditch which occurs only in the first 4 miles; constructing numerous drain dips to route water off of the road before it can saturate the road fill and create a slump; cleaning out the deep culvert inlets; and removing a trash rack over the arch in West Fork Broady Creek. Deeper culverts were cost-prohibitive to remove and still keep the road open to OHVs for Permittee and USFS access, so stormproofing the -505 road would also involve constructing grade sags over the 13 deeper culverts which would reduce the diversion potential (route water **over** the road instead of **down** the road) in the event of a culvert failure, reducing the amount of total sediment eroded and transported to the Broady or West Fork Broady Creek. Shallow culverts are designated on the map by "Sh#"; deep culverts by "Dp#".

Specific Actions – There are 4 main Tasks to complete, each of which includes several smaller tasks:

Task 1 - Stormproof 9.0 miles of FSR 4600-505. Remove 30 shallow culverts and, where there is a draw or channel, reconnect the up-and down-stream sections of the channel at a constant grade, lay back the road fill at a 1.5:1 slope, and ensure that the draws are navigable by an OHV; construct 13 grade sags over deeper culverts; seed and mulch shallow culvert removal areas and constructed grade sags to reduce raindrop impact on bare soils and facilitate infiltration; fill inside ditch along first 4 miles of road; and construct approximately 50 drain dips to route water off of the road.

There are 2 debris flow sites below East Fork Broady Creek confluence on the -505 road that likely have buried culverts; these culverts would be removed as well as any other unknown shallow culverts discovered on the road. Fill material excavated from culvert removal or grade sag construction would be used to fill in the inside ditch of the -505 road. A drain dip will be constructed anywhere an ephemeral draw or intermittent channel crosses the -505 road, as well as where springs intersect the -505 road and where slope and distance from the last dip dictates.

Task 2 - Decommission 4.1 miles of road (FSR 4600-545 (1.6 miles), FSR 4600-555 (1.1 mile) and FSR 4655-065 (1.4 miles)). Remove 16 shallow and 2 deep culverts, reconnect the up-and down-stream sections of each channel at a constant grade, and lay back the road fill at a 1.5:1 slope; seed and mulch the 18 former culvert sites; construct 10 drain dips along the -065 road at places designated by the USFS Hydrologist (marshy areas and steeper portions of the road); remove any unknown culvert discovered on those roads; and remove carsonite road signs.

In the two deep culvert locations on roads to be decommissioned, the road surface needs to be decompacted under the expected fill placement areas because the amount of fill may become unstable on top of a compacted surface.

Task 3 – Remove one trashrack. Clear fallen trees and woody debris off of trash rack; cut trash rack off of West Fork Broady arch inlet and remove it from the Forest.

Task 4 – Install 2 gates, one on either end of the -505 road.

Benefits – Reduced risk of excessive fine sediment delivered to Broady Creek and West Fork Broady Creek both through chronic road-related sediment inputs and from episodic culvert failure and capture of the stream channel by the roadbed. An estimated 7 miles of stream should benefit from the work.

Project Maintenance – Very little project maintenance is expected to be needed or occur. If deep culverts or arches left in place need to be cleaned out, that will be performed by the USFS on an as-needed basis.

Permits –The project is covered by USFWS/NMFS programmatic Aquatic Restoration BOs and ACOE programmatic permits. Project Notification Forms will be sent out to NMFS, ACOE and ODFW in May 2012. No work will occur outside of the instream work window, 1 July 2012 – 31 March 2013. A SHPO compliance document is complete and in the project file; there is one blazed tree approximately 9 feet from the -505 road that will need to be avoided.

Monitoring Plan - The monitoring plan will include a final report that describes the actual implementation of the project, and pre- and post- work photos taken from 3 established photo points. Photos are to be taken each year for 2 years post implementation, then again after 5 years. Monitoring and report writing will be completed by the USFS Hydrologist.

Work Dates – The project will start on 1July 2012 and wrap up approximately 2 months later. The instream work window is from 1 July 2012 to 31 March 2013. The requested BPA contract term would be 1 June 2012 to 30 November 2012.

8. Project Budget:

Provide detailed information for materials and labor costs, work units, cost share by funding source, administration request, etc. Tie budget items to Tasks identified in the Project Description section.

9. Attachments:

Include appropriate information or attachments, these may include:

X Maps – There is a Vicinity Map indicating the project location and three 1:24,000 topo maps – a North End, a SW End, and a SE End – with the location of each culvert and road identified, as well as the two points on both the east and west sides which prohibit full-size vehicle traffic beyond those points. Those points are labeled as Points of Interest on the map and are “Debris 3” for the west side, and “Slump 1” for the east side.

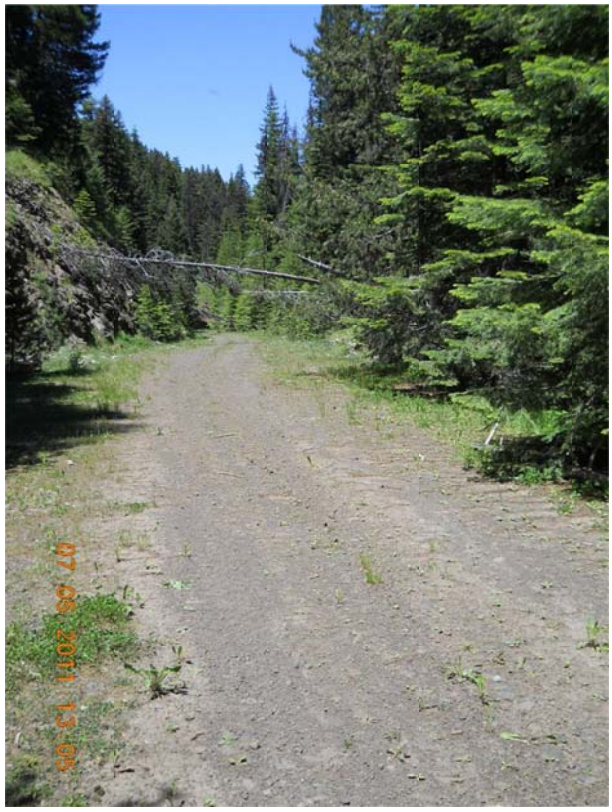
X Designs – USFS specifications for grade sags and drain dips are included as 3 separate documents: 2 standard details and 1 drainage spacing table.

X Photos – Photos showing existing conditions are included in a separate document.

FY 2012 Budget
Broady Road Stormproofing and Decommissioning
Contract Perf. Period: 1 June to 30 November 2012

		Qnty	Unit		Unit Cost		COST
A.	**PERSONNEL**						**$20,925**
	USFS Project Management (in-kind; incl. benefits)	45.0	day	@	$302	/day	$13,590
	USFS Contracting (in-kind; incl. benefits)	10.0	day	@	$336	/day	$3,360
	WR Project Management (in-kind)	15.0	day	@	$200	/day	$3,000
		Subtotal Regular					***$19,950***
		WR Benefits		***@***	***32.5%***	***regular***	***$975***
B.	**TRAVEL**						**$0**
C.	**SERVICES AND SUPPLIES**						**$137,347**
	Supplies:						
	Certified Weed-Free Mulch (USFS supplied)	24	bales	@	$13	/ea	$312
	Native Grass Seed Mix (USFS supplied)	75	lbs	@	$15	/lb	$1,125
		Subtotal Supplies					***$1,437***
	Services (O&M):						
	Mobilization	1	ea	@	$10,000	/ea	$10,000
	Shallow Culvert Removal	46	ea	@	$500	/ea	$23,000
	Shallow Culv Rmv - unknown/buried culverts	5	ea	@	$500	/ea	$2,500
	Deep Culvert Removal (Decom Rds)	2	ea	@	$30,000	/ea	$60,000
	Dips over Deep Culverts (-505 Rd)	13	ea	@	$450	/ea	$5,850
	Drain Dips installed in -505 Rd	50	ea	@	$200	/ea	$10,000
	Drain Dips installed in -065 Rd	10	ea	@	$200	/ea	$2,000
	Fill Inside Ditch along 1st 4 miles of -505 Rd	4	mi	@	$1,500	/mi	$6,000
	Trash Rack & Woody Debris Removal	1	ea	@	$800	/ea	$800
	Install 2 Gates	2	ea	@	$5,000	/ea	$10,000
	Seed and Mulch Culvert Removal Sites	48	ea	@	$120	/ea	$5,760
		Subtotal Services					***$135,910***
D.	**DIRECT COST (Sum of Items A-C)**						**$158,272**
E.	**NON-EXPENDABLE EQUIPMENT**						**$0**
							$0
F.	**INDIRECT COST**	**9.0%**	**of Personnel and Supplies**				**$2,013**
G.	**SUBCONTRACTS**						**$0**
	Subcontractor						**$0**
H.	**TOTAL CONTRACT COST**						**$160,285**

Broady/USFS Road Stormproofing and Decommissioning – Photos



Example -505 Rd at “Dp4”

Broady Creek at Dp8

Slump on -505 Rd below “Sh19”

Marshy spot on -505 Rd

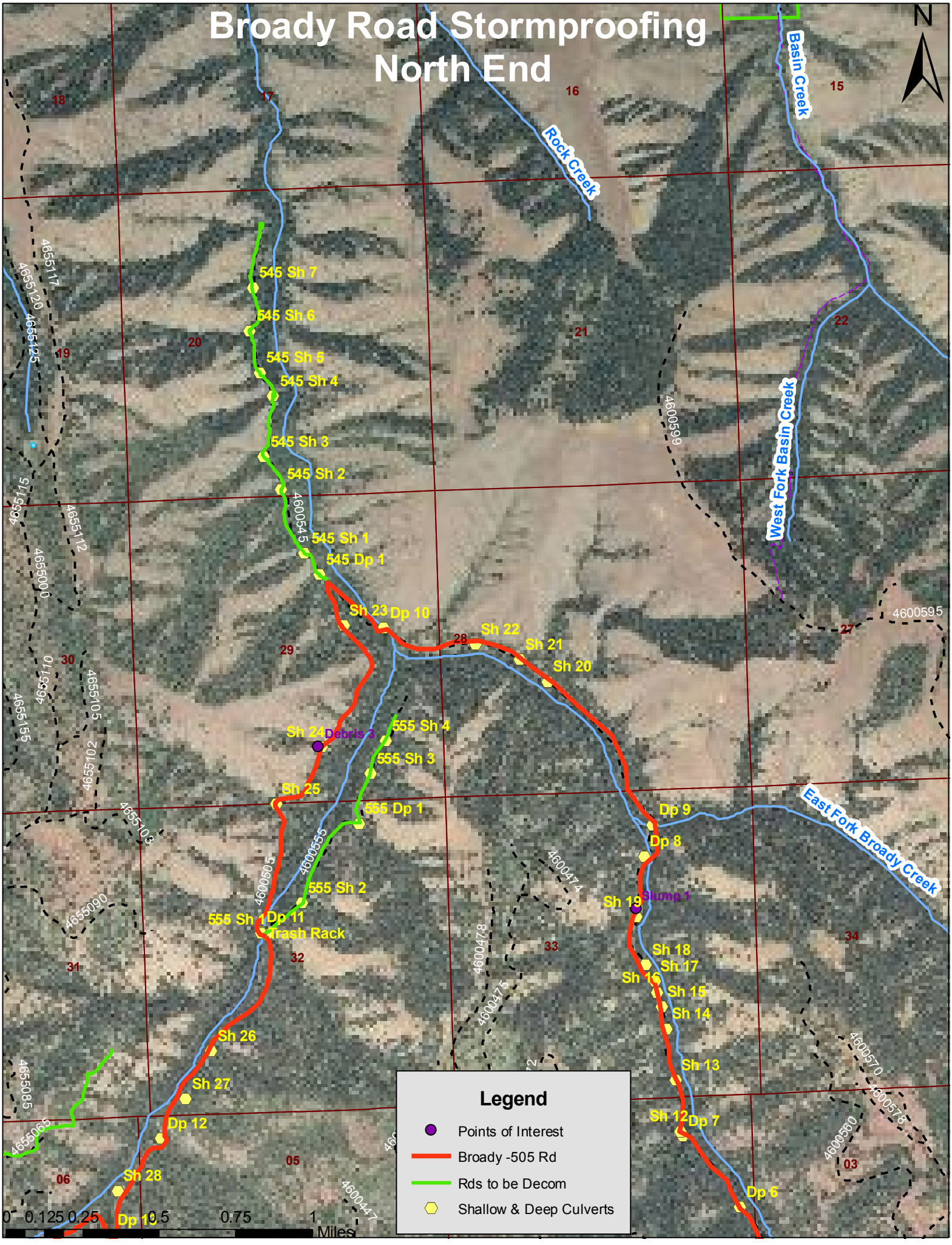
Trash Rack on West Fork Broady Arch (“Dp11”)

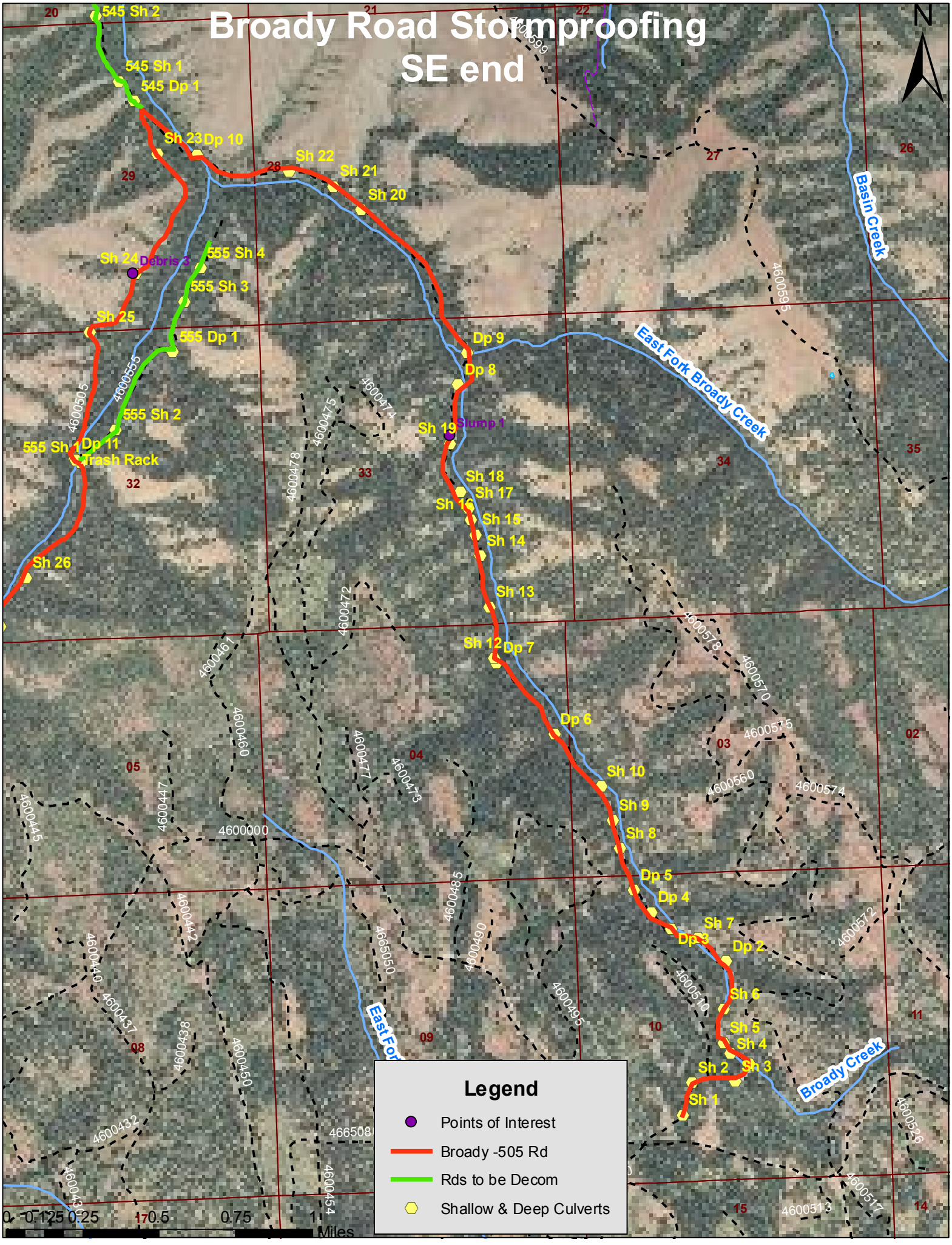
Example -545 Rd

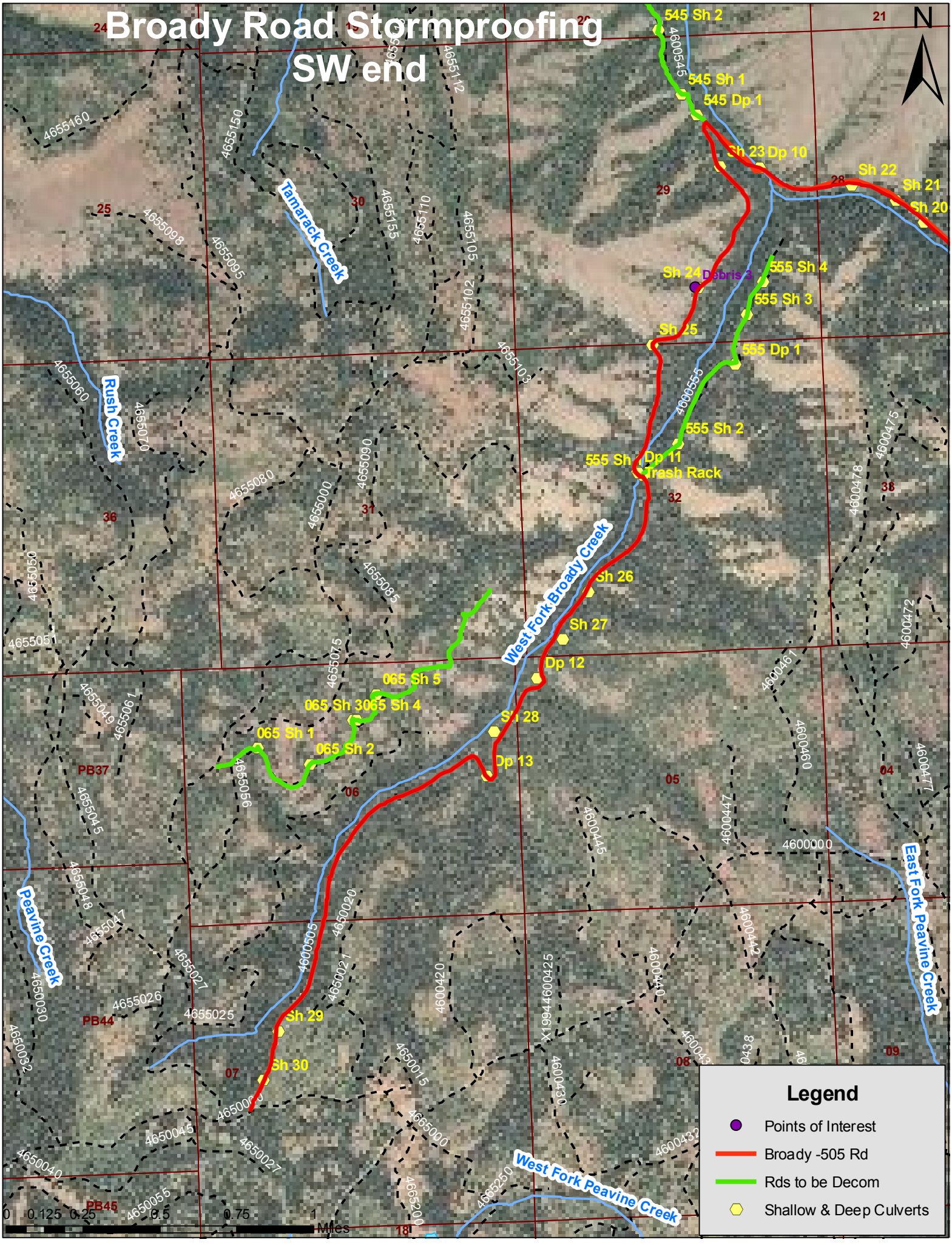
Example of -545 Rd distance from Broady Creek

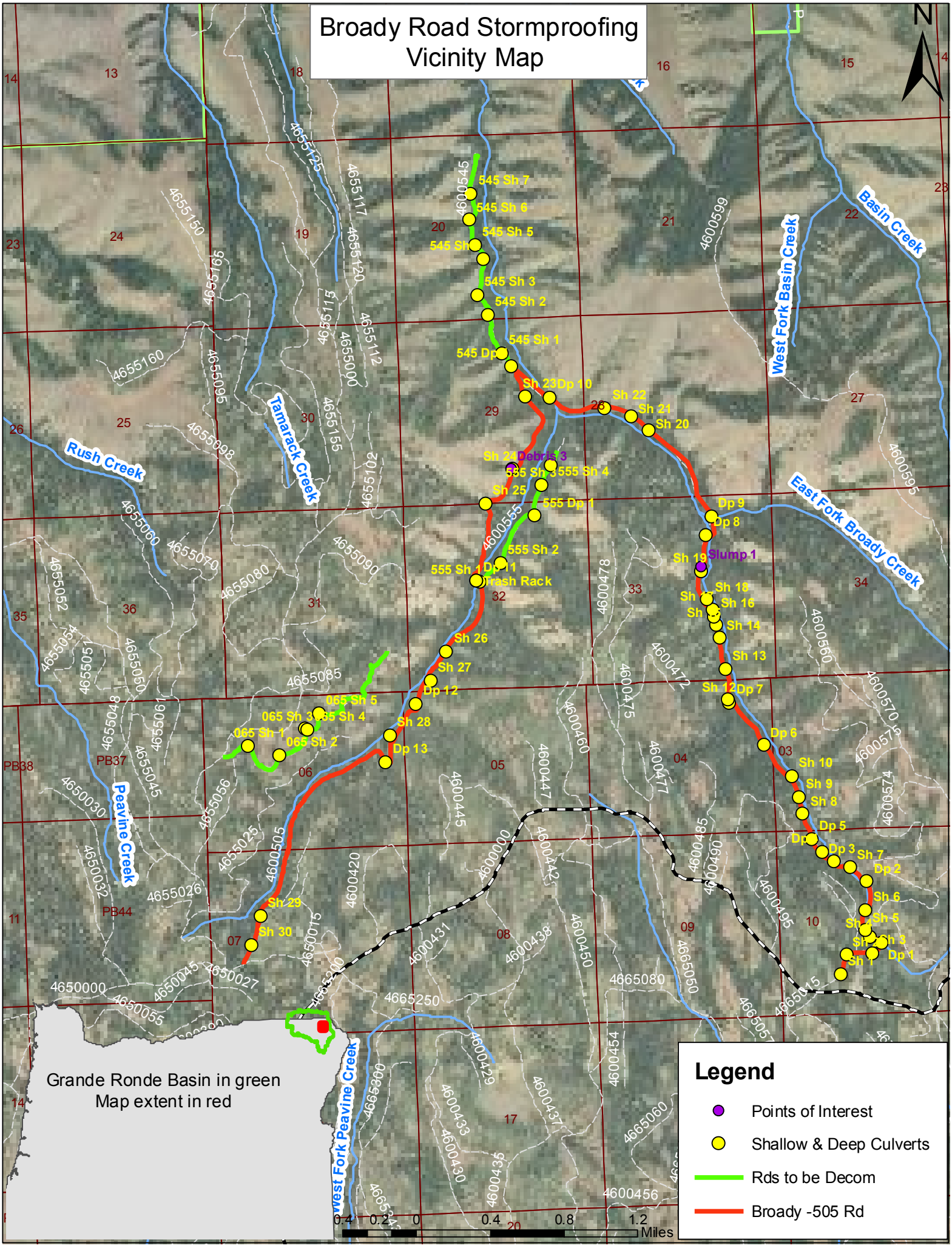
Example of -555 Rd vegetation (choked)

Deep culvert on -555 Rd ("555 Dp1")


Broady Road Stormproofing
North End
N
Rock Creek
Basin Creek
West Fork Basin Creek
East Fork Broady Creek
545 Sh 7
545 Sh 6
545 Sh 5
545 Sh 4
545 Sh 3
545 Sh 2
545 Sh 1
545 Dp 1
Sh 23
Dp 10
Sh 22
Sh 21
Sh 20
Sh 24
Debris 3
555 Sh 4
555 Sh 3
Sh 25
555 Dp 1
555 Sh 2
555 Sh 1
Dp 11
Trash Rack
Sh 26
Sh 27
Dp 12
Sh 28
Dp 13
Dp 9
Dp 8
Sh 19
Slump 1
Sh 18
Sh 17
Sh 16
Sh 15
Sh 14
Sh 13
Sh 12
Dp 7
Dp 6
Legend
Points of Interest
Broady -505 Rd
Rds to be Decom
Shallow & Deep Culverts
0 0.125 0.25 0.5 0.75 1
Miles


Broady Road Stormproofing
SE end
N
545 Sh 2
545 Sh 1
545 Dp 1
Sh 23
Dp 10
Sh 22
Sh 21
Sh 20
Sh 24
Debris 3
555 Sh 4
555 Sh 3
Sh 25
555 Dp 1
555 Sh 2
555 Sh 1
Dp 11
Trash Rack
Sh 26
Dp 9
Dp 8
Sh 19
Slump 1
Sh 18
Sh 17
Sh 16
Sh 15
Sh 14
Sh 13
Sh 12
Dp 7
Dp 6
Sh 10
Sh 9
Sh 8
Dp 5
Dp 4
Sh 7
Dp 3
Dp 2
Sh 6
Sh 5
Sh 4
Sh 2
Sh 3
Sh 1
Basin Creek
East Fork Broady Creek
Broady Creek
East Fo
4600595
4600555
4600505
4600475
4600474
4600478
4600472
4600461
4600460
4600477
4600473
4600447
4600445
4600000
4600485
4600490
4600495
4600572
4600578
4600570
4600576
4600560
4600574
4600510
4600442
4600440
4600437
4600438
4600450
4600432
4600454
4600526
4600517
4600513
4665050
466508
Legend
Points of Interest
Broady -505 Rd
Rds to be Decom
Shallow & Deep Culverts
0 0.125 0.25 0.5 0.75 1
Miles


Broady Road Stormproofing
SW end
N
545 Sh 2
545 Sh 1
545 Dp 1
Sh 23 Dp 10
Sh 22
Sh 21
Sh 20
Sh 24 Debris 3
555 Sh 4
555 Sh 3
Sh 25
555 Dp 1
555 Sh 2
555 Sh 1 Dp 11
Trash Rack
Sh 26
Sh 27
Dp 12
065 Sh 5
065 Sh 3065 Sh 4
065 Sh 1
065 Sh 2
Sh 28
Dp 13
Sh 29
Sh 30
Tamarack Creek
Rush Creek
West Fork Broady Creek
Peavine Creek
East Fork Peavine Creek
West Fork Peavine Creek
PB37
PB44
PB45
Legend
Points of Interest
Broady -505 Rd
Rds to be Decom
Shallow & Deep Culverts
0 0.125 0.25 0.5 0.75 1 Miles

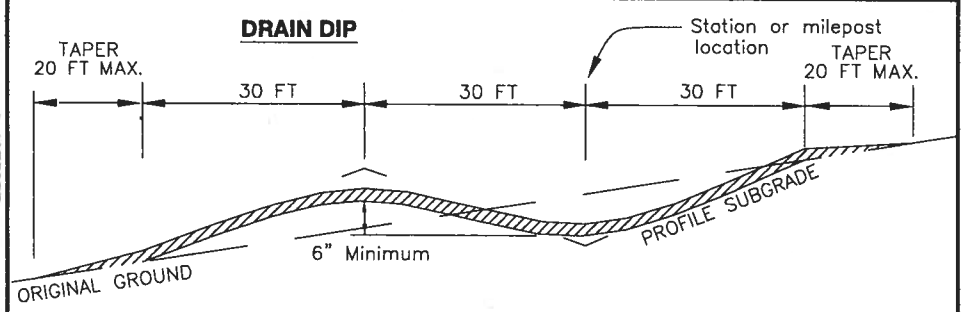

Broady Road Stormproofing
Vicinity Map
N
545 Sh 7
545 Sh 6
545 Sh 5
545 Sh 4
545 Sh 3
545 Sh 2
545 Sh 1
545 Dp 1
Sh 23
Dp 10
Sh 22
Sh 21
Sh 20
Sh 24
Debris 3
555 Sh 3
555 Sh 4
Sh 25
555 Dp 1
555 Sh 2
555 Sh 1
Dp 11
Trash Rack
Sh 26
Sh 27
Dp 12
Sh 28
Dp 13
065 Sh 5
065 Sh 4
065 Sh 3
065 Sh 2
065 Sh 1
Sh 29
Sh 30
Dp 9
Dp 8
Sh 19
Slump 1
Sh 18
Sh 16
Sh 14
Sh 13
Sh 12
Dp 7
Dp 6
Sh 10
Sh 9
Sh 8
Dp 5
Dp 4
Dp 3
Sh 7
Dp 2
Sh 6
Sh 5
Sh 4
Sh 3
Dp 1
Sh 2
Sh 1
Rush Creek
Tamarack Creek
Peavine Creek
West Fork Peavine Creek
West Fork Basin Creek
Basin Creek
East Fork Broady Creek
Grande Ronde Basin in green
Map extent in red
Legend
Points of Interest
Shallow & Deep Culverts
Rds to be Decom
Broady -505 Rd
0.4 0.2 0 0.4 0.8 1.2
Miles

STANDARD DETAILS FOR DRAIN DIP AND GRADE SAG CONSTRUCTION

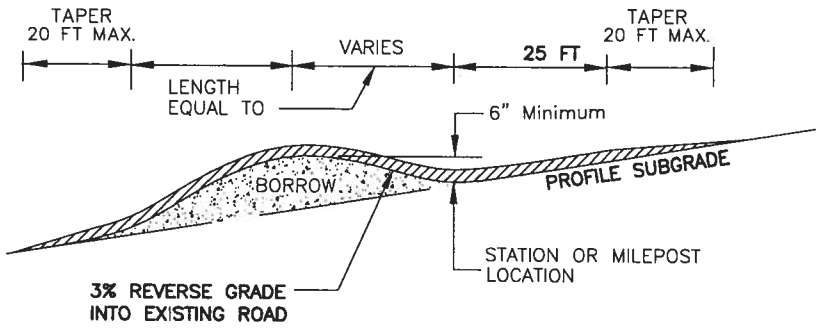
· DRAWINGS NOT TO SCALE

PROFILES

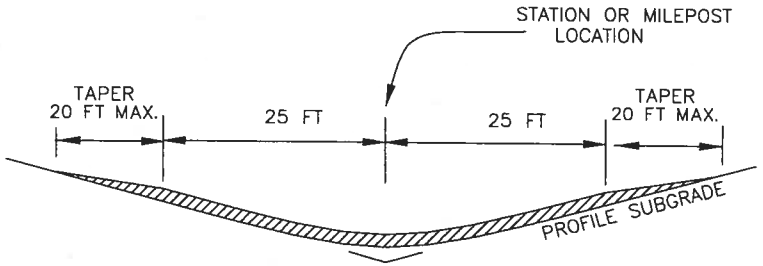
DRAIN DIP



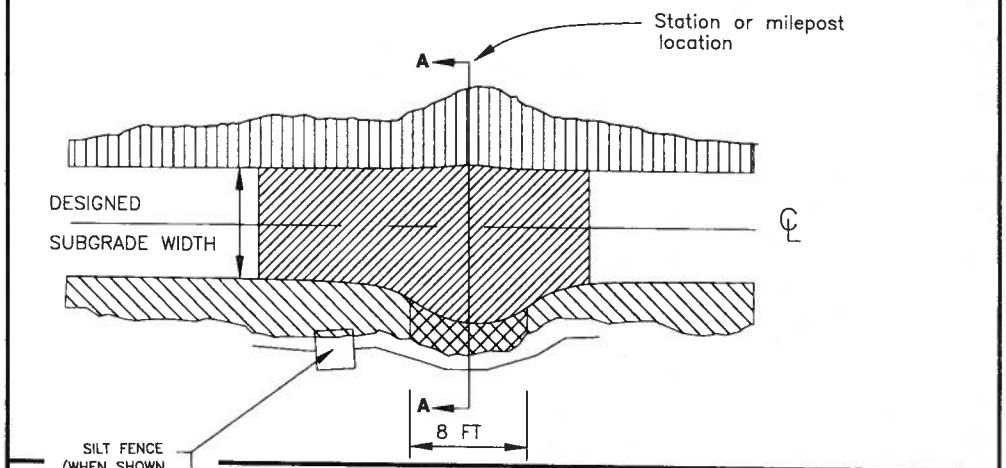
DRAIN DIP, BORROW CONSTRUCTION



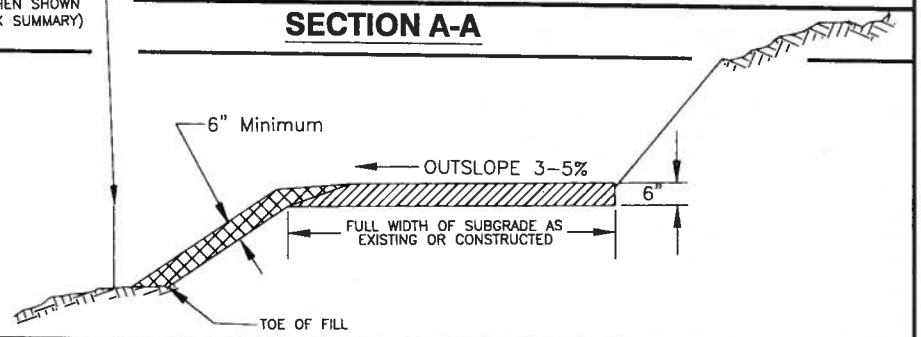
GRADE SAG



PLAN



SECTION A-A



LEGEND

- CUT SLOPE
- AGGREGATE
- FILL SLOPE
- SLOPE PROTECTION (FSP)

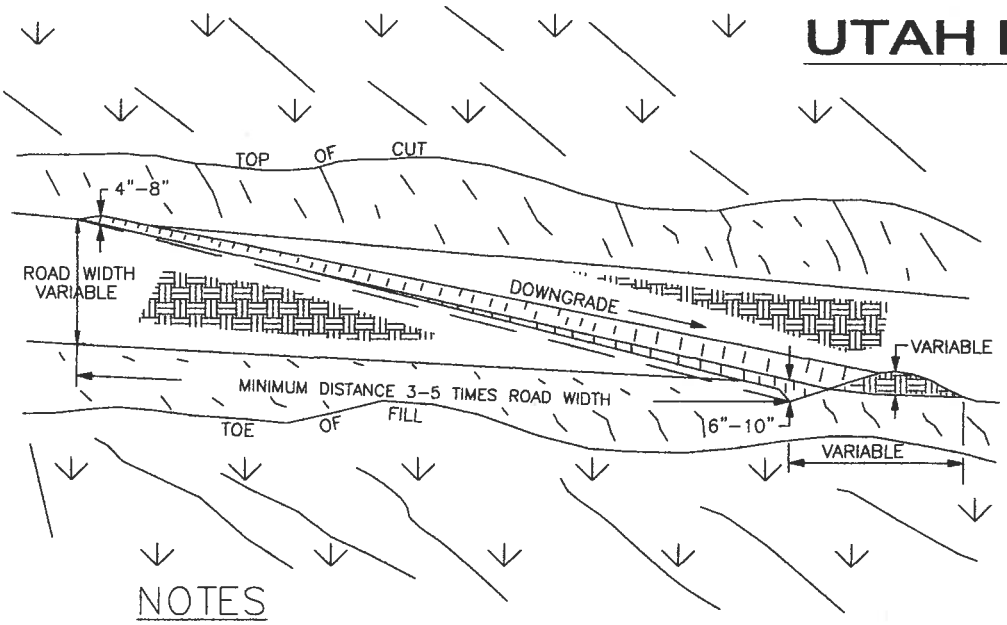
NOTES

1) THE DRAIN DIP OR GRADE SAG INVERT SHALL BE SMOOTH AND FREE DRAINING.
2) PLACE AGGREGATE AS SHOWN, WHEN SPECIFIED IN THE WORK SUMMARY. AGGREGATE DEPTH SHALL BE 6", UNLESS OTHERWISE SHOWN IN THE WORK SUMMARY.
3) PLACE FILL SLOPE PROTECTION (FSP) AS SHOWN, WHEN SPECIFIED IN THE WORK SUMMARY.

DRAWING 835-1

UTAH DIP DETAIL

NO SCALE



NOTES

1. ALL UTAH DIPS SHALL BEGIN AT THE INTERSECTION OF THE ROADBED AND CUT SLOPE AND RUN ACROSS THE ENTIRE WIDTH OF THE ROADBED.
2. ALL UTAH DIPS SHALL HAVE FREE FLOWING OUTLETS.
3. WHEN STAKES ARE USED, THEY SHALL DESIGNATE THE OUTLET LOCATION.
4. **UNLESS LOCATIONS ARE STAKED BY THE FOREST SERVICE,** THE FOLLOWING TABLE SHALL BE USED AS A GUIDE.

DRAINAGE SPACING TABLE

SPACING ALONG ℄ (BASED ON SOIL EROSION GROUP 3)

DOWN GRADE (IN %)	UNSURFACED (IN SMU*)	1/ SURFACED (IN SMU*)	2/ SURFACED/UNSURFACED (OUTSIDE SMU*)
2	105 FT.	160 FT.	USE ENGINEERING SPACING GUIDE (BUT IN NO PLACE MORE THAN 500 FT. ALONG ℄), OR AS STAKED BY THE FOREST SERVICE
4	90 FT.	140 FT.	
6	80 FT.	125 FT.	
8	75 FT.	115 FT.	
10	65 FT.	100 FT.	
12	55 FT.	85 FT.	
14	45 FT.	70 FT.	
16	35 FT.	55 FT.	
18	30 FT.	45 FT.	
>20	30 FT.	30 FT.	

1/ PIT RUN OR GRID ROLLED > 25% FINES

2/ CRUSHED ROCK, PIT RUN, OR GRID ROLLED W/ < 25% FINES

* SMU = STREAMSIDE MANAGEMENT UNIT:

SMU WIDTH

Class I through IV Streams — 150 Ft. each side for sideslopes ≤ 30%; 200 Ft. each side for sideslopes > 30%

SMU GUIDELINES

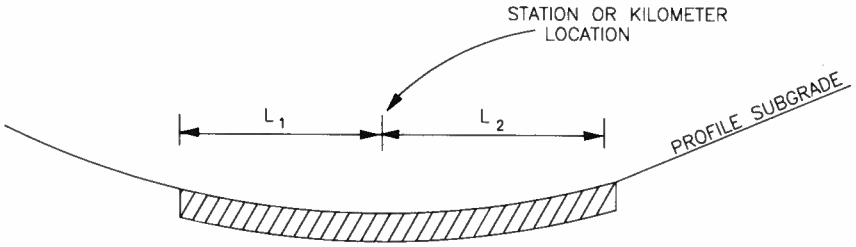
When a road is within 25 Ft. of a stream and parallels stream for more than 300 feet, decrease spacing by 25%.

Where a road is grading down towards a stream, locate the last cross-drain at about 10-30 Ft. from stream (depending upon filtering capability at the outlet); place the next cross-drain upgrade at 75% of the spacing guide value.

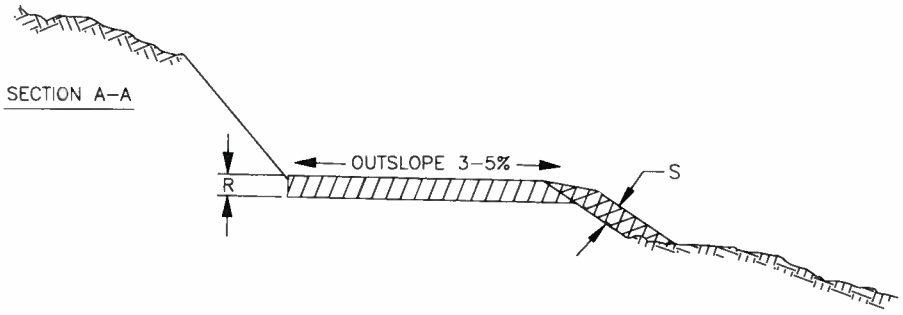
If road has drainage ditch, extend cross-drains to intercept the runoff.

SHEET	TOTAL SHEETS

PROFILE

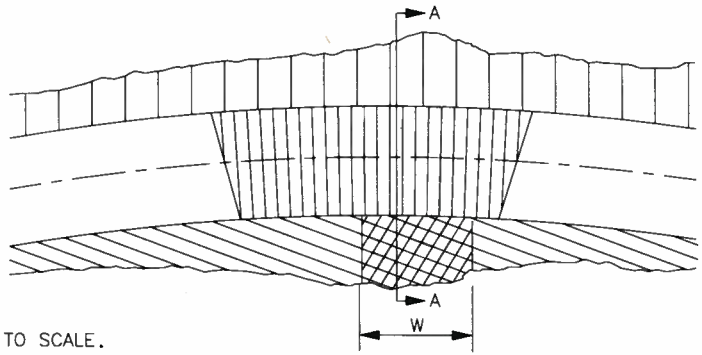


SECTION A–A



ROAD NO. & STA./km	SUBGRADE TREATMENT				SLOPE PROTECTION			REMARKS
	L_1	L_2	R		W	S		
	m	m	mm		m	mm		

PLAN



CUT SLOPE

FILL SLOPE

SUBGRADE TREATMENT PAY ITEM NO. ____

SLOPE PROTECTION PAY ITEM NO. ____

* DRAWINGS NOT TO SCALE.

VERSION 1
5/7/97
WAW00037.DWG

U.S. DEPARTMENT OF AGRICULTURE
WALLOWA–WHITMAN NATIONAL FOREST

STANDARD DETAIL FOR GRADE SAG

RECOMMENDED BY:

FOREST DEVELOPMENT ENGINEER DATE

APPROVED BY:

FOREST ENGINEER DATE