

Bixby Thin STWD - Stewardship Project Specification

Project # 3 - Road Decommissioning

End Result: Decommission roads and return road template to natural conditions and hydrologic functioning. Objective is to reduce sediment movement to nearby streams.

Project Description: Project consists of decommissioning 0.93 miles of road 8573114 by removing all culverts and fills, installing water bars, and placement of an earthen berm at the beginning of the project area. Project 8573114 begins at T3S R9W, SW/SW of section 13, and goes to the end of the road. The beginning location is at junction with road 8573, Bays Creek Road. The road surface is aggregate.

Completion Date: Completion date of the project is no later than September 15 of any calendar year prior to the termination date of Bixby Thin Stewardship contract. Follow Oregon Guidelines for Timing of In-Water Work in live streams; work shall be completed between July 1 through September 15 in live streams.

Incidental Logging Out: Logging out road to access work items is incidental to the project design. Generally, this road has minimal logging out except at station 23+40. A 5 foot diameter by 30 foot length log crosses the road prism. Routes around the log are limited. Move log as necessary to access work items and do not place log in adjacent stream channel.

Minimize disturbance of existing vegetation in ditches and at stream crossings to the greatest extent possible. Conduct activities during dry field conditions- low to moderate soil moisture levels.

Project Work Items: All work is on Forest road 8573114 as described above.

Item Number	Work Item	Quantity	Description/Notes
1	Pull and Remove Culverts	15	18” ditch relief culverts; 18 – 48” stream culverts; normal fill. See specs below
2	Install Earthen Barricades	1	One at beginning of project, station 0+50, to effectively close road. See specs below
3	Install water bars	As required by specs but estimate minimum of one every 200 feet or approximately 25 - 40 total	See specs below

Item # 1 - Culvert Removal and Disposal Specs and Location: - The Contractor shall remove all culverts on road 8573114 within the project area. Ditch relief and stream locations may be flagged in the field, and are listed below on work listing.

Culvert Removal: The Contractor shall remove culverts as designated by the Government. The Contractor shall be responsible for disposal of the removed culverts in a legal manner and for the payment of any fees required and shall submit proof of legal disposal prior to final project acceptance.

Maintaining clean water downstream of the project is the responsibility of the contractor for the duration of the project. Contractor shall coordinate with the District Fisheries Biologist, to remove existing aquatic organisms at station 31+00 culvert site prior to isolation and dewatering the area.

Excavation of fill during culvert removal shall be accomplished in a manner that minimizes sedimentation from entering streams. Temporary sediment control structures such as silt fencing or straw bales for short term sediment abatement shall be installed as needed, immediately downstream before excavation on culverts that are running water.

Following culvert removal, any disturbed intermittent or live stream bed shall be reshaped to the natural stream gradient with sides sloped to a 1.5H to 1V grade or matched to the undisturbed side slopes associated with the channel. The re-established channel shall have a minimum bottom width of 4 feet or greater as designated in the work listing below. There are 7 known intermittent or perennial stream beds within this project. Ditch relief culverts shall have a minimum bottom width of 3 feet or greater as designated in the work listing below.

Remove culverts and excavate all fill material down to the original live stream bed or bottom of pipe bedding. The removed fill material shall be placed against the cut slope and recontoured as close as possible to the original contours. The material shall be outsloped at a minimum of 20% gradient and no closer than 20 feet to stream courses, seeps and springs.

Trees cut or otherwise removed in the clearing area for the culvert removals shall be felled directionally in a manner that protects the trees outside the road prism from damage. Utilize rocks and boulders from excavation in the restored stream channel to dissipate energy and control flow path. Do not create areas which will cause head cutting.

For culvert removals, when possible promote passage of all fish species and life stages present in the area. Re-contour affected floodplains to mimic natural floodplain contours and gradient to the greatest degree possible.

8573114 Culvert Work Listing. Stations are measured starting at Forest road 8573 in T3S R9W, SW/SW of section 13.

Culvert Diameter Size	Station (feet)	Type	Minimum Channel Bottom Width (feet)
18"	0+80	Ditch relief	3
18"	4+30	Ditch relief	3
18"	6+80	Dry Swale	3
18"	9+24	Dry Swale	3
24"	10+76	Perennial Stream	8
24"	16+70	Perennial Stream	4
24"	21+85	Perennial Stream	6
18"	22+77	Dry Swale	3
18"	24+80	Intermittent Stream	4
18"	26+40	Intermittent Stream	4
48"	31+00	Perennial Stream	10
18"	34+30	Ditch relief	3
18"	39+90	Dry Swale	3
18"	41+20	Perennial Stream	6
18"	43+90	Ditch relief	3

Item #2 – Earthen Berm Road Closure Barricade Specs Location and Guidelines

The Contractor shall place an earthen berm barricade to completely close off road 8573114 to motor vehicle traffic. The barricade shall be placed at 0+50 as flagged in the field, or at the beginning of the 8573114 project as described above. A Berm Barricade Typical Drawing is provided. Berm barricade shall be constructed to allow water drainage away from streams and other erodible surfaces.

Item #3 – Waterbar Specs and Location Guidelines

The Contractor shall storm proof designated roads by installing water bars at locations flagged in the field, listed on work sheets, or at intervals as designated on the Typical Diagram(s) provided. The Government may increase or decrease the spacing intervals so as to fit specific road conditions. Roads 8573114 will not receive traffic; water bar installation type should be non-drivable, type I.

Water bars shall be constructed so as to channel water away from existing ditch lines and across the road surface to the outside of the road shoulder. Water bars shall be self-maintaining. See Water Bar Typical.

Water Bar Location Process

The first step is to plan for water bars at critical locations using guidelines for water collection and discharge. Then select additional locations to meet spacing requirements shown in Table 1. See attached drawing for typical water bar locations.

Water Collection Guidelines

Place water bars at natural small drainages that may not have justified a ditch relief culvert at the time of design. Try to keep as much of the water in its natural route as possible even if it requires an extra water bar.

Place water bars to back-up removed culverts that provided ditch relief or natural channel flow.

Place water bars to prevent road surface and cut bank sedimentation from entering directly into natural drainage channels.

Place water bars to dissipate water prior to steep grades.

Place water bars at road seeps, springs and wet subgrades to collect this water and quickly discharge it off the road. These areas may be notorious for potholes or fill failure.

Place water bars to effectively reduce ditch erosion. Reduce the upper reach of the ditch by a length greater than the area showing ditch erosion. For example: if the lower 90 feet of ditch shows signs of erosion, eliminate at least the first 90 feet of ditch by using a water bar.

Water Discharge Guidelines - consider these items for all waterbars.

Discharge onto undisturbed areas, preferable rocky ground or areas protected with vegetative cover.

Avoid discharging directly over fills. Seek natural ground areas first and then areas along edges of fills.

On steep slopes discharge on convex slopes rather than draws.

Avoid crossing road or shoulder cracks especially where steep slopes or side cast construction is evident.

If a vegetated or rocky location is not found, reduce water bar spacing to match native soil conditions found in Table 1.

Water Bar Spacing Guidelines

Water bar location may be determined by measuring or estimating the distances and grades in Table 1. The road surface for this project is aggregate and contractor will use recommended spacing provided below for aggregated surfaced with vegetated/rocky discharge points. Care should be taken not to exceed 150% of distances shown. During storms in 1996 several water bars exceeding 150% of recommended spacing received so much water that the water bars themselves had excessive erosion.

The spacing shown for native surface roads is typical for most of the Siuslaw's soils. If fine and light soils (silt & silty sands) are encountered, reduce spacing by 20%. If silty clay or sandy clay soils are encountered, spacing may be increased up to 50%.

Table 1 Typical Water Bar Spacing

Road grade	Aggregate surfaced with vegetated/rocky discharge point		Native surface or barren soil discharge points	
	Feet	Meters	Feet	Meters
1-3	600	200	100	35
4-6	300	100	80	25
7-9	200	70	70	23
10-12	150	50	60	20
13-18	120	40	50	15
19+	80	25	30*	*

*Consider using surface protection measures such as aggregate.

Water bar Construction Guidelines: This project will use Type I waterbars.

Type I Water Bars: Intended for use on roadbeds that will not have traffic. Use on closure of temporary roads, roads to be obliterated, decommissioned or long term closure of roads in maintenance level I. These water bars are designed to remain effective until the road prism stabilizes with vegetation.

- **AGGREGATE ROADS**

Water bars that cut through the aggregate base of a road and reach erosive soils need to have aggregate surfacing bladed back into the water bar channel.

- **COMPACTION OF BERM**

Compaction of the excavated material used to make the berm on the downhill side of the water bar is recommended. Wheel-rolling or walking the excavation equipment over the downhill berm is adequate.

- **ROADSIDE DITCHES**

Intercept ditch water by including a ditch block during construction of all water bars..

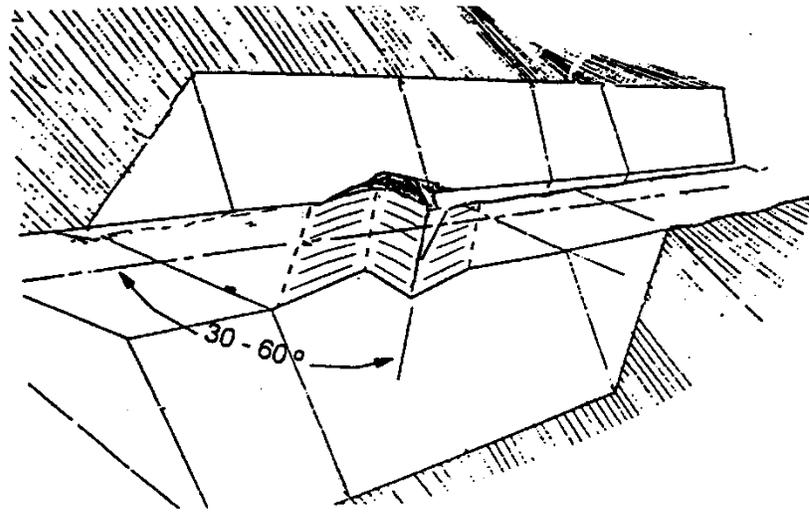
- **SKEW**

Construct with a 30 to 60 degree angle from road centerline.

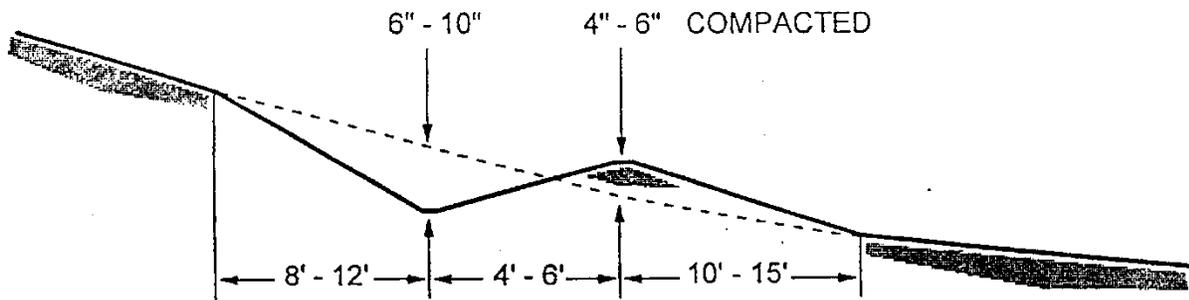
- **DEPTH and WIDTH**

Construction dimensions for a water bar are shown on the attached typicals. For road grades over 10% the cut depth and berm height should approach maximum values.

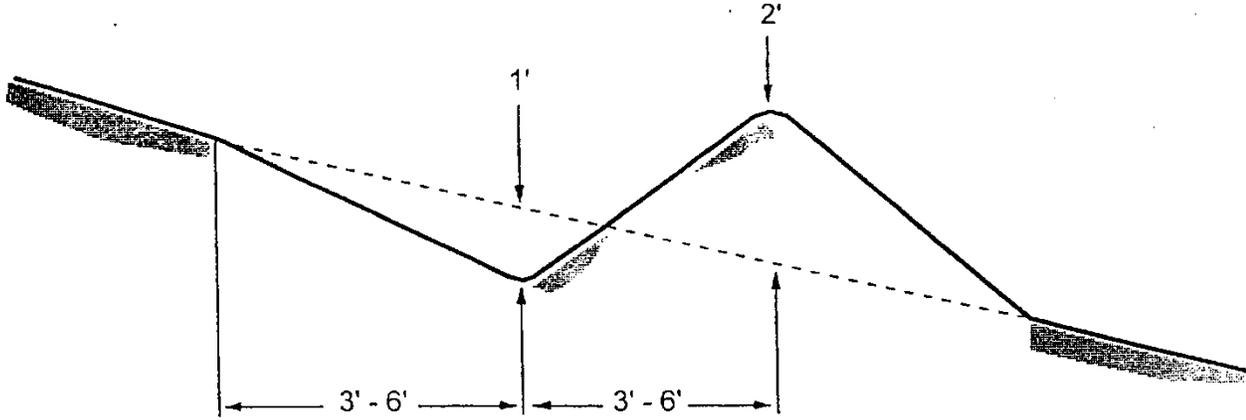
WATER BAR CONSTRUCTION DETAILS



PERSPECTIVE VIEW

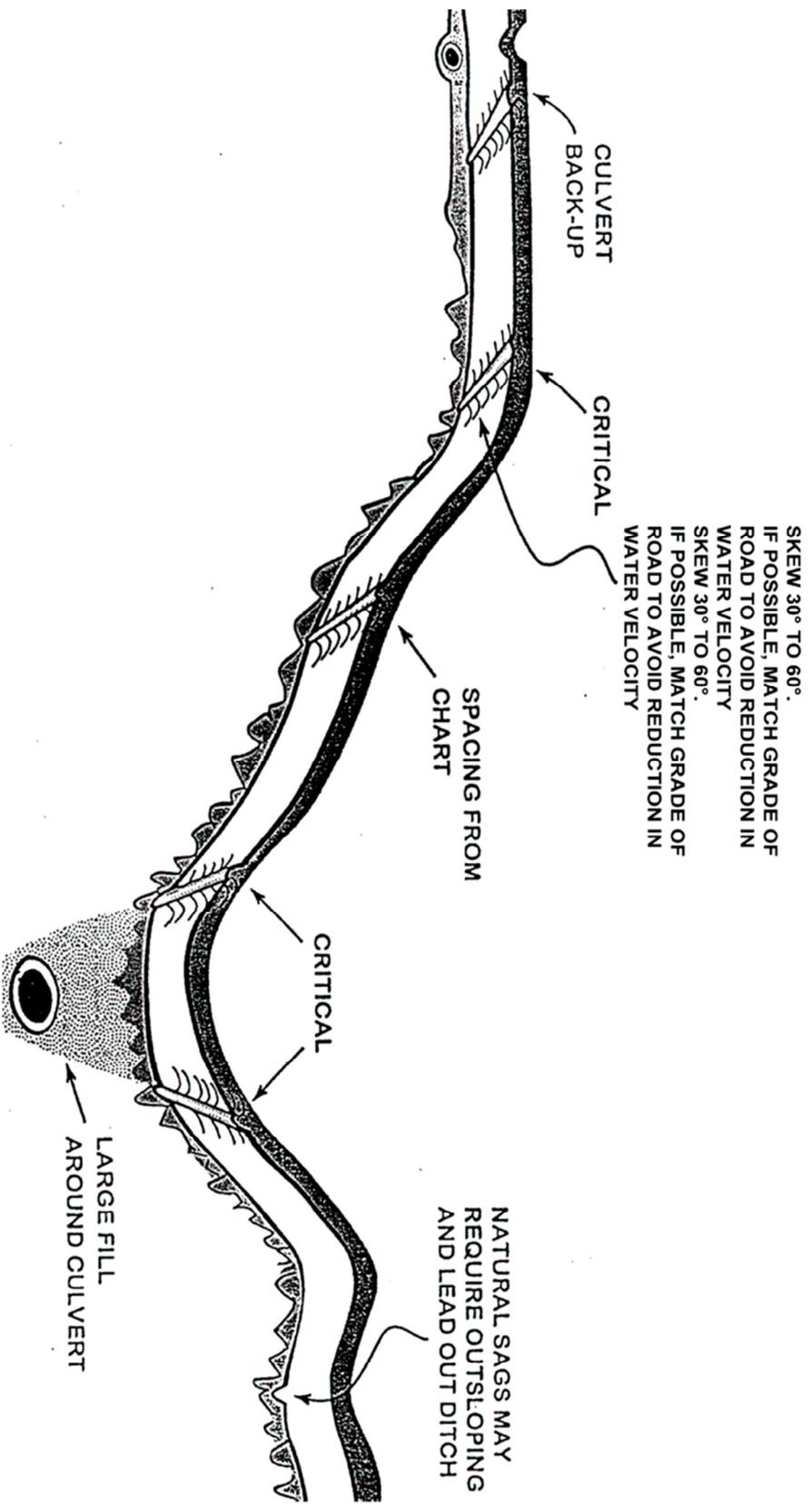


PROFILE -- TYPE II



PROFILE - TYPE I

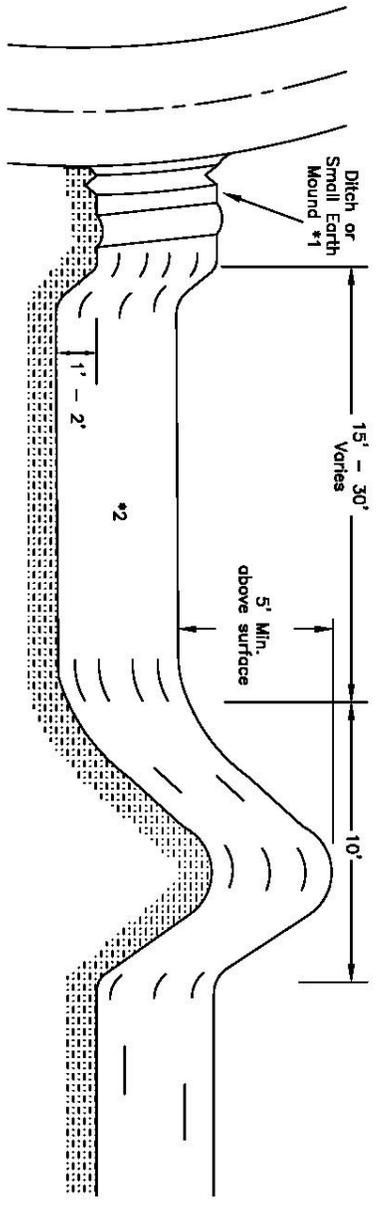
NOTE: Block ditchline with excavated material to prevent ditch water from bypassing waterbar. No type II will be used on this project.



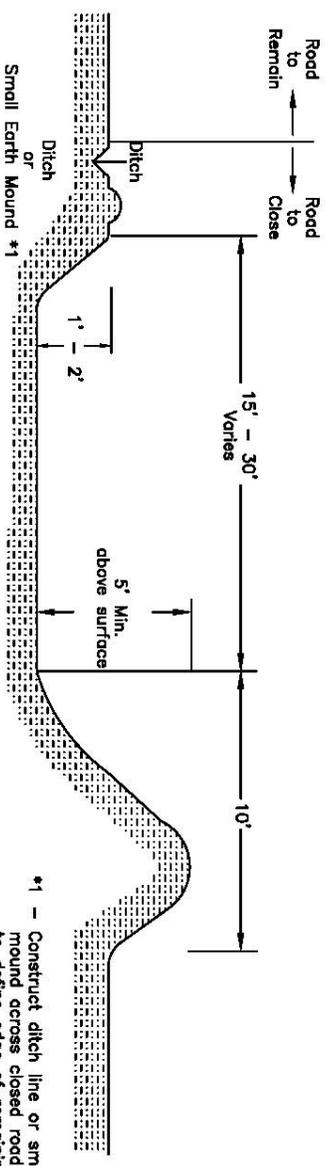
TYPICAL WATER BAR LOCATIONS

ROAD CLOSURE - EARTH MOUND TYPICAL

PROJECT SHEET	TOTAL SHEETS
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ISOMETRIC VIEW



PROFILE VIEW

- *1 - Construct ditch line or small earth mound across closed road entrance to define edge of remaining road.
- *2 - Slope Excavation area to drain

6-15-05