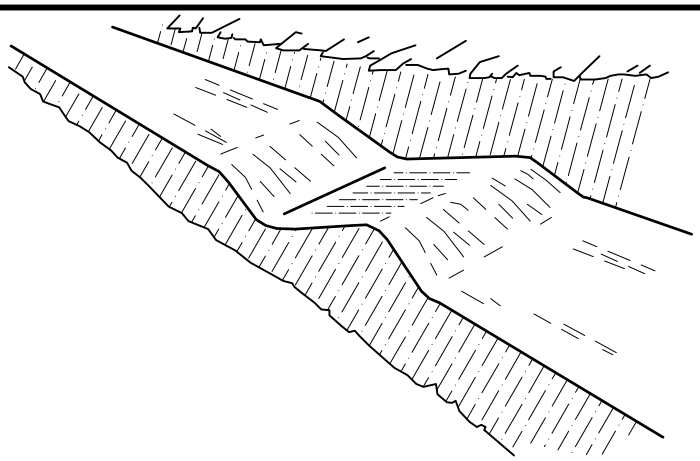
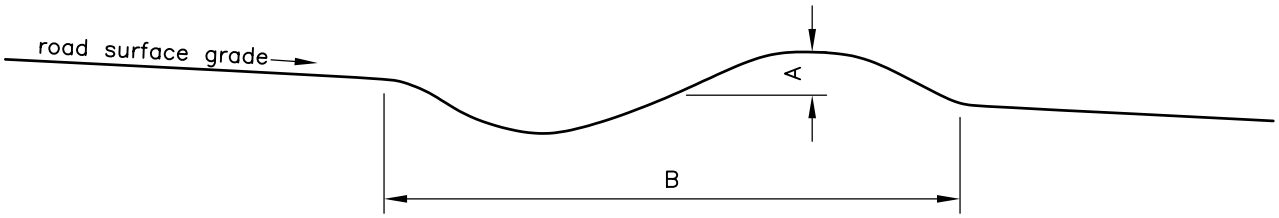
Water bars are narrow structures that may be shallow or deep. Deep water bars are usually used on roads that will be closed for extended periods.

DEEP WATER BAR
A = 24 to 30 inches
B = 6 to 10 feet

SHALLOW WATER BAR
A = 8 to 12 inches
B = 6 to 12 feet





WATER BARS

NOTES

All water bars shall begin at the intersection of the roadbed and cut slope and run across the entire width of the roadbed.

All water bars shall have free flowing outlets.

When stakes are used, they shall designate the outlet location.

Unless locations re staked by NRCS, the following table shall be used as a guide.

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

2. Where a road is grading down towards a stream, locate the last water bar at about 10 to 30 feet from stream (depending upon filtering capability at the outlet). Place the next water bar upgrade at 75 percent of the spacing guide value.

3. If road has drainage ditch, extend water bars to intercept the runoff.

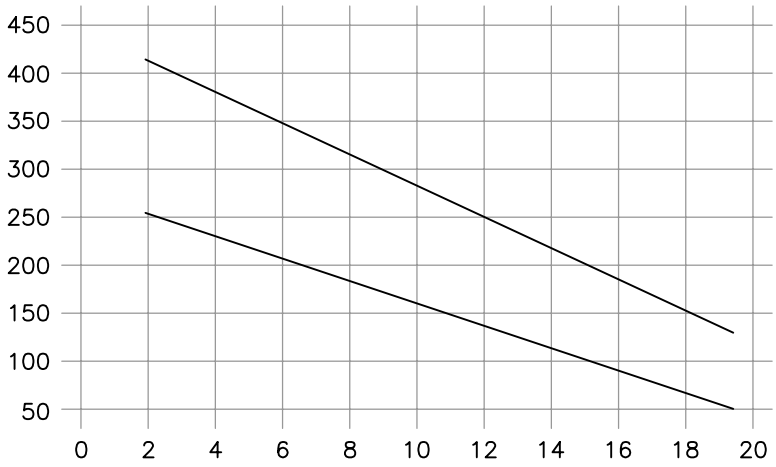
4. This drawing requires supporting technical documentation prior to use and must be adapted to the specific site.

5.

6.

7.

8.



Drawing not to scale

	Date	CAD FILE NAME	WATER BAR
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Drawn	3/2005	DRAWING NO.	
Checked		SHEET OF	
Approved		NRCS U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE	

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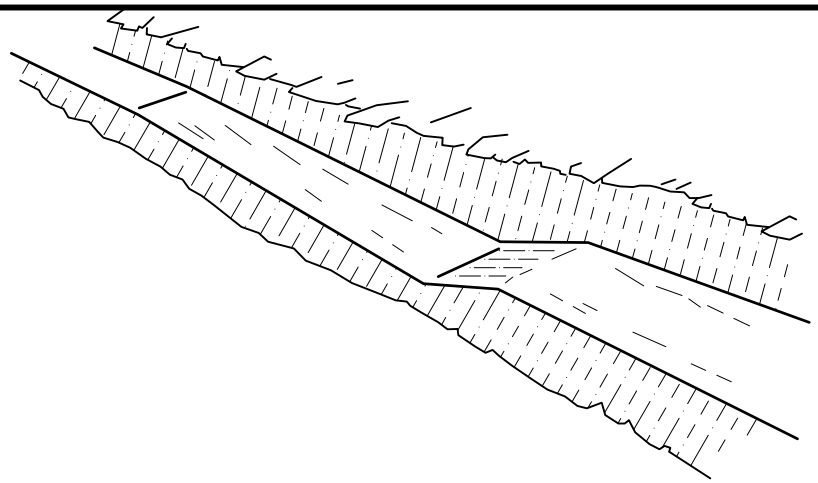
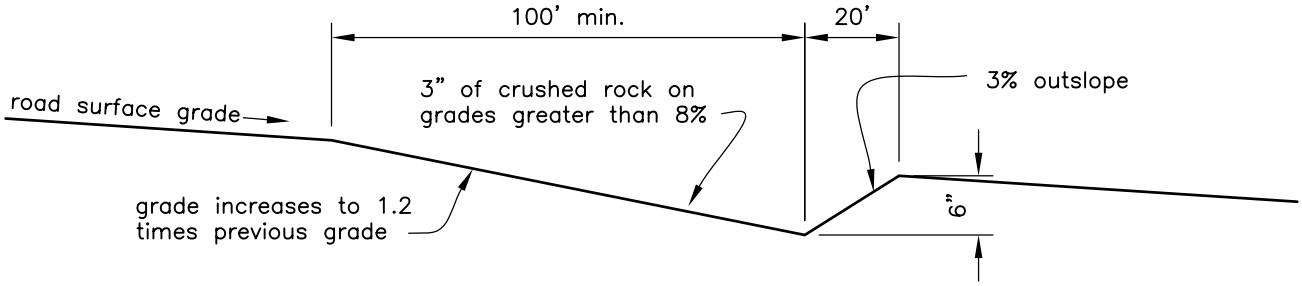
Drainage dips are brad structures used on roads with grades of 10 percent or less.





BROAD–BASED DRAINAGE DIPS

NOTES

1. All water bars shall begin at the intersection of the roadbed and cut slope and run across the entire width of the roadbed.
2. All water bars shall have free flowing outlets.
3. When stakes are used, they shall designate the outlet location.
4. Unless locations re staked by NRCS, the following table shall be used as a guide.

Typical spacing between drainage dips:

$$\frac{400}{\text{slope } \%} + 100 \text{ ft}$$

DISTANCE NEEDED BETWEEN DRAINAGE DIPS

Road grade (percent)	Distance (feet)
2 – 4	300 – 200
5 – 7	180 – 160
8 – 10	150 – 140

5. When a road is within 25 feet of a stream and parallels stream for more than 300 feet, decrease spacing by 25 percent.
6. Where a road is grading down towards a stream, locate the last water bar at about 10 to 30 feet from stream (depending upon filtering capability at the outlet). Place the next water bar upgrade at 75 percent of the spacing guide value.
7. If road has drainage ditch, extend water bars to intercept the runoff.
8. This drawing requires supporting technical documentation prior to use and must be adapted to the specific site.

Drawing not to scale

	Date	CAD FILE NAME	DRAINAGE DIP
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Drawn	3/2005	DRAWING NO.	
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Approved		NRCS U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE	

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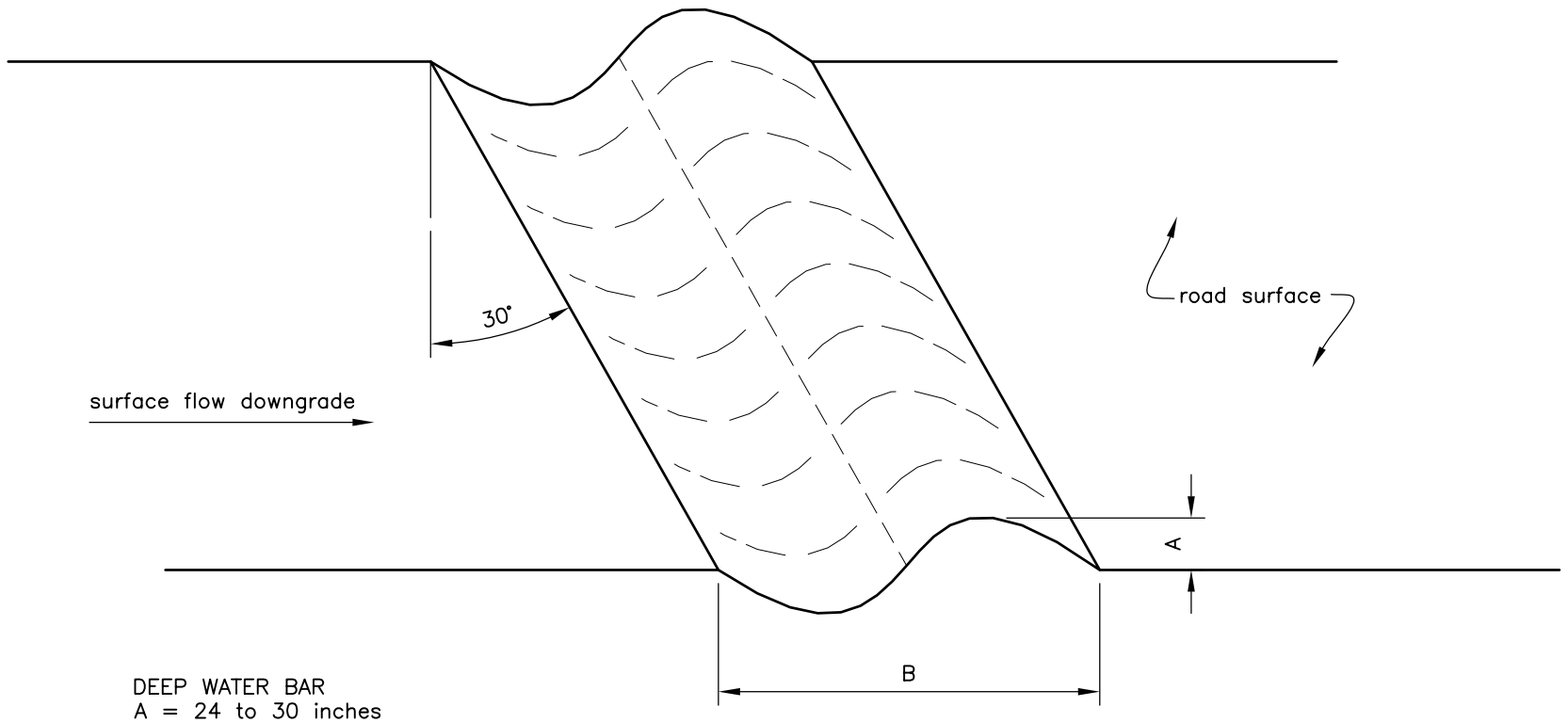
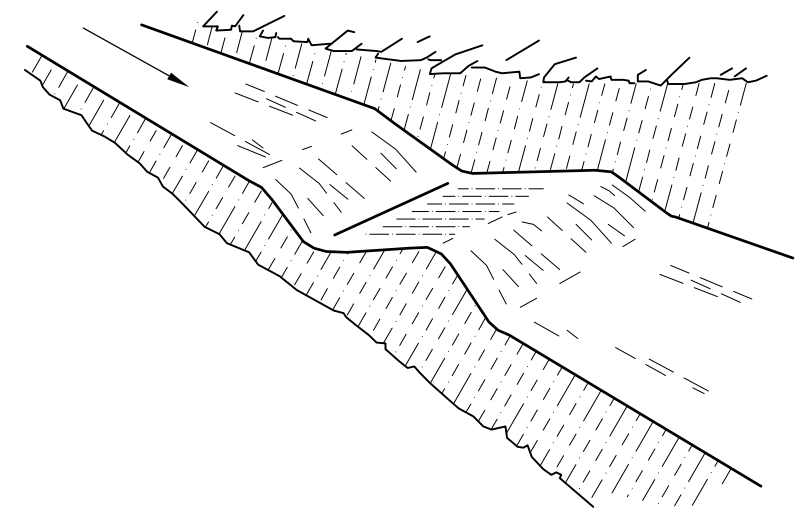


DEEP WATER BAR
A = 24 to 30 inches
B = 6 to 10 feet

SHALLOW WATER BAR
A = 8 to 12 inches
B = 6 to 12 feet

WATER BAR DETAIL



WATER BAR ISOMETRIC

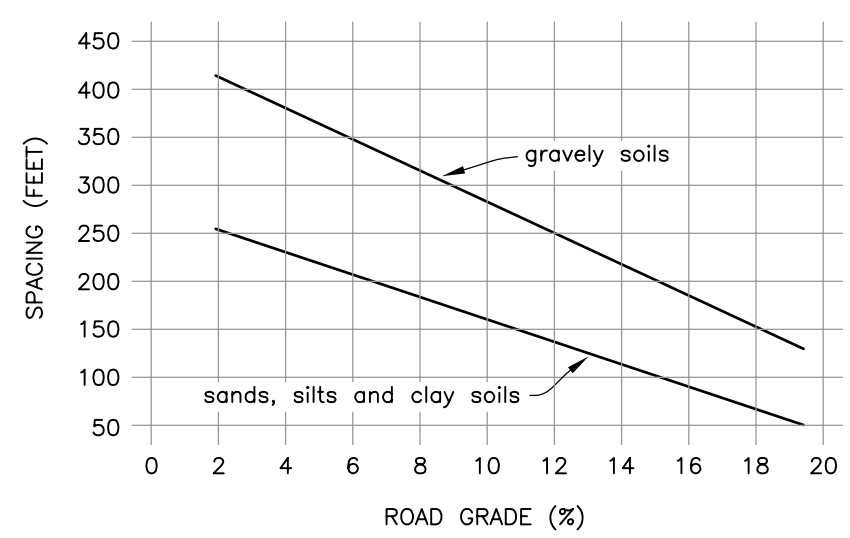
Water bars are narrow structures that may be shallow or deep. Deep water bars are usually used on roads that will be closed for extended periods.

NOTES

1. All water bars shall begin at the intersection of the roadbed and cut slope and run across the entire width of the roadbed.
2. All water bars shall have free flowing outlets.
3. When stakes are used, they shall designate the outlet location.
4. Unless locations are staked by NRCS, the Recommended Spacing table shown on this sheet shall be used as a guide.
5. When a road is within 25 feet of a stream and parallels stream for more than 300 feet, decrease spacing by 25 percent.
6. Where a road is grading down towards a stream, locate the last water bar at about 10 to 30 feet from stream (depending upon filtering capability at the outlet). Place the next water bar upgrade at 75 percent of the spacing guide value.
7. If road has drainage ditch, extend water bars to intercept the runoff.
8. This drawing requires supporting technical documentation prior to use and must be adapted to the specific site.

RECOMMENDED SPACING FOR RELIEF CULVERTS AND WATER BARS BASED ON SOIL TYPES

REFER TO OREGON PRACTICE STANDARD 560, ACCESS ROAD



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Drawn
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Approved
Title
Date 3/2005

WATER BAR

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

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