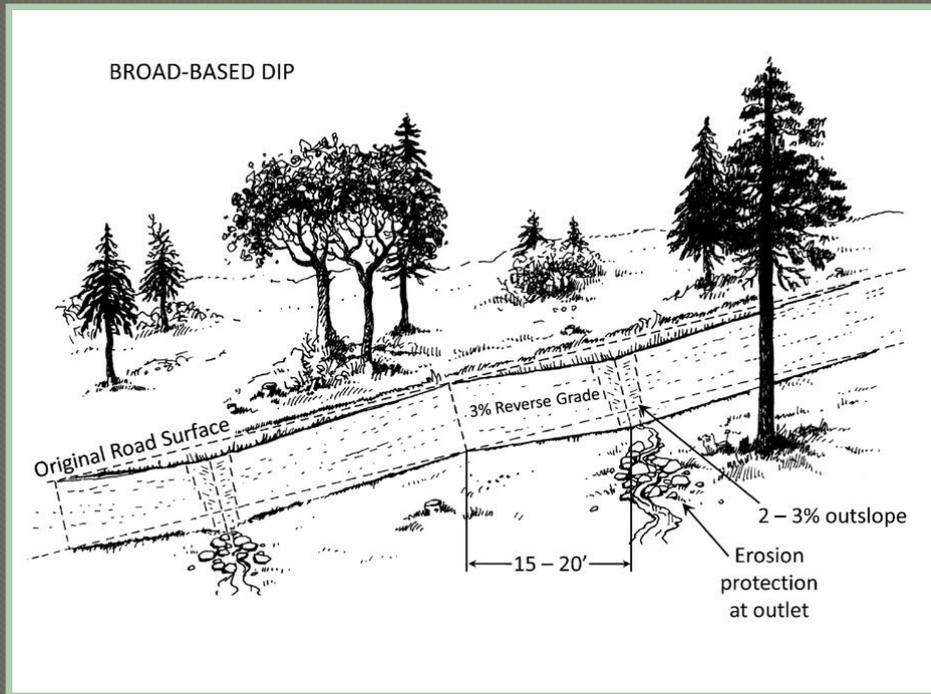


Best Management Practices Pictorial Directory

Texas A&M Forest Service
Water Resources Program

Broad-Based Dip

A dip and reverse slope in a road surface with an out slope in the dip for a natural cross drainage.



- Effective on truck haul roads with low gradients
- Allows higher vehicle speeds than rolling dips

[Click to learn more about "Broad-Based Dips"](#)



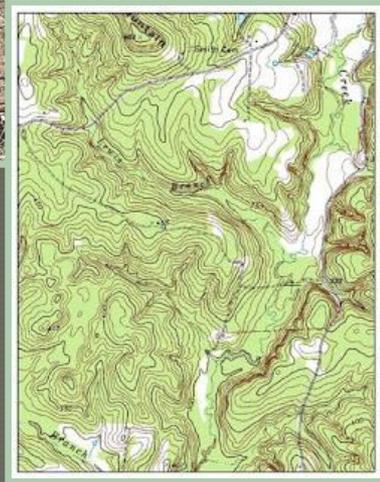
Bridge Mat

Temporary stream crossing made of hardwood cants bolted together that can span short distances.

- Easily installed and removed
- Handles heavy traffic
- Reusable
- Functions under high water conditions

[Click to learn more about "Bridge Mats"](#)

Operating on the Contour



Operating across the slope, following the contour of the land as opposed to operating up and down hills.

- Reduces runoff water and increases infiltration
- Reduces soil erosion
- Important for mechanical site prep and machine planting

[Click to learn more about "Operating on the Contour"](#)

Crowned Road



Road in which the centerline is the highest point on the road plane

- Promotes quick drainage
- Used in combination with side ditches
- Used on high volume permanent roads
- Reduces rutting and extends the longevity of the road

[Click to learn more about "Crowned Roads"](#)

Culverts – Cross Drainage



A conduit or pipe through which surface water is transferred between side ditches for dispersal

- Reduces ditch scouring and maintains road integrity
- Helps manage runoff water on high volume roads

[Click to learn more about "Cross Drain Culverts"](#)

Culverts – Stream Crossing



A conduit or pipe through which surface water can flow under roads that cross streams

- Ideal for permanent crossings on streams with high banks
- Must be sized correctly and installed properly to minimize blowouts
- Allows water flow and fish passage

[Click to learn more about "Culverts as Stream Crossings"](#)

Daylighting Road



Removal of trees along the edges of a road to reduce the shade and promote faster drying of the road surface.

- Reduces ponding of water on roadway
- Makes road more accessible
- Creates more stable roads by preventing rutting

[Click to learn more about “Daylighting Roads”](#)

Flat Car Bridge

Retired rail cars that have had the trucks and wheels removed



- Handles heavy traffic
- Minimizes sedimentation and erosion
- Functions under high water conditions
- Relatively expensive but durable and permanent

[Click to learn more about "Flat Car Bridges"](#)

Logging Slash/Debris



Residual woody material such as limbs, tops, and cull wood that remain in the forest following harvest operations.

- Effective in stabilizing temporary roads
- Readily available and inexpensive
- Can be used to limit access on retired roads

[Click to learn more about "Logging Slash"](#)

Low Water Crossings/Fords



A permanent crossing for low flow streams with low banks and a firm stream bed suitable for driving across

- Approaches should be stabilized
- Geotextile fabric, geoweb, and aggregate may be used to reinforce stream bed
- Low maintenance
- Truck crossing only

[Click to learn more about "Low Water Crossings / Fords"](#)

Outfall Protection



Rip-rap or aggregate placed at the outlet of a culvert or water-control device to reduce erosion

- Reduces scouring of stream channel
- Helps culverts function properly
- Reduces velocity of stream flow

[Click to learn more about "Outfall Protection"](#)

Revegetation

Establishment of grass and/ or legume vegetation on disturbed soil areas not expected to naturally revegetate in time to prevent erosion.



- Effective at stabilizing roads and minimizing erosion
- Seeding rates found in Texas BMP Handbook
- Relatively inexpensive

[Click here to learn more about "Seeding Roads"](#)

[Click here for "Seeding Rates"](#)

Rock Armoring Road

Aggregate placed on road ways to reduce the impact of rain or surface runoff



- Reduces erosion potential
- Improves access during wet conditions
- Relatively expensive
- Primarily used on high traffic roads

[Click to learn more about "Rock Armoring Roads"](#)

Rolling Dip



A shallow depression built diagonally across a light duty road or trail to divert surface water runoff from the road or trail.

- Used on steeper grade roads than broad-based dips
- Provides cross drainage of in-sloped haul roads.
- Can be used in place of cross drain culverts

[Click to learn more about "Rolling Dips"](#)

Streamside Management Zone (SMZ)



≥ 50 foot wide buffer strip of trees along each side of stream bank

- Filters sediment from runoff
- Provides shade to streams and habitat to wildlife
- Provides stability of stream bank

[Click to learn more about "SMZs"](#)

Water Bar



A cross drainage diversion ditch and/or a hump in a trail or road for the purpose of diverting surface water runoff into roadside vegetation

- Turns water runoff, doesn't dam it
- Very effective drainage method on limited use roads, trails, and firelines
- Can be reinforced with hay or grass

[Click to learn more about "Water Bars"](#)

Wing Ditch



A water turnout or diversion ditch constructed to move and disperse water away from the road.

- Disperses water from side ditches to forest floor
- Minimizes scouring along road ditch and helps maintain integrity of road
- Should not discharge into streams or steep slopes

[Click to learn more about "Wing Ditches"](#)