040. ROAD CONSTRUCTION, RECONSTRUCTION AND MAINTENANCE.

01. Purpose. Provide standards and guidelines for road construction, reconstruction, and maintenance that will maintain forest productivity, water quality, and fish and wildlife habitat. (4-5-00)

02. Road Specifications and Plans. Road specifications and plans shall be consistent with good safety practices. Plan each road to the minimum use standards adapted to the terrain and soil materials to minimize disturbances and damage to forest productivity, water quality, fish, and wildlife habitat. (4-5-00)

a. Plan transportation networks to avoid road construction within stream protection zones, except at approaches to stream crossings. Leave or reestablish areas of vegetation between roads and streams. (4-5-00)

b. Roads shall be no wider than necessary to safely accommodate the anticipated use. Minimize cut and fill volumes by aligning the road to fit the natural terrain features as closely as possible. Adequately compact fill material. Dispose of excess material on geologically stable sites. (4-5-00)

c. Plan roads to drain naturally by out-sloping or in-sloping with cross-drainage and by grade changes where possible. Plan dips, water bars, cross-drainage, or subsurface drainage on roads when necessary. (4-5-00)

d. ~~Relief culverts and roadside ditches shall be planned whenever reliance upon~~When natural drainage ~~would~~will not protect the running surface, cut slopes or fill slopes~~. Plan~~, plan roads with relief culverts and roadside ditches. Plan culvert installations to prevent erosion of the fill by properly sizing, bedding and compacting. Plan drainage structures to achieve minimum direct discharge of sediment into streams. ~~(4-5-00)~~( )

e. This~~The following~~ rule applies to new culvert installations ~~of new culverts and re-~~or reinstallations during road reconstructions ~~or reinstallations caused by flood or other~~or because of catastrophic events. ~~Culverts used for t~~Temporary culvert crossings are exempt from the fifty (50) year peak flow design requirement but must be removed ~~immediately after they are no longer needed and~~ before ~~the spring~~seasonal run-off ~~period~~. ~~(4-5-00)( )~~

i. Culverts in ~~installations on~~ fish-bearing streams must provide for fish passage. (4-5-00)

ii. Design ~~culverts for~~ stream crossings to carry the fifty (50) year peak flow using department accepted engineering methods ~~acceptable to the department~~ or ~~determine culvert size by using~~ the culvert sizing tables below. Armor the inlet or use a flared inlet structure on thirty (30) inch or greater diameter culverts. The minimum diameter ~~size~~ culvert ~~required for stream crossings shall not be less than~~allowed is eighteen (18) inches ~~in diameter~~, with ~~the~~one exception in the table below. ~~of that area of the Snake River drainage upstream from the mouth of the Malad River, including the Bear River basin, where the minimum size shall be fifteen (15) inches~~.

CULVERT SIZING TABLE ~~– I~~
~~USE FOR NORTH IDAHO AND THE SALMON RIVER DRAINAGE~~

The left side of t~~T~~his culvert sizing table will be~~is~~ used for the area of the state north of the Salmon River and within the South Fork Salmon River drainage; the right side will be used for the area of the state south of the Salmon River and outside the South Fork Salmon River drainage. It was developed to carry the fifty (50) year peak flow at a headwater-to-diameter ratio of one (1).

North Forest Region and South Fork Salmon River Drainage			South Forest Region
Watershed Area (acres)	**Required Culvert Diameter (inches)**	**Culvert Capacity (in cubic feet/sec)**	**Watershed Area (acres)**
Ditch relief, seeps, springs, wet areas, draws	12	NA	Ditch relief, seeps, springs, wet areas, draws
less than 32	18*	6	Less than 72
33 - 74	24	12	73-150
75 - 141	30	20	151-270
142 - 240	36	32	271-460
241 - 366	42	46	461-720
367 - 546	48	65	471-1025
547 - 787	54	89	1026-1450
788 - 1027	60	112	1451-1870
1028 - 1354	66	142	1871-2415
1355 - 1736	72	176	2416-3355
1737 - 2731	84	260	3356-5335
2732 - 4111	96	370	5336-7410
4112 - 5830	108	500	7411-9565
5831 - 8256	120	675	9566-11780

*Except for that area of the Snake River drainage in Idaho, upstream from the mouth of the Malad River, including the Bear River Basin, where it is fifteen (15) inches.~~Strongly consider having culverts larger than sixty (60) inches designed, or consider alternative structures, such as bridges, mitered culverts, arches, etc.~~

~~Culverts larger than one hundred twenty (120) inches must be designed; consider alternative structures.~~

CULVERT SIZING TABLE - II
USE FOR SOUTH IDAHO

This culvert sizing table is used for the area of the state south of the Salmon River and outside the South Fork Salmon River drainage. It was developed to carry the fifty (50) year peak flow at a headwater-to-diameter ratio of one (1).

Watershed Area (acres)	Required Culvert Diameter (inches)	Culvert Capacity (in cubic feet/sec)
less than 72	18#	6
73 - 150	24	12
151 - 270	30	20
271 - 460	36	32
461 - 720	42	46
721 - 1025	48	65
1026 - 1450	54	89
1451 - 1870	60	112

Strongly consider having culverts larger than sixty (60) inches designed, or consider alternative structures, such as bridges, mitered culverts, arches, etc.

Watershed Area (acres)	Required Culvert Diameter (inches)	Culvert Capacity (in cubic feet/sec)
1871 - 2415	66	142
2416 - 3355	72	176
3356 - 5335	84	260
5336 - 7410	96	370
7411 - 9565	108	500
9566 - 11780	120	675

Culverts larger than one hundred twenty (120) inches must be designed; consider alternative structures.

See exception for southeast Idaho in Subparagraph 040.02.a.ii. of this rule. (4-5-00)

iii. Relief culverts, and those used for seeps, springs, wet areas, and draws shall not be less than twelve (12) inches in diameter for permanent installations. (7-1-96)

f. On existing roads that are not reconstructed or damaged by catastrophic events, landowners or

operators are encouraged, but not required, to replace or provide mitigation for culverts that do not provide for fish passage in accordance with Subparagraph 040.02.e.i. or cannot carry the fifty (50) year peak flow of Subparagraph 040.02.e.ii. (4-11-06)

g. Plan and install sStream crossings~~, including fords, shall be minimum in number and planned and installed~~ in compliance with the Stream Channel Protection Act~~,~~ (Title 42, Chapter 38, Idaho Code), Subsection 030.07.b. and ~~with~~ the culvert sizing requirements of ~~Paragraph~~Subsection 040.02.e. Fords are ~~an~~ acceptable stream crossing structures on small, shallow streams, with gradients~~flat,~~ less than four percent (4%) ~~gradients~~. For fords~~: should cross the stream at right angles. Approaches shall be adequately~~ cross-drained and rock~~ed~~ the road surface on each side of the stream for at least seventy-five (75) feet for Class I and at least thirty (30) feet for Class II streams; minimize sediment delivery to streams by~~. During times of salmonid spawning and egg incubation or to protect active domestic water diversions, use shall be~~ limited~~ed~~ing use to low water, dry, or frozen conditions; minimize ~~and~~ hauling or equipment crossing trips ~~limited to minimize sediment delivery to streams~~during times of salmonid spawning and egg incubation, or to protect active domestic water diversions. ~~(4-11-06)~~( )

h. Avoid reconstruction of existing roads located in stream protection zones, except for approaches to stream crossings, unless it will result in the least long-term impact on site productivity, water quality, and fish and wildlife habitat. Reconstruction of existing roads in stream protection zones will require a variance. Reusing existing roads in stream protection zones for skidding or landing logs shall require a variance. Reusing existing roads in stream protection zones for hauling fully suspended logs only, where no reconstruction will occur, does not require a variance. (4-11-06)

03. Road Construction. Construct or reconstruct roads in a manner to prevent debris, overburden, and other material from entering streams. (4-5-00)

a. Construct r~~R~~oads ~~shall be constructed~~ in compliance with the planning guidelines of Subsection 040.02.

~~(7-1-96)~~( )

b. Clear all debris generated during construction or maintenance which potentially interferes with drainage or water quality. Deposit excess material and slash on geologically stable sites outside the stream protection zones. (4-5-00)

c. Where sediments would enter streams, stabilize exposed material (road surface, cut slopes, ~~or~~ fill slopes, borrow pits, waste piles, etc.) ~~is potentially erodible, and where sediments would enter streams, stabilize~~ prior to fall or spring runoff. Install supplemental stabilization measures such as seed and mulch, slash mats, or rock. Rock the road surface through the entire SPZ over Class I stream crossings.~~by seeding, compacting, rocking, riprapping, benching, mulching or other suitable means~~. ~~(4-5-00)~~( )

d. ~~In the construction of~~ Compact road fills~~, compact the material to reduce the entry of water, minimize erosion, and settling of fill material~~. Minimize ~~the amount of~~ snow, ice, or frozen soil buried in embankments. S~~No s~~ignificant ~~amount of~~ woody material is not allowed in ~~shall be incorporated into~~ fills, but slash ~~. Available slash and debris~~ may be ~~utilized~~used as a filter windrow along the fill toe ~~of the fill~~ in compliance with ~~, but must meet the requirements of~~ the Idaho Forestry Act and Fire Hazard Reduction Programs.~~Laws~~, Title 38, Chapters 1 and 4, Idaho Code.~~(4-5-00)~~( )

e. During and following operations on out-sloped roads, retain out-slope drainage and remove berms on the outside edge except those intentionally constructed for protection of road grade fills. (8-13-85)

f. Provide for drainage of quarries to prevent sediment from entering streams. (8-13-85)

g. Construct cross drains and relief culverts to minimize erosion ~~of embankments~~. ~~Installation of erosion control devices should be concurrent with road construction.~~ Use riprap, vegetative matter, downspouts, and similar devices to minimize erosion of the fill. Install drainage structures or cross-drain incomplete~~d~~ roads ~~which are subject to erosion~~ prior to fall or spring run-off. ~~Install relief culverts with a minimum grade of one percent (1%).~~If effective forest floor filtration is not available within SPZs, install supplemental filtration at drainage structure outlets

or additional drainage structures outside SPZs to prevent road surface erosion from entering streams.

~~(4-5-00)~~( )

h. Postpone e~~E~~arthwork or material hauling ~~shall be postponed~~ during wet periods if~~, as a result,~~ erodible material would enter streams. ~~(4-5-00)~~( )

i. ~~Cut slopes shall be reconstructed to minimize sloughing of material into road surfaces or ditchlines~~. Remove or stabilize cut slope material subject to sloughing concurrent with ~~the~~ construction ~~operation~~. ~~(4-5-00)~~( )

j. Construct full-bench r~~R~~oads~~,~~ ~~constructed on slopes greater than sixty percent (60%) in unstable or erodible soils shall be full benched~~ without fill slope disposal on slopes greater than sixty percent (60%) in unstable or erodible soils. ~~At stream and draw crossings keep fills to a minimum.~~ A variance is required if a full bench is not used. ~~(4-5-00)~~( )

04. Road Maintenance. Conduct regular preventive maintenance operations to minimize disturbance and damage to forest productivity, water quality, and fish and wildlife habitat. (4-5-00)

a. Place all debris or slide material associated with road maintenance in a manner to prevent their entry into streams. (4-5-00)

b. Repair slumps, slides, and other erosion sources causing stream sedimentation to minimize sediment delivery. (4-5-00)

c. Active forest roads~~. An active road is a forest road being~~are used for hauling forest products, rock and other road building materials. Conduct t~~T~~he following maintenance on active~~shall be conducted on such~~ roads.
~~(8-13-85)~~( )

i. Culverts and ditches shall be kept functional. (8-13-85)

ii. Crown, out slope, in-slope, or cross-drain road surfaces d~~D~~uring and upon completion of seasonal operations~~, the road surface shall be crowned, out-sloped, in-sloped or cross-ditched, and~~. Remove berms ~~removed~~ from the outside edge except those intentionally constructed for protection of fills.
~~(4-5-00)~~( )

iii. Maintain t~~T~~he road surface ~~shall~~ and postpone hauling during wet periods ~~be maintained~~ as necessary to minimize erosion of the subgrade and ~~to~~ provide proper drainage. ~~(8-13-85)~~( )

iv. Apply road-surface stabilizing materials in a way that prevents their entry into streams.~~Hauling shall be postponed during wet periods if necessary to minimize sediment delivery to streams.~~
~~(4-5-00)~~( )

v. During active maintenance, ensure road surfaces within SPZs area sufficiently stabilized. Install supplemental filtration at drainage structure outlets within SPZs if effective forest floor filtration is not available.~~If road surface stabilizing materials are used, apply them in such a manner as to prevent their entry into streams.~~
~~(4-5-00)~~( )

d. Incidental ~~Haul Road. An incidental~~ haul roads are roads with a ~~is a multi-use road (residential traffic; its~~ primary purpose ~~is~~ other than forest practices~~)~~ that are used for ~~has log~~ hauling logs during active harvest ~~activities~~. Active road maintenance requirements apply. Once active road maintenance is completed, no other maintenance is required under the Forest Practices Act (FPA). ~~(4-11-06)~~( )

e. Inactive forest roads~~. An inactive road is a forest road (primary purpose is for forest practices)~~ are no longer used for commercial hauling, but maintained for access ~~(e.g., for fire control, forest management activities, recreational use, and occasional or incidental use for minor forest products harvesting)~~. The following maintenance shall be conducted on inactive roads. ~~(4-11-06)~~( )

i. When~~Following termination of~~ active use is over, clear ditches and culverts, ~~shall be cleared and the road surface shall be~~ crown~~ed~~, out ~~-~~slope, ~~d or~~ in-slope~~d~~, cross-drain~~water barred~~ or otherwise treat the road surface~~left in a condition~~ to minimize erosion. Maintain d~~D~~rainage structures ~~shall be maintained thereafter~~ as needed. ~~(7-1-96)~~( )

ii. The roads may be permanently or seasonally blocked to vehicular traffic. (8-13-85)

f. Long-term ~~Inactive Roads. A long-term~~ inactive roads ~~is~~are forest roads that will not ~~intended to~~ be used soon, ~~again in the near future~~ but ~~will likely~~may be used again; ~~at some point in the future. N~~no subsequent maintenance ~~of a long-term inactive road~~ is required following~~after the following procedures are~~ completion~~ed~~ of the practices below: ~~(4-5-00)~~( )

i. ~~The road is left in a condition suitable~~ Out slope, cross-drain, seed or treat the surface to control erosion ~~by out-sloping, water barring, seeding, or other suitable methods~~. ~~(8-13-85)~~( )

ii. Block t~~T~~he road ~~is blocked~~ to vehicle~~ular~~ traffic. ~~(8-13-85)~~( )

iii. The department may require the removal of bridges, culverts, ditches and unstable fills. Any bridges or culverts left in place shall be maintained by the landowner. (4-5-00)

g. ~~Permanently Abandoned Roads.~~ Permanently abandoned roads are forest roads not intended to be used again. Remove a~~A~~ll drainage structures ~~must be removed~~ and ~~roadway sections~~ treat~~ed so that~~ road surfaces to minimize erosion ~~and landsliding are minimized~~.

~~(4-5-00)~~( )

i. ~~Drainage structures shall be removed and~~ Restore stream gradients ~~restored~~ to their natural slope. ~~(4-5-00)~~( )

ii. Treat t~~T~~he road ~~prism shall be treated~~surface to break-up compacted areas. ~~(4-5-00)~~( )

iii. Pull-back f~~F~~ill slopes of roads within stream protection zones ~~shall be pulled back~~ to a stable configuration unless long-term stability is evident~~has already been achieved~~. ~~(4-5-00)~~( )

iv. Pull-back u~~U~~nstable side-hill fills ~~shall be pulled back~~ to a stable configuration. ~~(4-5-00)~~( )

v. Control d~~D~~itch-line erosion ~~shall be controlled~~ by cross-~~ditch~~draining, out sloping, or regrading to eliminate ditches.
~~(4-5-00)~~( )

vi. Stabilize soil exposed ~~All bare earth areas created~~ by regrading, ripping, and drainage removal ~~shall be stabilized~~ by seeding, mulching, armoring, or other treatment~~suitable means~~. ~~(4-5-00)~~( )

05. Winter Operations. ~~Due to risk of~~ To minimize erosion and prevent damage ~~from~~to roads and constructed skid trails ~~inherent in~~from winter logging, ~~at minimum the following shall apply~~operators must implement the practices below: ~~(4-21-92)~~( )

a. ~~Roads to be used for winter operations must have adequate surface and cross drainage I~~installed adequate road drainage prior to winter operations. ~~Drain winter roads by installing~~ using rolling dips, drive~~a~~able cross-drains ~~ditches~~, open-top culverts, out slope~~s~~ing, or ~~by~~ other ~~suitable means~~methods. ~~(4-21-92)~~( )

b. Maintain roads~~During winter operations, roads will be maintained as needed~~ to keep the ~~road~~ surface drained during thaws or break-up. This may ~~include~~require active maintenance of existing drainage ~~structures~~, drain~~opening of drainage~~ holes in snow berms, and installation of additional cross-drain~~age~~s ~~on~~or treatment of the road surface~~s by ripping, placement of native material or other suitable means~~. ~~(4-21-92)~~( )

041. -- 049. (RESERVED)