



Table 1

Culvert Diameter (m)	Average Size of Clear Stone (mm)	Gravel Thickness (mm)
Up to 1.2 (4 feet)	150 (use type C1) (6 inch)	300 (12 inch)
1.2 - 2.1 (4-7 feet)	300 (12 inch)	450 (18 inch)
2.1 - 3.0 (7-10 feet)	600 (24 inch)	750 (30 inch)

Notes:

- Construct culvert and pool 'in the dry' as per typical details. Depth of up to 2.5 m will provide better cover (1 m minimum depth). Culvert should backflow 300mm. Rootwads may also be used to protect the bank and enhance fish cover.
- Bottom of pool, outflow channel, and adjacent banks to 0.5 m above the low-flow outlet control should be covered with Clear Stone that is sized according to flood velocities produced by a one in a hundred year storm (hence dependent upon culvert size; see Table 1 above). Gravel depth will also vary depending on flow, from approximately 300 to 750 mm. Note that no filter fabric or any form of geotextile shall be used in the construction of the pool.
- The stream bottom at the outflow channel (transition zone to the existing stream) shall contain finer gravel approximating that in the existing stream (to fill the voids in the Clear Stone and thereby prevent problems with fish passage during low flows).
- Install boulder cluster in the pool (3 to 5 pieces; lead rock up to 1000 mm diameter; remaining rocks should be 750-850 mm diameter). Centers of boulders should be 2 m apart.
- (A) The pool outlet channel shall be designed to have similar cross-sectional area and shape as the notch in culvert baffles. The top of the most downstream baffle will be at the same elevation as the streambed at the top of the pool outlet channel.
(B) In non-baffle culverts, the width of the pool outlet channel shall be a maximum of one third of the culvert's width (W) and the invert of pool outlet shall be 0.2W higher than the culvert invert.
- Following completion of the pool and outflow channel, place "Specialty Topsoil for Riparian Zone Vegetated Buffer" in a 3 m-wide, 200 mm-thick, layer around the pool (see Special Provision for Specialty Topsoil). Seed and cover immediately afterwards (see below).
- Seed or hydroseed the area as per Standard Specification Division 7, Section 5.
- Place dry mulch or erosion control blanket (ECB) over the "Specialty Topsoil" as per Standard Specification Division 7, Sections 6 and 7. For slopes greater than 3:1, use ECB.
- Place shrubs, vegetation transplants and, or willow live-stakes in the mulch layer or slits in the ECB as per specifications of TIR's Vegetation Specialist. Spacing shall typically be at 0.5 m centers over approximately 30% of the area.
- As directed by TIR's Vegetation Specialist, ensure watering of the new vegetation and transplants until the vegetation is established.
- All dimensions are in millimetres unless otherwise noted.



No.	REVISION

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ENHANCED ENERGY DISSIPATION POOLS