

Suggested Guidelines for the Installation of Driveway and Culverts

When installing a culvert there are two main aspects that need to be considered; first is to maximize the natural flow of the ditch by selecting an adequate size culvert. Second is to prevent runoff from the driveway onto the main road by proper sloping of drive.

These instructions are a suggested guideline to install a driveway and swale/culvert if needed. It is recommended that the property owner consult/hire an independent licensed contractor to determine if a culvert is necessary and to make sure of the correct culvert sizing and installation. To ensure the driveways are installed to allow for proper drainage, a refundable deposit is required. This bond must be in the form of a personal, business, certified check or money order made payable to the HRPOA. The amount of bond required is \$2500 in addition to the \$100 architectural fee and is due when submitting plans for review. This bond will be refunded upon approval of the completed driveway entrance and issuance of a Certificate of Occupancy (C of O). If the property is sold prior to obtaining a C of O, a refund will be granted at time of transfer of ownership.

Construction of the Driveway Entrance

The applicant is responsible for all aspects of construction, including, but not limited to: supply of culvert pipe and backfill materials, stone, labor, traffic control and environmental measures. The driveway is to be sloped so that any water exiting the property via the driveway will enter the ditch rather than run onto the road. While the work may complete by the property owner or a by a hired contractor, the ultimate responsibility for the proper installation rests with the lot owner.

Materials

a) Culvert Pipe: unless warranted by specific conditions the pipe size for a new culvert installation should be a minimum of 15 in diameter in either aluminized corrugated steel or aluminum alloy, smooth inside wall concrete or double walled smooth interior High Density Polyethylene (HDPE) pipe. The Driveway should be a minimum of 20 ft. wide (per fire department requirements), the length and size of pipe will vary with the depth and width of the ditch.

b) Backfill: material should be $\frac{3}{4}$ - 1 in. gravel or good native soil with no stones over 3 in. in the largest dimension.

c) Top Material: should be Type II road base or $\frac{3}{4}$ - 2" gravel, sloped to prevent water from running onto the roadway. Minimum slope requirement is 2%. If pavement is desired, it should consist of a minimum of 3" of hot mix asphalt on a bed of 3" of gravel.

d) Crushed stone: material should be 2 – 6" stone.

Bed Excavation

a) Prepare an area for the pipe in the lowest point of the ditch, aligned with the direction of flow.

b) All organic material (grass, bushes, etc.) under the length of the pipe should be removed before placing pipe.

c) Excavate ditch to a depth of 6 in. below existing flow line of ditch.

d) Fill excavated area with 5 inches of Type II gravel.

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Pipe Installation

- a) Place pipe on the prepared bed of gravel, following the natural slope of the ditch. This should allow the pipe flow line to be approximately 1 in. below the flow line of the ditch.
- b) If two or more pieces of pipe are required, join with approved couplers, available from the pipe manufacturer. Install couplers as per manufacturer's instructions.
- c) Backfill approximately 6 in. deep on each side of the pipe and compact with a vibrating compactor. Continue to backfill in 6 in. layers and compact on each side of the pipe before adding more fill. Compacted fill must be kept even on both sides of pipe and must extend the width of the ditch. When backfill material is very granular, clay material should be used to seal the ends to prevent water from flowing through the backfill material.
- d) Install flared end pieces if required. Place crushed stone across the upstream and downstream ends of the culvert installation. Material should extend the at least width of the culvert or end piece and minimum of 3 ft outward from ends to prevent erosion. Concrete end walls may only be used on the installation with approval of the Road Committee Supervisor.
- e) Once backfilled, place top material. Backfill plus top material should extend a minimum of 6" over the top of the pipe.

Inspection

A driveway is considered to be complete when the following conditions have been met:

- Culvert is in new condition with no major dents or bends through its length.
- Culvert is of the adequate size.
- Crushed stone, at least 1.5" in diameter and 3" deep, is placed on the ends to width of the culvert or end pieces. Other end treatments may be used with prior approval of Road Committee.
- There is at least 6 in. of cover over the pipe with the top 3 in being gravel with stones no larger than 1 – 3" gravel
- Driveway is level with the road shoulder where it meets the road.
- The ditch and road shoulder are left in a neat condition.
- The driveway is sloped so that any water exiting the property via the driveway will enter the ditch rather than run onto the road.

Once the driveway entrance is completely installed, notify the Board to arrange for an inspection. If the Board is satisfied with the installation, approval will be recorded for deposit refund when C of O is issued. If not, you will be notified of the deficiencies and asked to correct them. A reinspection will then be required.

If the driveway is not installed properly after two inspections, Board reserves the right for the road committee to install the culvert. In this case, the bond or portion of the bond (based on expense to install culvert) will not be refunded.

HRPOA Responsibilities

After the culvert is installed and approved, should the culvert deteriorate from age and use, the lot owner will replace or repair the entrance as needed at lot owner expense.

When replacing the entrance, any existing end treatments may be removed and replaced with stone as per above. Replacement pipe will be of the same as prior used or larger if drainage is adequate

Frost heave of the culvert need only be corrected if it is causing a problem with water flow in the ditch.

The owner is expected to keep the culvert free from obstructions, maintain the stone on the ends and keep the top graded as to prevent water flow onto the roadway.

If damage occurs to entrance caused by Road crew during plowing or grading please notify HRPOA board as soon as possible and repairs will be made at association cost.