

**To: ALL H.Q. DIRECTORS: Prof. Services, Planning & Major Project**  
**ALL REGIONAL MANAGERS: Prof. Services, Planning & Operations**  
**ALL DISTRICT HIGHWAYS MANAGERS**

**SUBJECT: Infilling of road-side ditches by property owners**

**BACKGROUND:**

Land owners adjacent to Provincial Highways often find the road-side ditch is inconvenient when maintaining their property and aesthetically displeasing. The purpose of the policy is to ensure that where infilling of the ditch, by the property owner, is permitted it complies with Ministry Standard Specifications and ensures proper drainage is maintained.

**POLICY**

Infilling of road-side ditches by adjacent property owners, at their own cost, is generally permitted subject to the following exceptions:

**Exceptions - Infilling of ditches will not be permitted:**

- Where the ditch forms an integral part of a flood control system.
- Where water storage in the ditch provides a significant reduction in peak flow rates.
- Within 3 metres of a cross culvert, unless an approved culvert inlet or a manhole is installed.
- Adjacent to any road other than rural minor roads and secondary roads, and urban minor and local streets.
- In areas used as fish habitat, unless approval by the appropriate environmental agencies is obtained.
- In areas not approved by the District Highways Manager.

**Access**

Access to properties will be limited to designated driveways.

**Usage**

Highways Right of Way will not be used for commercial purposes.

**Ownership**

The ditch infilling works, once installed and approved, become the property of the Ministry.

### Rights of Ministry

The Ministry reserves the right to change, raise, lower or realign the highway in such a way as to render the ditch infilling works ineffective without any recompense to the property owner. However, where MoTH disturbs works done by a property owner to Ministry standards, MoTH will, where feasible, replace the works to the approximate extent of the owner's original works.

### Standards

All works on Ministry right of way will be to appropriate Ministry Standards. At the discretion of the District Highways Manager, ditch infilling proposals will be designed and inspected by a Professional Engineer experienced in Hydrology, and registered in the Province of B.C. All costs incurred will be the responsibility of the property owner. The P.Eng. is to certify that the works have been installed to MoTH standards.

### Approvals

It is the responsibility of the property owner to contact the environmental agencies and where necessary obtain their approvals for the works.

### Reference

Design and Construction guidelines for Ditch Infilling are contained in the attached Appendix A, \*Design standards and specifications for infilling of roadside ditches by private property owners', and Appendix B, 'Hydrology'.

\*This material will eventually be included in the Highway Engineering Design Manual

### Contact:

John Morley, P.Eng.  
Senior Hydraulics Engineer  
Highway Engineering  
Phone: 387-7763  
Fax: 356-7798



E. A. Lund, P.Eng.  
Chief Highway Engineer

c.c. A.D.M. Highway Operations  
c.c. A.D.M., Planning & Major Projects  
c.c. All Regional Directors  
JHM

**APPENDIX A:**

**Design standards and specifications for infilling of roadside ditches by private property owners**

.1040.01 General - This section of the Province of British Columbia "Highway Design Manual" describes requirements for private landowners who apply and receive a permit to infill their roadside ditches, replacing the ditch with a culvert on Ministry right-of-way.

The property owner shall submit a design for review and approval and where required by the District Highway Manager employ a Professional Engineer to design and supervise construction of ditch infilling works. Roadside ditch infilling, when permitted by the Ministry, shall conform to the applicable MoTH Standard Specifications for both materials and installation of culverts, including but not limited to the following:

.02 Sizing- Culverts shall be a minimum of 400 mm in diameter. Driveway culverts which do not meet this standard shall be upgraded.

.03 Installation - Invert elevation shall be a minimum of 650 mm below grade of centreline, except where otherwise approved by the Ministry representative. Culvert grade shall generally conform to existing ditch grade, with a desirable minimum grade of 0.5%. Bedding shall conform to MoTH Standard Specifications, including trench excavation and refilling to form a gravel bed (see figure 1040.1).

In locations where the road subgrade is not free draining gravel, a 300 mm thick blanket of drain rock shall be placed on the road side bank of the ditch to a minimum depth of 1 metre below highway grade. A 100 mm diameter perforated pipe shall be placed in the toe of the drain rock running parallel to the culvert, and shall be drained into the culvert by means of a T or Y junction every 30 metres. Clean outs for the perforated pipe shall be installed every 30 metres. Prior to backfilling Ministry staff or the PEng shall be contacted and the above works inspected.

.04 Cross culverts- Ditch infilling shall not be allowed within 3 metres of cross culverts unless an approved culvert inlet or a manhole is installed.

.05 Inlet and outlet ditches- Existing inlet and outlet ditches or swales, to culverts, roadside ditches and cross ditches shall not be blocked by ditch infilling.

.06 Backfilling: - Methods and material used in backfill shall comply with MoTH specifications. Maximum extent of the backfill will be the breakpoint of the road shoulder.

The finished ground profile will form a swale parallel to the highway, with a minimum cross slope down from the highway shoulder of 5% and a free-draining longitudinal grade.

A typical cross section is shown in figure 1040.1.

.07 Catch basins- Catch basins with removable grates at ground level (for surface drainage and culvert cleanout) shall be installed in the bottom of the swale to drain into the culvert at intervals of 20 metres, immediately upstream of driveways, or as otherwise required.

.08 Perimeter and roof drains- Any roof or perimeter drains which enter the ditch must be joined into the culvert above the centreline of the culvert. Cleanouts will be installed at the edge of the Right of Way.

.09 Planting- Planting of shrubs or trees by property owners or their agents on Highways right-of-way will not generally be permitted, except as approved by the District Highway Manager.

.10 Traffic control- Appropriate traffic control, signage, safety equipment and clothing must be used during construction.

**APPENDIX B:**

**Section 1041    Hydrology\***

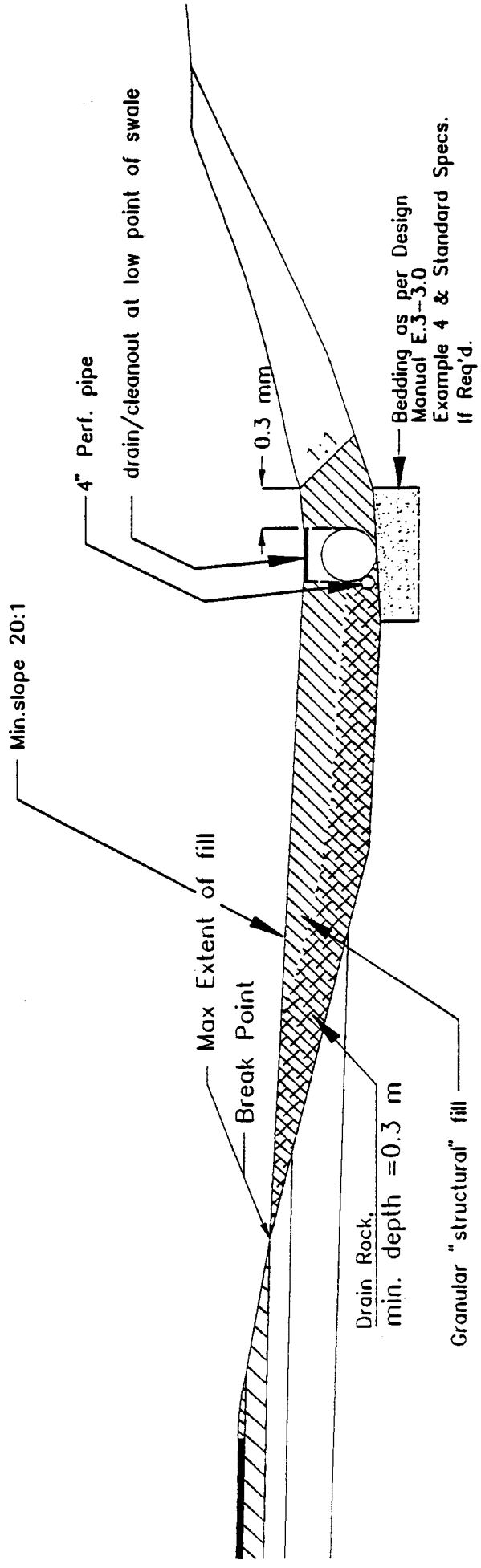
.01 Where ditches take flow from areas other than the highway right-of-way, these areas will be assumed for design purposes to be developed to the full potential of their zoning.

.02 For drainage areas less than one hectare the culvert will be designed for the 10 year return period rainfall.

.03 For drainage areas greater than one hectare the culvert will be designed for the 100 year return period rainfall.

\* This section will eventually be superseded by reference to the hydrology section of the Highway Design Manual which is not yet written.

FIGURE 1040.1



DITCH INFILLING/CULVERTING