NZ TRANSPORT AGENCY
WAKA KOTAHI

NOTES FOR THE SPECIFICATION FOR PIPE CULVERT CONSTRUCTION

These notes are for guidance and must not be included in contract documents.

1. SCOPE

This specification attempts to cover all pipe culvert types and sizes. Consideration should be given in specifying in the specific contract documents the pipe installation in accordance with a relevant standard that will result in improved methods for construction. For example, NZS4406:1986 *Helical lockseam corrugated steel pipes design and installation* includes the installation of corrugated metal culvert pipes down to 300 mm and may be more appropriate in some circumstances. However, the relevant Clauses in this specification that are not covered in a standard for installation will still need to be complied with.

The Engineer may specify in the specific contract documents a relevant national or international standard for pipe installation that is not stated in this specification, provided the standard is easily sourced and is considered to be appropriate.

2. MATERIALS

2.1 Pipe Types

2.1.1 NZS/AS3725:2007 *Design for Installation of buried concrete pipes* has very specific requirements for concrete pipes. This standard gives specific tests for compaction requirements for selected fill (both cohesive and non-cohesive materials). The Department of Building and Housing approved document *B1 Structures, Section 11.0 Drains* gives modifications to NZS/AS 3725 that include New Zealand standard tests. NZS/AS 3725 may be specified by the Engineer in the specific contract documents in replace of some of the requirements of this specification if this standard is considered to be appropriate.

2.1.3 AS/NZS 2566 *Buried flexible pipelines* (Parts 1 and 2) is now issued. HDPE and PVC pipes are flexible similar to corrugated steel pipes and therefore require careful control during construction to ensure correct installation techniques and backfill are used. For small drainlaying contract's where installing a flexible pipe to the correct technique is difficult and time consuming consideration may be given to using a stiffer pipe.

3. BEDDING LAYING AND JOINTING PIPES

3.1 Bedding

The Engineer should specify appropriate bedding material in the contract documents and should be based on the design assumptions, pipe type and size, appropriate standards, manufacturer's guidelines and best practices. Consideration should also be given to specifying a flowable soilcrete or concrete haunching to a certain depth above the bedding level to compensate for inadequate compaction at the base of the pipe.

4. BASIS OF PAYMENT

The basis of payment is considered to be very contract specific (dependent on job size and type) and Engineers are encouraged to write a basis of payment for pipe culvert construction that is simple and considered to be appropriate. For example, it is common to specify payment as a lump sum for large culverts and for small culverts a unit rate per metre length of pipe.