

INSTRUCTIONS FOR USE

Construction Specification 42 – Concrete Pipe Conduits and Drains

1. Applicability

Construction Specification 42 is applicable to all concrete pipe conduits except principal spillway conduits for earth dams or conduits under deep fills. It may be applied to culverts, pipe collector systems in structure drains, irrigation pipelines, or parts of land drainage systems.

2. Material Specifications

The following material specifications complement Construction Specification 42:

- 535 – Preformed Expansion Joint Filler
- 536 – Sealing Compound for Joints in Concrete and Concrete Pipe
- 541 – Reinforced Concrete Pressure Pipe
- 542 – Concrete Culvert Pipe
- 543 – Nonreinforced Concrete Pipe (concrete irrigation pipe, drainage pipe, and drain tile)

Portland cement concrete for bedding and cradles shall conform to Construction Specification 31, Concrete for Major Structures, or Construction Specification 32, Structure Concrete.

3. Included Items

Items to be included in contract specifications and drawings follow:

- a. Line and grade of the conduit. Include statement in Section 11 that pipe shall be laid so that there is no reversal of grade between joints unless shown on the drawings
- b. Details of concrete bedding or cradle, including class of concrete, joint details, and type of expansion joint filler
- c. Details of earth, sand, or gravel bedding, including description and grading limits of the bedding material
- d. Excavation and backfill requirements, if applicable
- e. Pay limits or actual limits for excavation and backfill, if required
- f. Special requirements for foundation preparation

- g. Type of pipe or tile by name and class (see appropriate reference specifications)
- h. Size of pipe or tile
- i. Type of cement for pipe or tile if a certain type is necessary because of soil, water, or other environmental conditions
- j. Strength of pipe, if not covered by reference specifications, in terms of three-edge-bearing load and internal pressure as appropriate
- k. Type of joint and details of banded joints or other special joints
- l. Details of wall fittings and other special fittings and appurtenances
- m. Test pressure, if applicable
- n. Method of measurement and payment if the standard specification includes more than one method

4. Methods

Section 5a, Rubber Gasket Joint, Pressure Pipe

Method 1 – The preferred method of stating the instructions for connecting pipe sections

Method 2 – Intended for use when special problems are anticipated or when the pipe to be furnished requires special methods of connection

Section 9, Pressure Testing

The methods are self-explanatory. The choice of method must be consistent with the function of the conduit and the required operating pressure.

Section 10, Measurement and Payment

Method 1 – Must be used when it is desired to base payment on the measurement of the laid length of the conduit.

Method 2 – Must be used when it is desired to base payment on the summation of the nominal laying lengths of the pipe sections used.

Sections 5a, 9, and 10

When specifications are prepared using electronic procedures and all methods but one are deleted for use in a contract specification, delete from the last paragraph "All Methods – The following provisions apply to all methods of measurements and payment." Left justify the remaining text.

5. Items of Work and Construction Details

Starting at the top of page 42–6, prepare and outline job specific "Items of Work and Construction Details" (IWCD) in accordance with these instructions. For ease of utilization, the use of recyclable color paper for the IWCD should be considered.