

Design Standards Letter

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Section/Plan No.: None

Subject: Special Provisions and Instructions Pipe Culvert Design

Body

ALL DIVISION, DISTRICT AND URBAN ENGINEERS AND CHIEF COUNSEL

Transmitted herewith are several copies of two special provisions concerning culvert pipes which will be used for all projects, where applicable, as hereinafter described.

For the purpose of the following discussion, the term "High Type" pavement will be construed to mean only asphaltic concrete or Portland cement concrete. In general, those culverts which are located under High Type (asphaltic concrete or Portland cement concrete) surfaces only, regardless of the design traffic, should be selected and specified on the plans in accordance with approved past practice.

For those culverts which are located under other than High Type surfaces, i.e., bituminous mats, seals, aggregate, etc., the contractor is to be given the option of selecting any one or a combination of the pipe types which are permissible under one of two "Groups", dependent upon the traffic category. These groups of alternates will be designated by "Group I or Group II."

Group I contains three alternate pipe types which are 1) reinforced concrete, 2) vitrified clay, and 3) bituminous coated corrugated metal pipe. This group of three alternates will be specified for all roads which have a design ADT of 400 vpd. or more, and a pavement surface type other than high type.

Group II contains three alternate pipe types which are 1) reinforced concrete, 2) plain corrugated metal, and 3) bituminous coated corrugated metal pipe. This group of three alternates will be specified for all roads which have a design ADT of less than 400 vpd. and a pavement surface type other than high type. This group is also to be specified for all side drain installations such as side roads, approaches, cross overs, etc., except high volume intersecting roads with a high type (asphaltic concrete or Portland cement concrete) pavement surface.

If headwalls or other appurtenances are to be used for the Group I or Group II categories, they are to be specified in the normal manner, and the quantities and pay items on the respective standards and in the specifications will be used with no change for the different pipe shell thicknesses.

For installations on a project which normally would require Group I or Group II pipes but which constitute a special case such as unstable support, high embankments, steep gradients, high acidity or alkalinity of soils and of waters or other corrosive elements, high erosive forces or for other pertinent reasons, one pipe type may be selected and specified on the plans in accordance with past practice. Also, one pipe type may be specified for special drainage systems such as storm sewers, sanitary sewers, underdrains, etc.

When a pipe type is specified for any one of the above special cases, the District must furnish justification acceptable ~~to the Bureau of Public Roads~~ [Remove when Manual is revised By Hunter through ??? 5-14-64] for the selection of the particular pipe type.

We trust that these instructions cover the procedure for the selection of specific pipe types on Group I or Group II pipes; however, we will be pleased to furnish clarification for any item in question.

The procedure and special provisions are effective for the July, 1964 Letting for all Federal Aid projects. They are also to be included for all state sections on which the design plans are not advanced to the stage of essential completion.

Until such time as the "Design Manual" is revised, these instructions should be followed.

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