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METHOD OF TEST FOR DETERMINING THE SHEARING STRENGTH OF BONDED CONCRETE

SCOPE

This test method covers the procedure used in determining the shearing strength at the bonded interface between new and old concrete. The test is normally conducted on cores drilled from completed structures or pavements.

PROCEDURE

A. Apparatus

1. Testing jig to accommodate a 4" diameter specimen. The jig is designed to provide a direct shearing force at the bonded interface.
2. Hydraulic testing machine capable of applying a smooth and uniform tensile load. The accuracy of the reading shall be within $\pm 1.0\%$ of the indicated load.

B. Test Specimens

1. Four-inch diameter cores are the test specimen. Unless otherwise specified the cores are tested in an "as received" condition.

C. Test Procedure

1. Placing the specimen.
 - a. Place the specimen in the testing jig in such a manner that the bonded interface is placed in the space between the main halves of the jig.
 - b. In the event that the interface is irregular and cannot entirely be placed within the specified space, the interface will be placed as close as practical and a special notation made.
 - c. Carefully align the testing jig in the testing machine with the central axis of the jig in the center of the testing machine.
2. Rate of Loading.
 - a. Apply the tensile load continuously and without shock. Apply the load at a constant rate within the range of 400 to 500 psi per minute.
 - b. Continue the loading until the specimen fails, and record the maximum load carried by the specimen during the test.

D. Calculations

1. Calculate the shear bond strength of the specimen by dividing the maximum load carried by the specimen during the test by the cross-sectional area and express the result to the nearest psi.

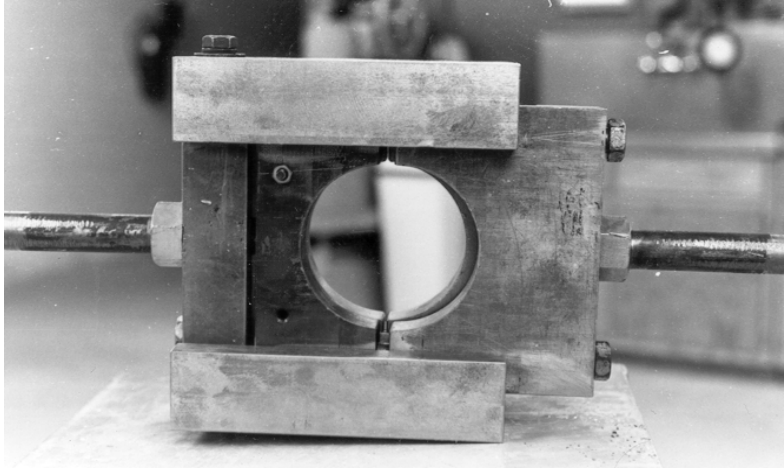
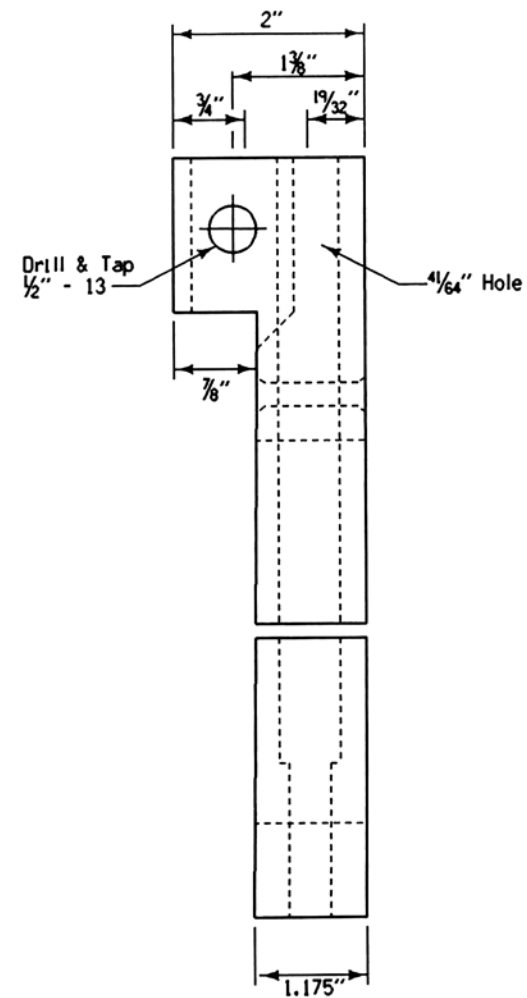
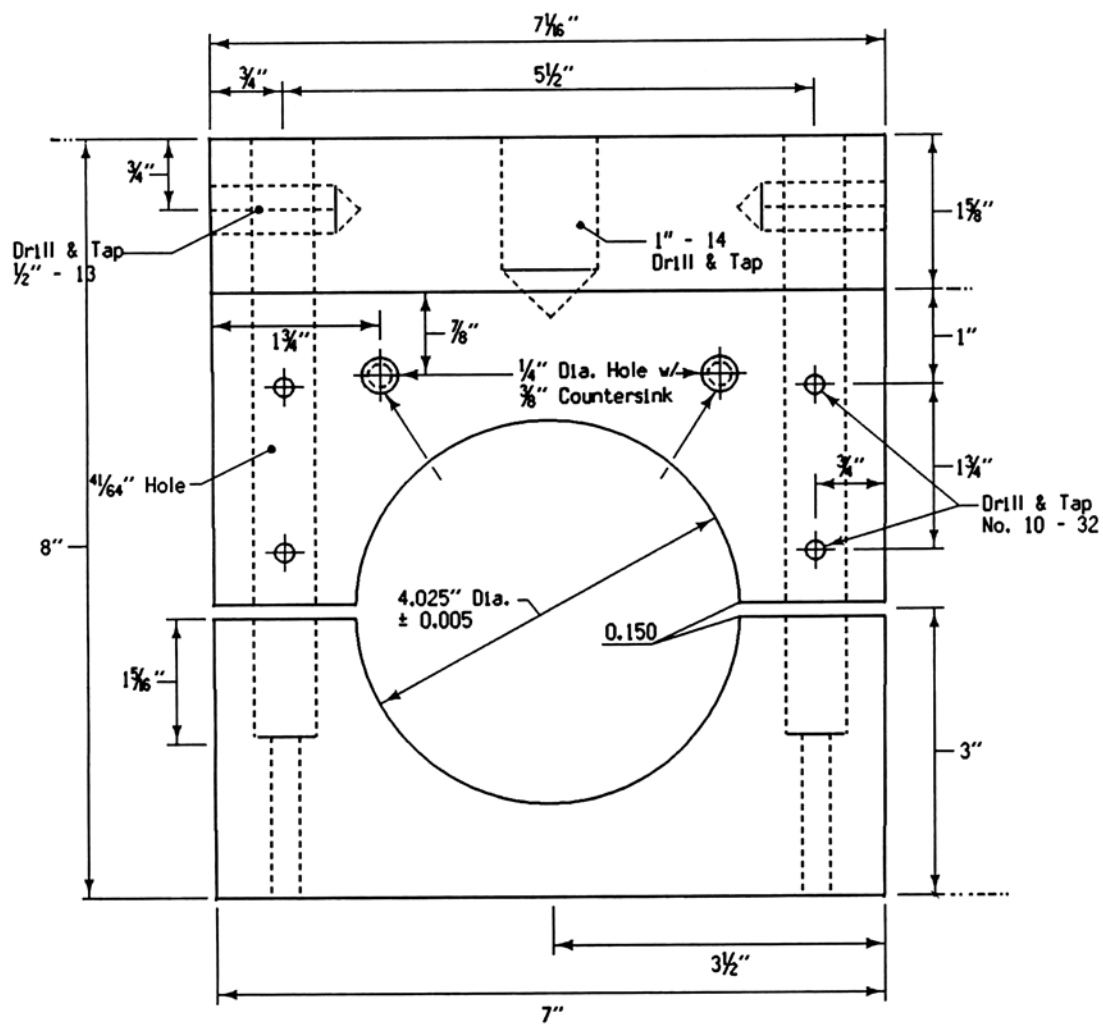


Figure 1. Testing Jig

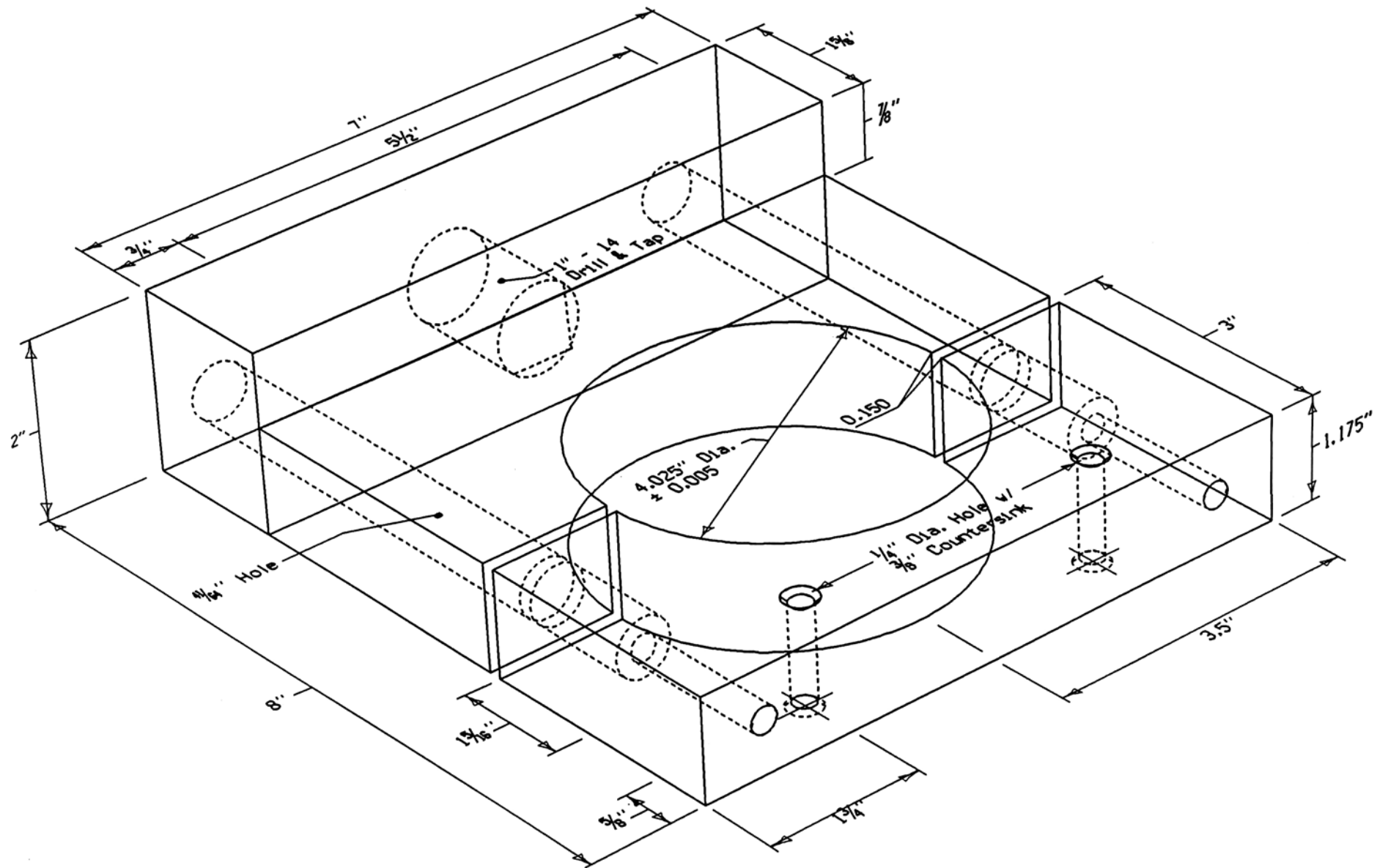


Figure 2. Test Setup

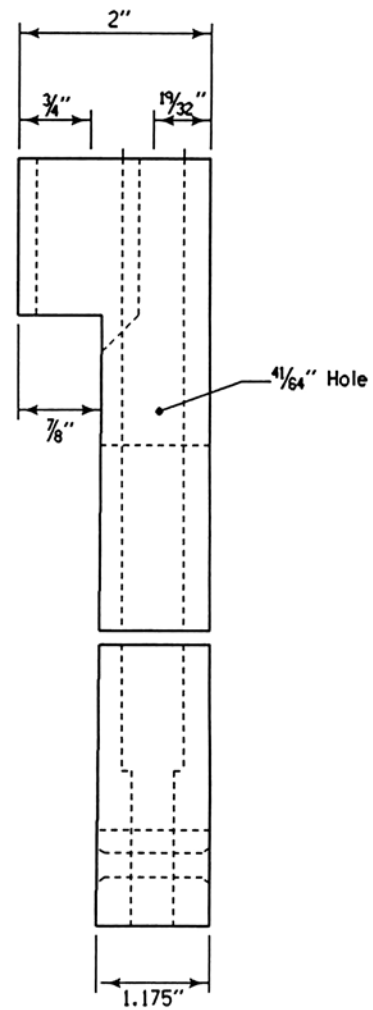
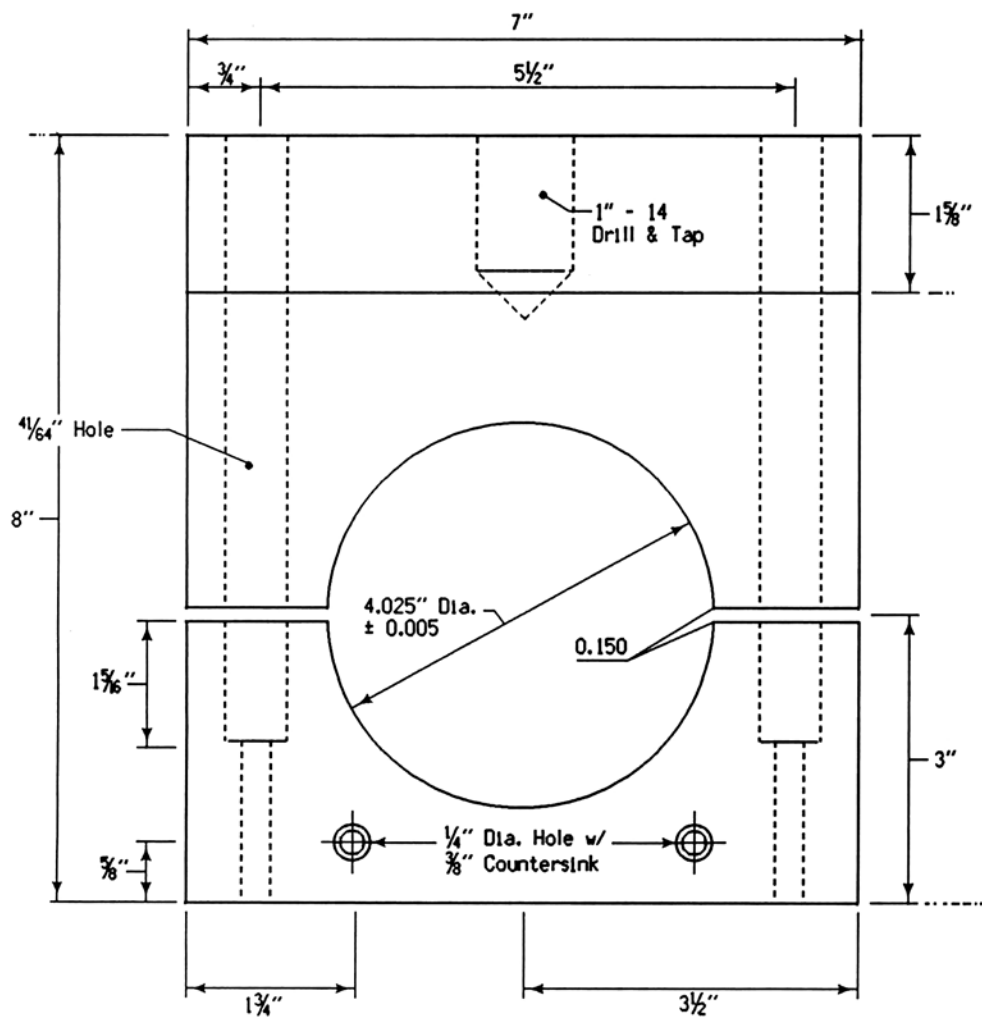
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