

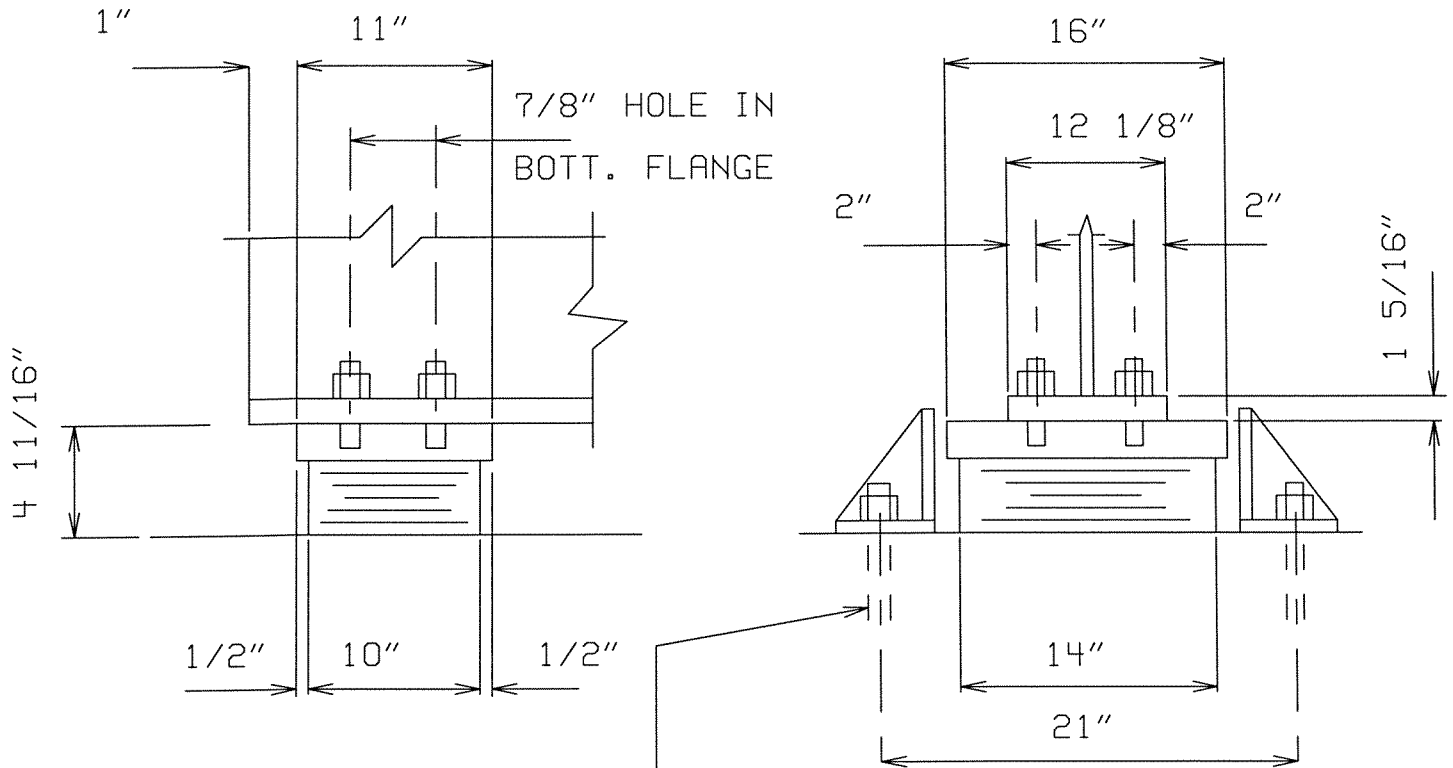
FIRM:Your Firm  
MADE BY:KJH DATE:05-13-2006  
TITLE:Example of BEARINGS program output

JOB NO.2004-0028 SHEET NO: 1  
CHECKED BY: DATE:

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BEARING DETAILS:B1 AT CL BRG. W. ABUT.

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1 1/4" DIA. x 15" A307 BOLT  
W/2 3/4"x2 3/4"x5/16" PL WASHER  
( 2 BOLTS PER BEARING ) TYPE 1 BEARING

BEARING DESIGN DATA:

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Bearing Design File:  
Bearing Dimension File (for drawing production):  
Bearing design is in accordance with the 1999 IDOT Bridge Manual (ENGLISH)

Steel:A50  
Concrete:  $f_c' = 3.50$  ksi  
Bearing stiffeners are not present at this location.

Beam Reactions:  
Rd1 = 49.7 k  
Rl1 = 43.4 k  
Rimp = 10.8 k

Longitudinal slope at bearing = -2.0000%  
Distance to fixed bearing = 75.00 feet



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SHEET NO: 3

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ELASTOMERIC BEARING DESIGN CALCULATIONS:

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Elastomeric Bearing Area = 10.000 \* 14.000 = 140.00 sq. in.

DL stress = 49.7 k/ 140.00 sq. in.  
= 355 psi > 200 psi (OK)  
          < 500 psi (OK)

DL + LL stress = 93.1 k/ 140.00 sq. in.  
= 665 psi > 200 psi (OK)  
          < 800 psi (OK)

Check Bearing Thickness For Required Movement:

For "Type 1" bearings, the elastomeric rubber thickness (ERT)  
must be at least twice the total movement.

For this bearing, ERT= 2.190 in > 2\* .935 in= 1.871 in (OK)

Check Bearing Thickness For Required Slope:

For "Type 1" bearings, the maximum slope without using a tapered  
top plate is given by the following formula:

Maximum Slope (%) = 12 \* ERT/We  
= 12 \* ( 2.190)/(10.000)  
= 2.628% > 2.000% (OK)

Design top plate. (See IDOT Bridge Manual Fig. 3.5.4-17):

R = Rdl + Rll + Rimp = 103.9 k

Req'd top plate thickness,

$Tt = C * (R * Le/Wt)^{.5}$   
= .166 \* ( 103.9 k \* 14.00 in/11.00 in)<sup>.5</sup>  
= 1.9210 in > 1.5 inch minimum

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SHEET NO: 4

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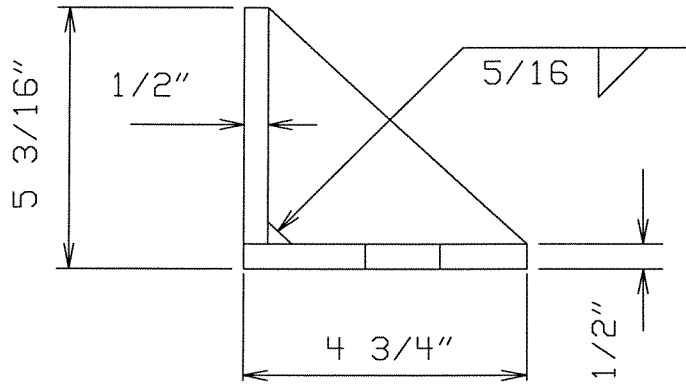
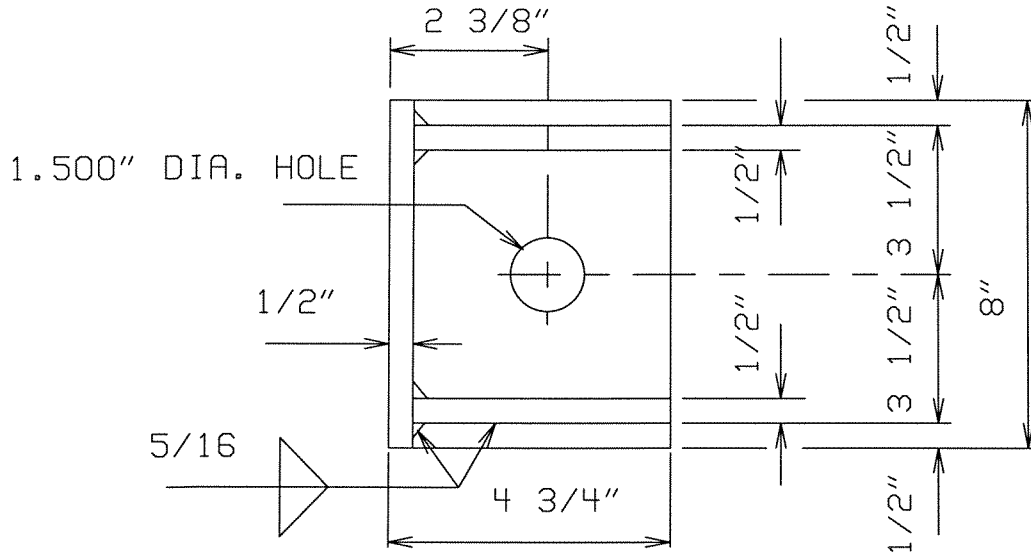
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SIDE RETAINER