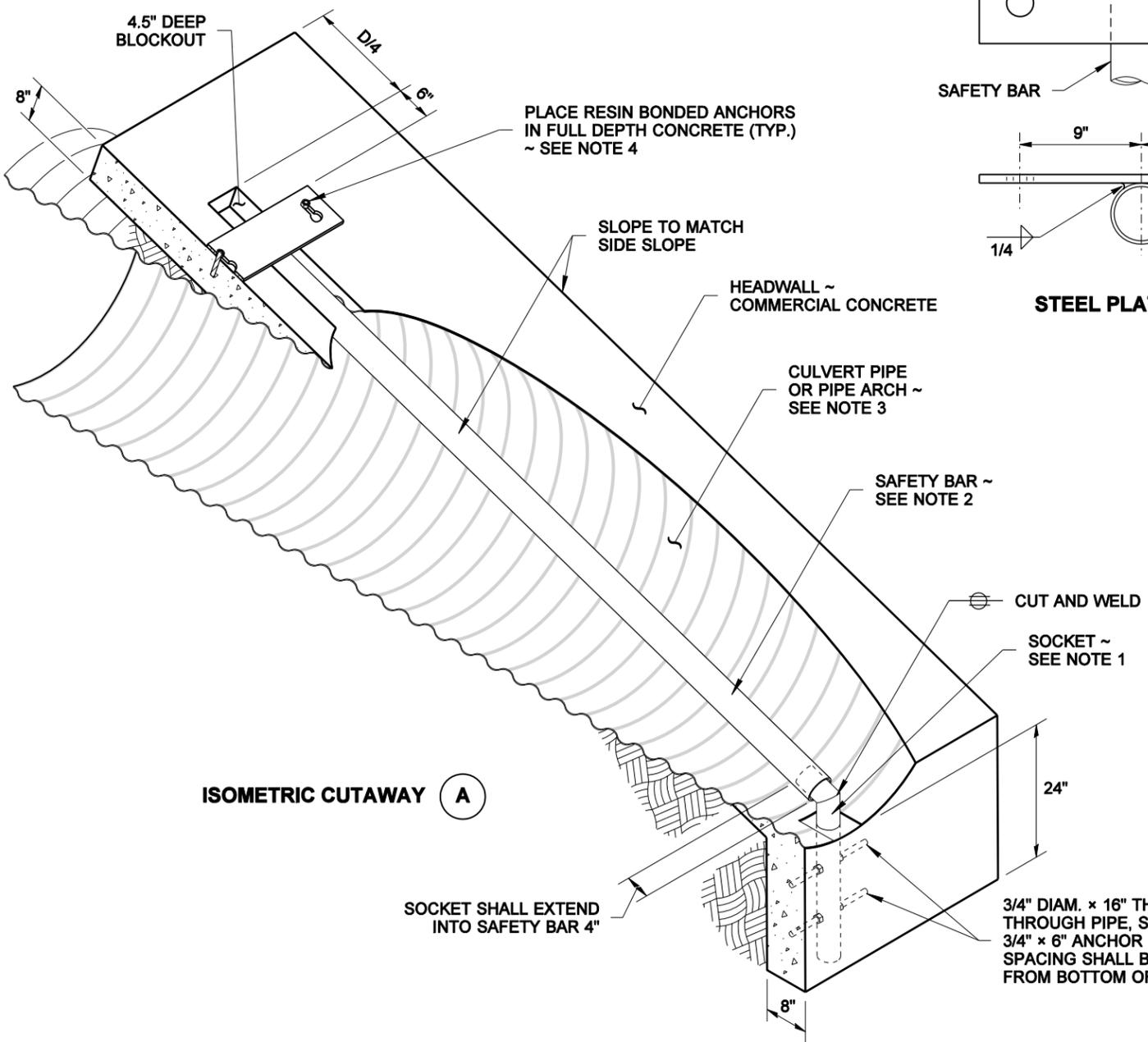


CULVERT DIAM.	NUMBER OF BARS REQUIRED
UP TO 36"	NONE
42" ~ 60"	1
66" ~ 90"	2
96" ~ 120"	3

NOTES

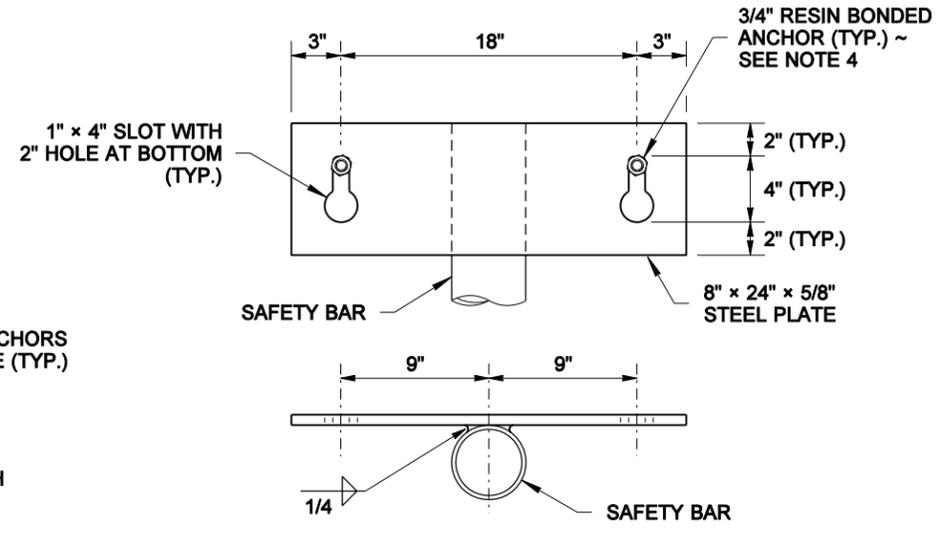
1. Sockets shall be 3" extra strong steel pipe (3 1/2" O.D.). Sockets must be the proper angle and height so that safety bars are parallel with headwall and side slope, and are easily removable.
2. Safety Bars shall be 4" extra strong steel pipe (4 1/2" O.D.), or 4 1/2" O.D. (.250" wall thickness) steel tubing. Length (20' maximum) shall be the minimum required to achieve Resin Bonded Anchor placement in full depth concrete. When multiple bars are required (see table) place bars at equal spacing (30" max.).
3. Bevel culvert pipe to match side slope.
4. Resin bonded anchors shall be 7" in length (5" embedment).
5. Centerline of headwall shall be normal to roadway centerline.

**TOP VIEW
CULVERT IS PERPENDICULAR TO ROADWAY**

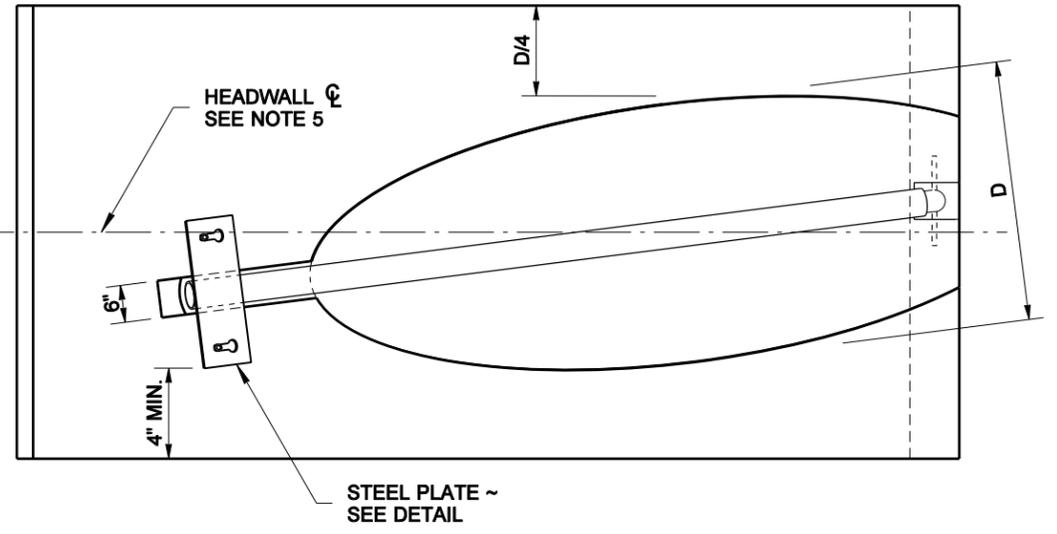


DRAWN BY: LISA CYFORD

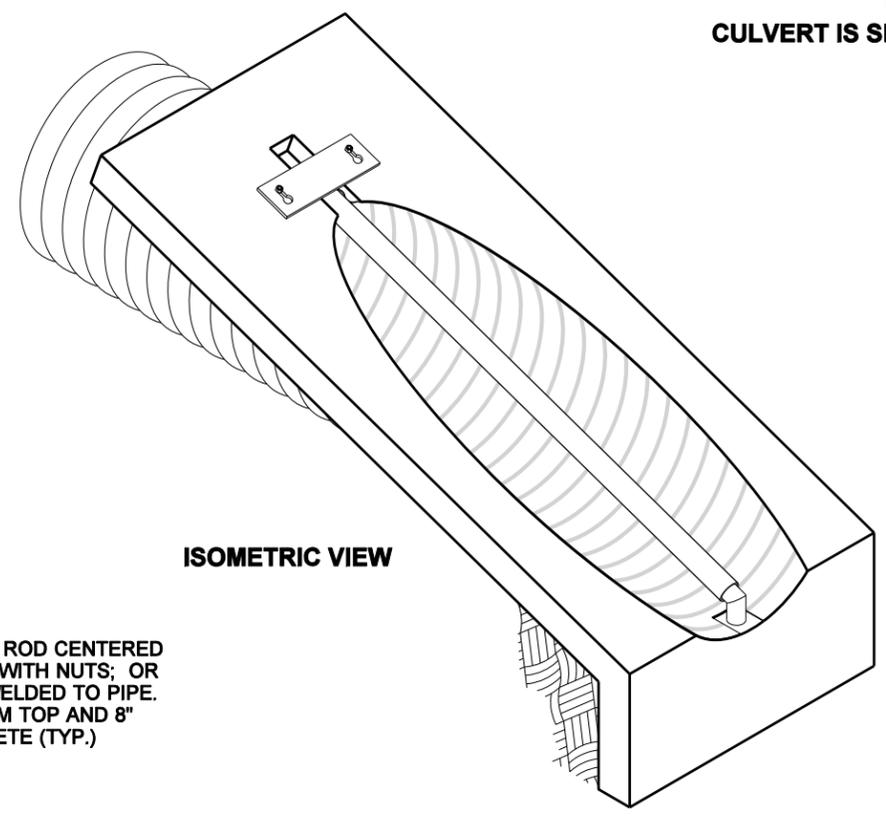
ISOMETRIC CUTAWAY A



STEEL PLATE DETAIL



**TOP VIEW
CULVERT IS SKEWED TO ROADWAY**



EXPIRES JULY 1, 2009

**TYPE 1 SAFETY BARS FOR
STEPPED CULVERT PIPE
OR PIPE ARCH
STANDARD PLAN B-75.50-01**

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III 06-10-08
STATE DESIGN ENGINEER DATE



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT
UNLESS IT IS APPROVED AND SEALED BY THE ENGINEER.
THE ENGINEER HAS REVIEWED THE CONTRACT, THIS PLAN,
FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION.
A COPY MAY BE OBTAINED UPON REQUEST.