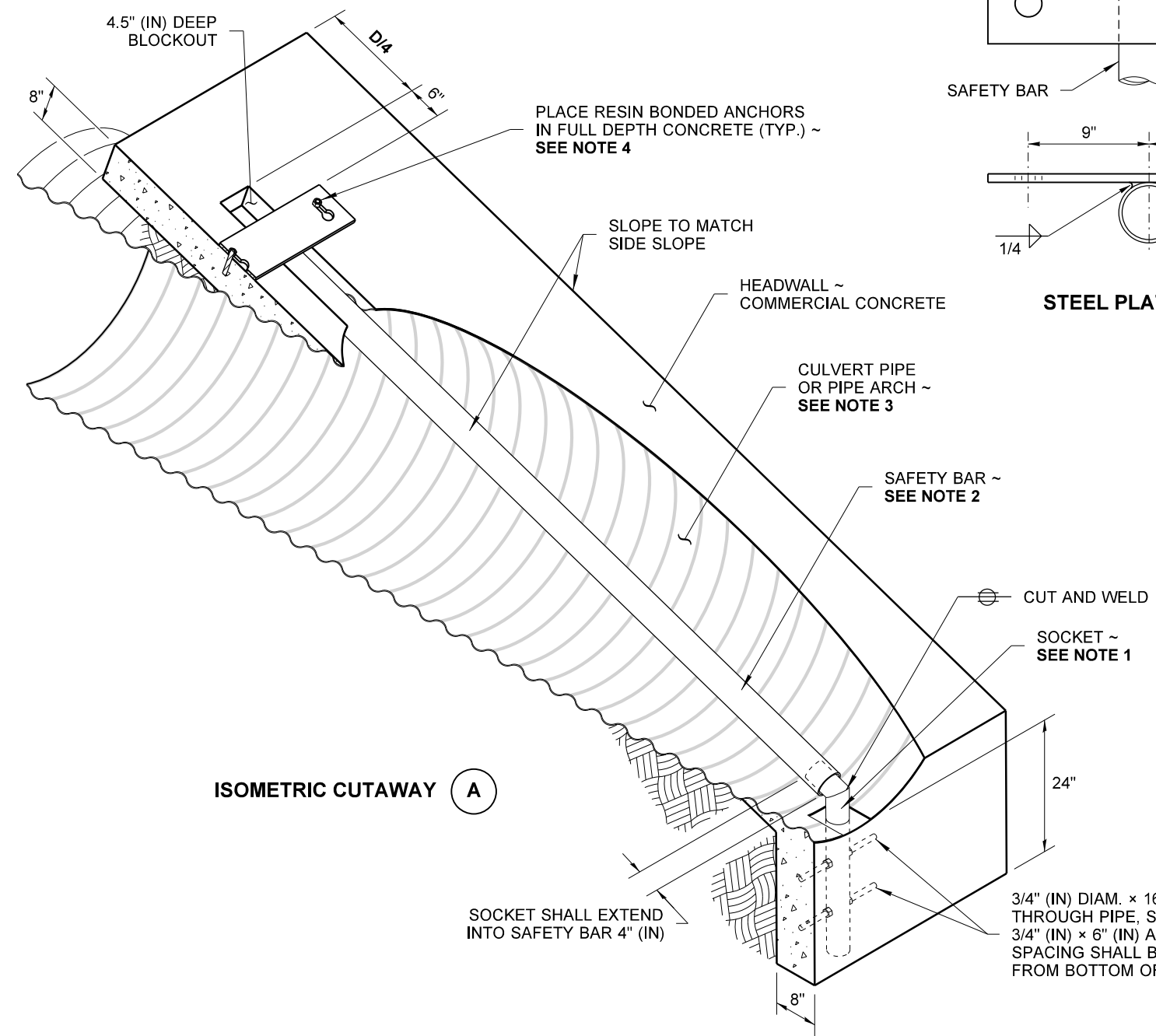


CULVERT DIAM.	NUMBER OF BARS REQUIRED
UP TO 36"	NONE
42" ~ 60"	1
66" ~ 90"	2
96" ~ 120"	3

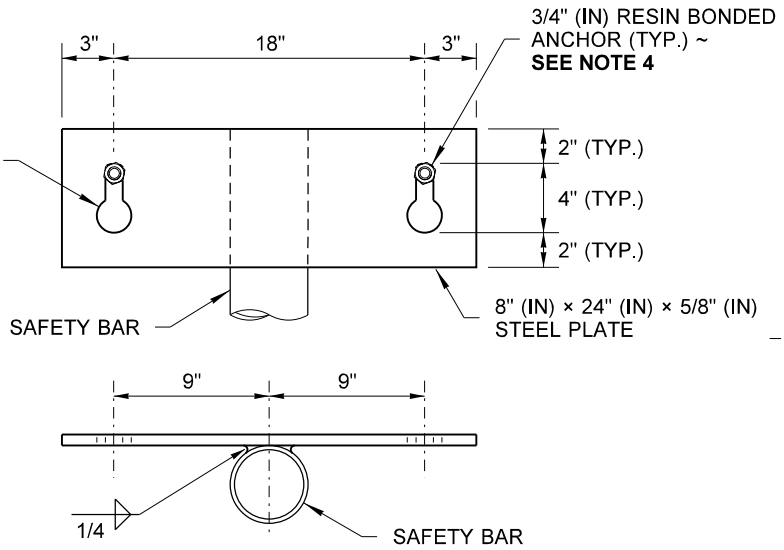
NOTES

1. Sockets shall be 3" (in) extra strong steel pipe (3 1/2" (in) 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" (in) extra strong steel pipe (4 1/2" (in) O.D.), or (4 1/2" (in) O.D.) (.250" (in) 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" (in) max.).
3. Miter culvert pipe to match side slope.
4. Resin bonded anchors shall be 7" (in) in length (5" (in) embedment).
5. Centerline of headwall shall be normal to roadway centerline.

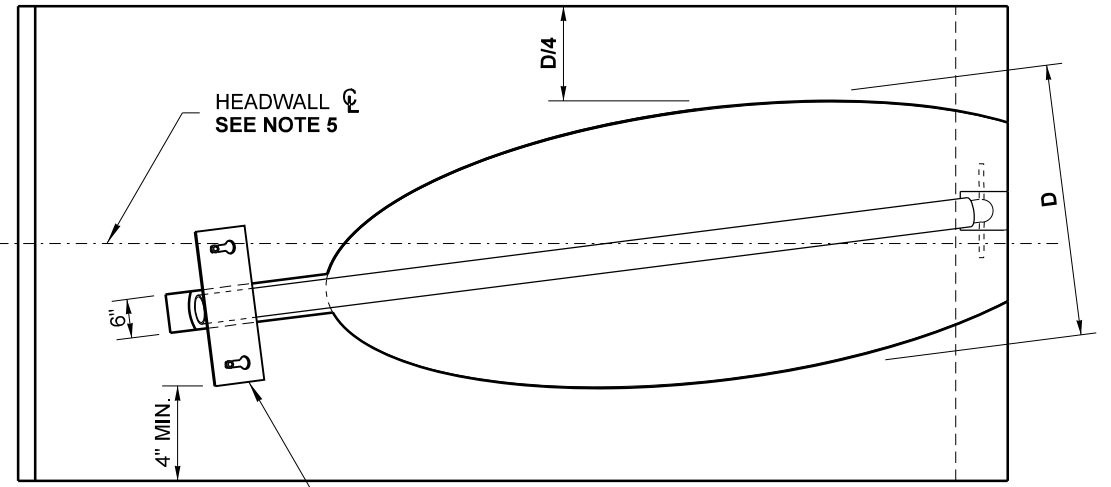
**TOP VIEW
CULVERT IS PERPENDICULAR TO ROADWAY**



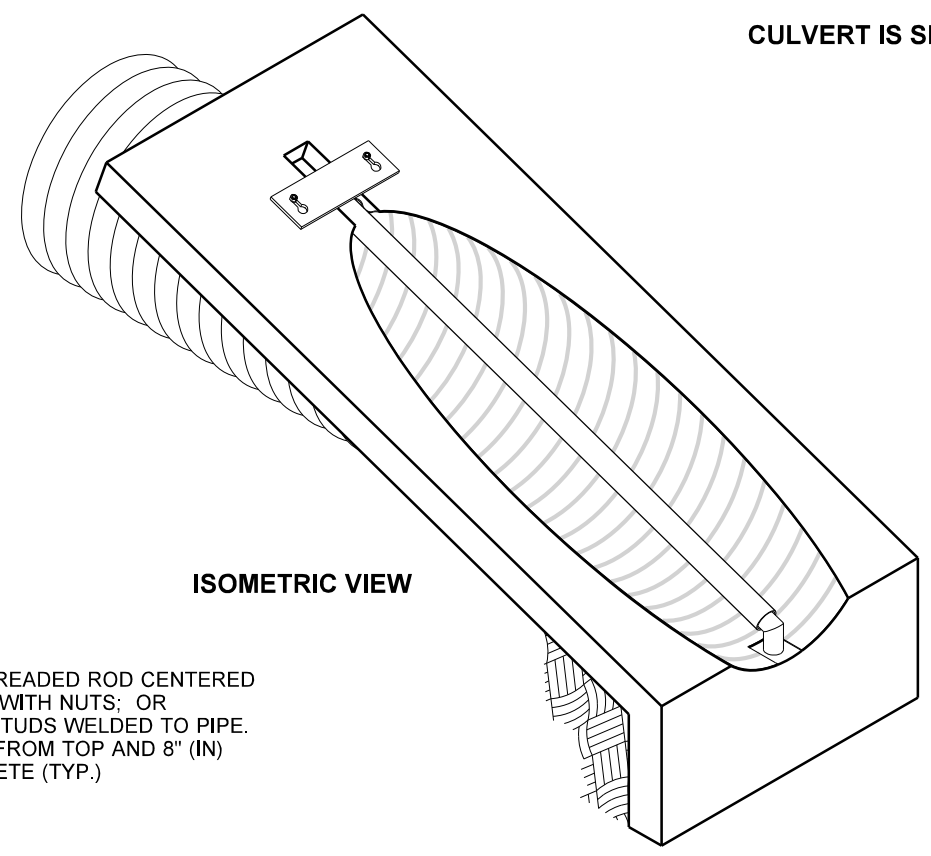
ISOMETRIC CUTAWAY (A)



STEEL PLATE DETAIL



**TOP VIEW
CULVERT IS SKEWED TO ROADWAY**



ISOMETRIC VIEW

DRAWN BY: LISA CYFORD



Mar 14, 2022
**TYPE 1 SAFETY BARS FOR
 STEPPED CULVERT PIPE
 OR PIPE ARCH**
STANDARD PLAN B-75.50-02

SHEET 1 OF 1 SHEET
 APPROVED FOR PUBLICATION
 Mark Gaines
 Mark Gaines (Mar 15, 2022 22:26 PDT)
 STATE DESIGN ENGINEER
 Washington State Department of Transportation