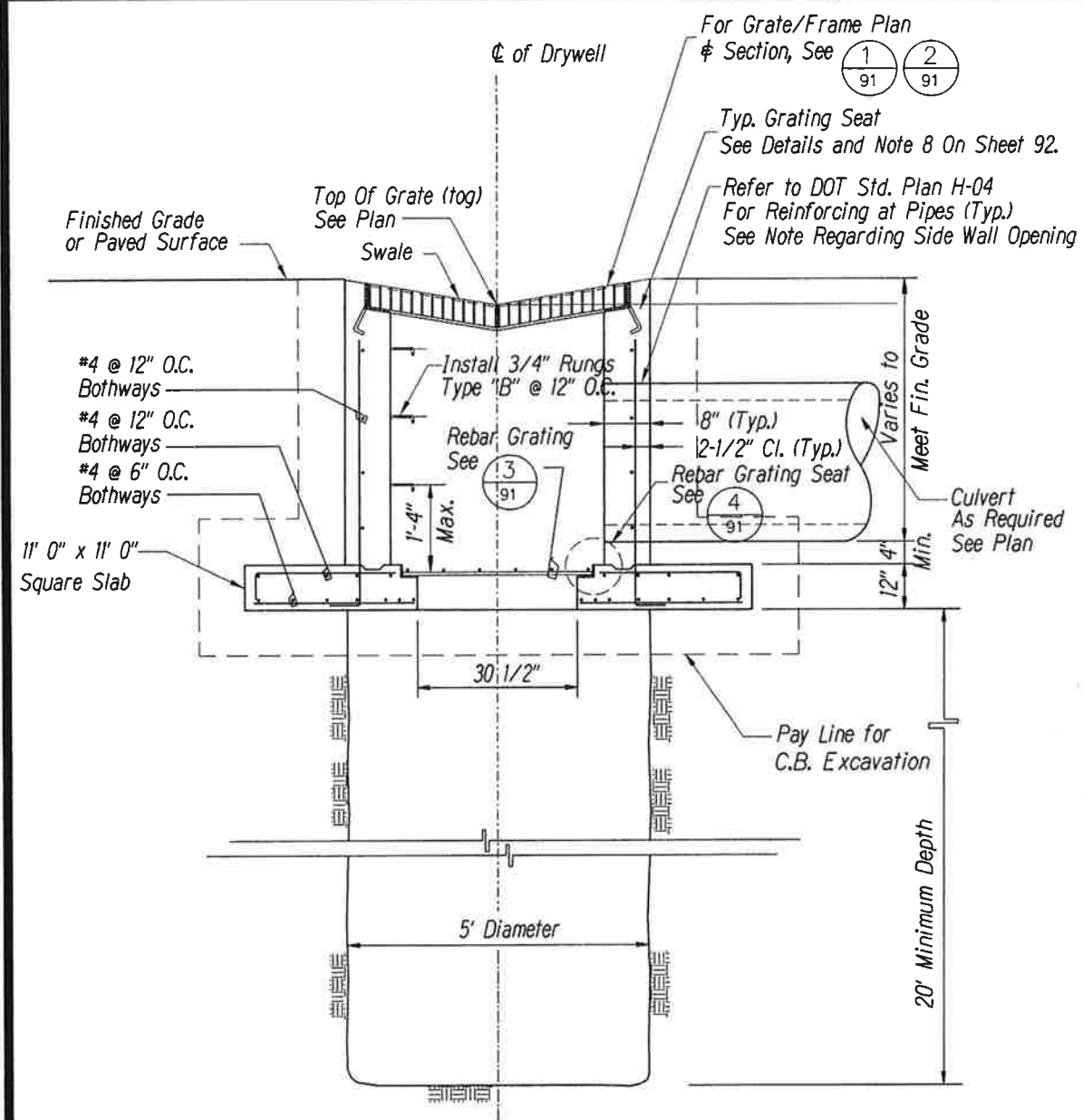
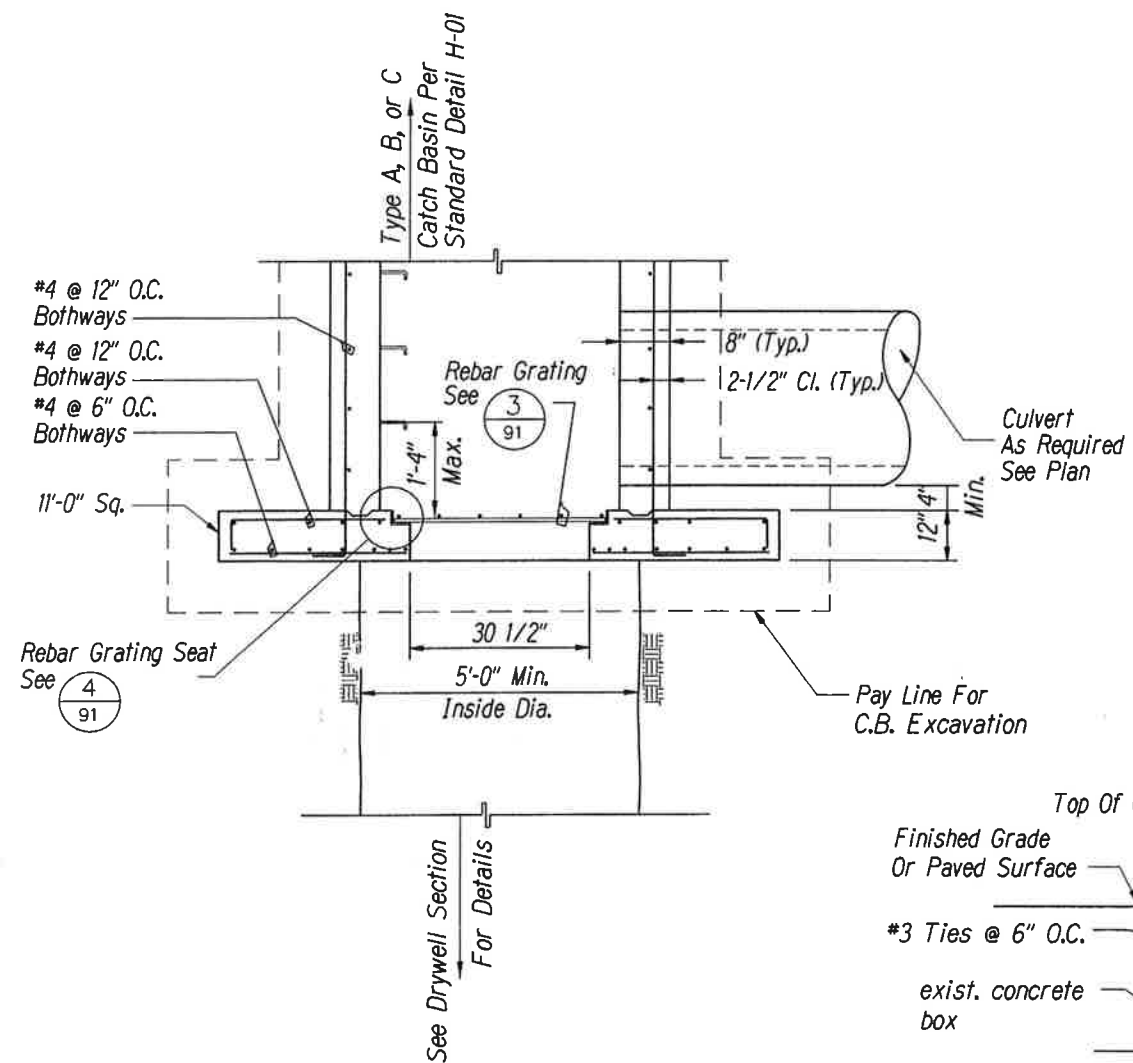


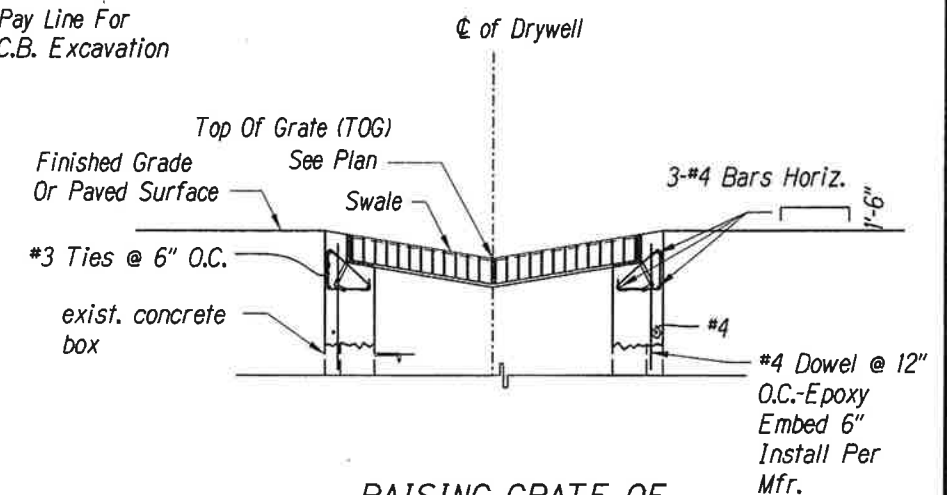
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(20)	2005	90	315



1
90 DRYWELL SECTION
Scale: NTS



2
90 CATCH BASIN ON DRYWELL SECTION
Scale: NTS



3
90 RAISING GRATE OF D.I. #14 DETAIL
Scale: NTS

DATE	_____
SURVEY PLOTTED BY	_____
DRIVEN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTE BOOK	_____
NO.	_____



This work was prepared by me or under my supervision.
Exp. 04-30-10

Neal S. Fukumoto
Wesley R. Segawa & Associates, Inc.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

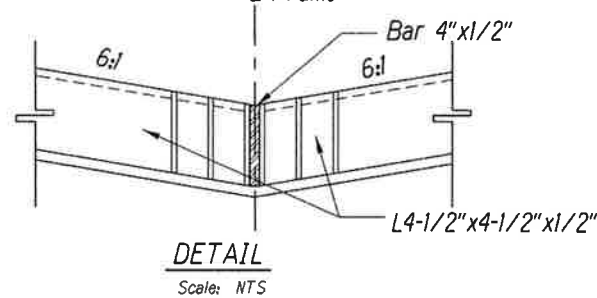
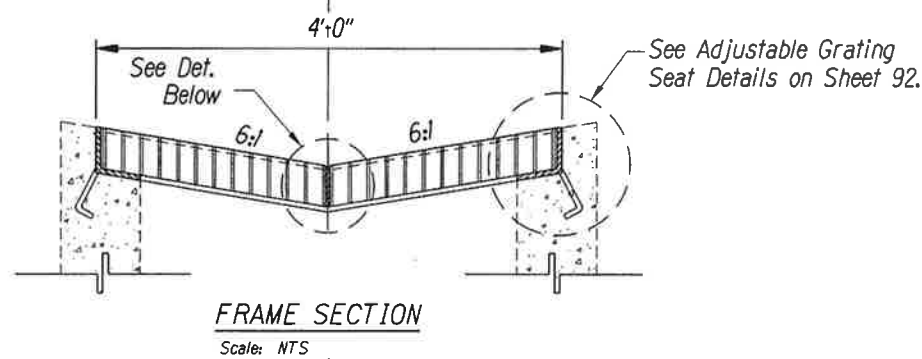
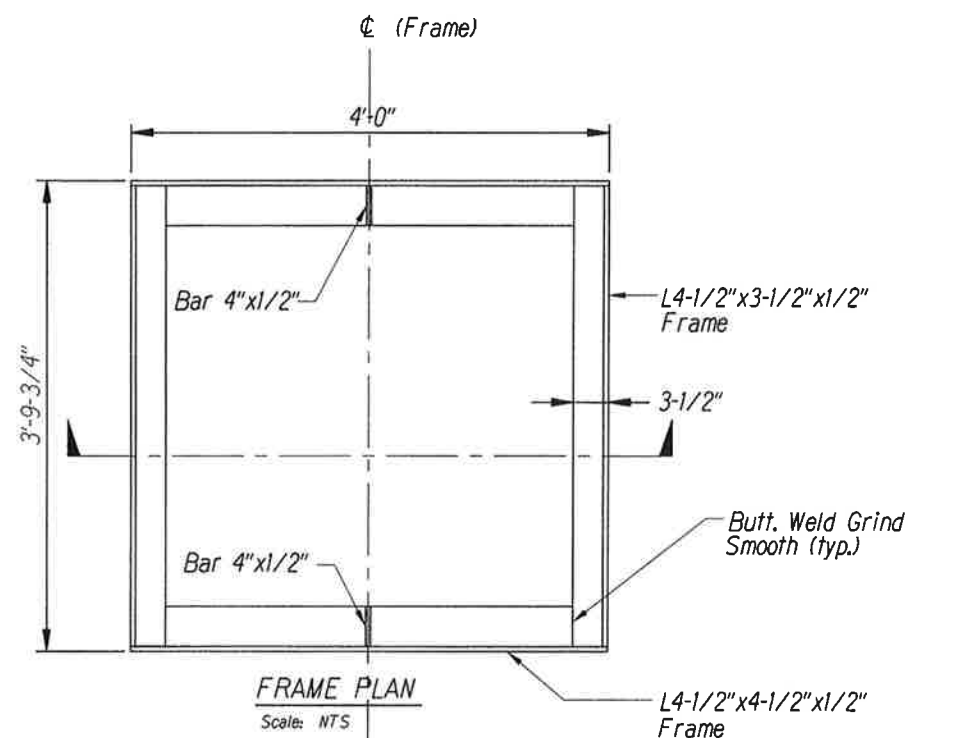
DRYWELL DETAILS

**QUEEN KAAHUMANU HIGHWAY WIDENING
HENRY ST. to KEALAKEHE PKWY - PHASE I**
Federal Aid Project No. NH-019-1(20)
Scale: None Date: November 2009

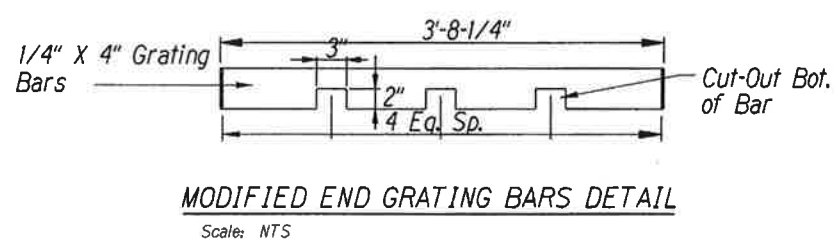
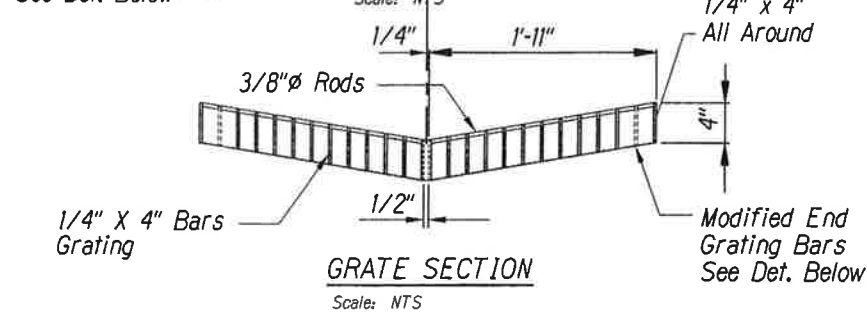
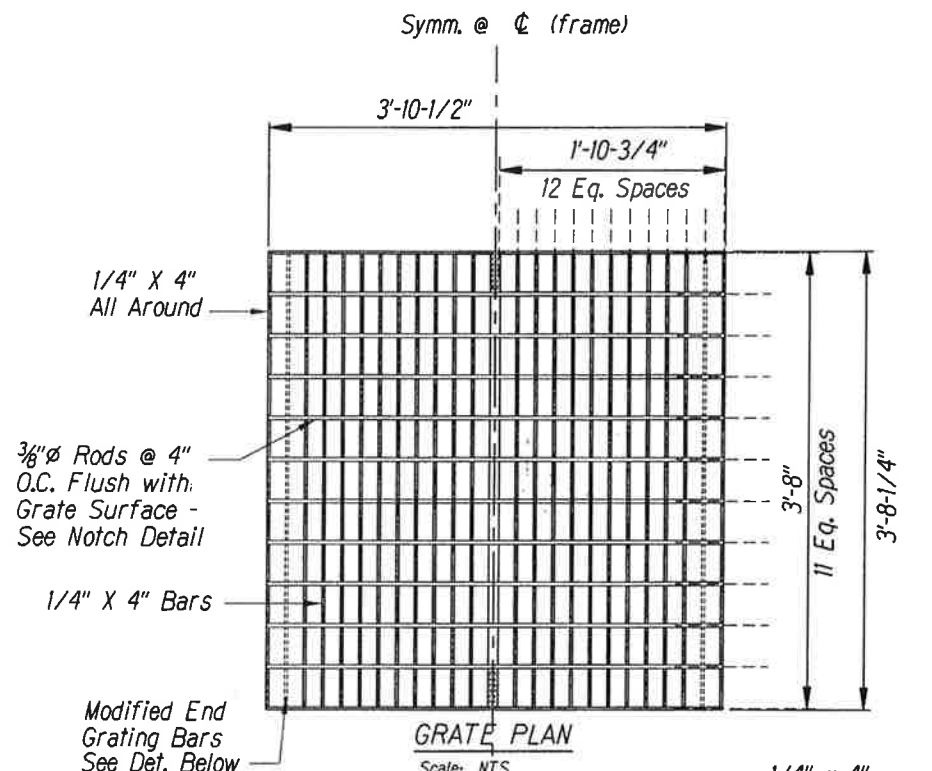
SHEET No. 1 OF 3 SHEETS

AS-BUILT

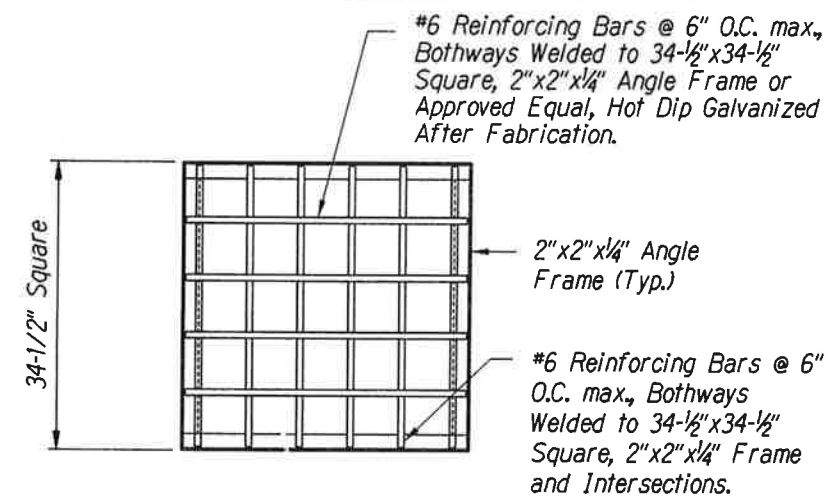
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-019-1(20)	2005	91	315



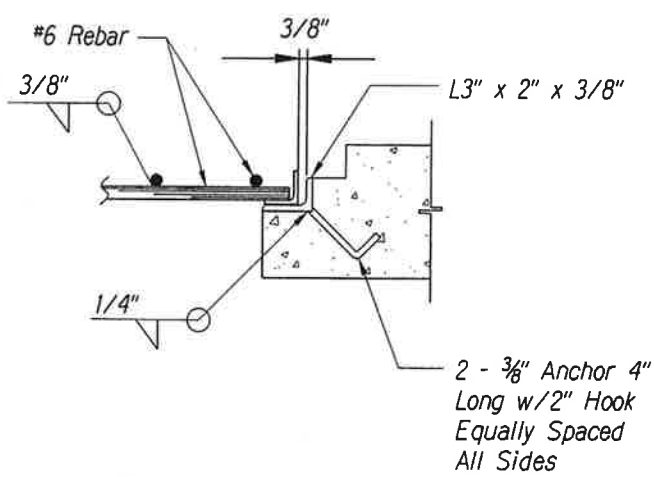
1 FRAME DETAIL
Scale: NTS



2 GRATE DETAIL
Scale: NTS



3 DRYWELL REBAR GRATING DETAIL
Scale: NTS



- NOTES:
1. Grating Shall be Hot Dipped Galvanized After Fabrication.
 2. All Steel Shall be Structural Grade (ASTM A36 Min.)
 3. All Welds 5/16" Unless Otherwise Noted.
 4. All Welding Shall be in Accordance with Current Edition of Reinf. Steel Welding Code Aws D1.4.

4 REBAR GRATING SEAT DETAIL
Scale: NTS



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Exp. 04-30-10
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HIGHWAYS DIVISION

DRYWELL DETAILS

QUEEN KAAHUMANU HIGHWAY WIDENING
HENRY ST. to KEALAKEHE PKWY - PHASE I
Federal Aid Project No. NH-019-1(20)
Scale: As Noted Date: November 2009

SHEET No. 2 OF 3 SHEETS

Technical drawing showing a side view and a top view of a pipe-to-structure connection.

Side View Dimensions:

- Angle size: $L4-1/2" \times 3-1/2" \times 1/2"$
- Vertical distance from pipe centerline to top of angle: $4-1/2"$
- Horizontal distance from pipe centerline to face of angle: $1-1/2"$
- Vertical distance from top of angle to top of pipe: $8" \text{ Min.}$
- Horizontal distance from pipe centerline to face of angle: $1"$
- Horizontal distance from face of angle to centerline of pipe: $5-1/2"$
- Horizontal distance from pipe centerline to face of angle: $8"$
- Horizontal distance from pipe centerline to centerline of pipe: $12"$
- Vertical distance from top of pipe to top of structure: $4-1/2"$
- Vertical distance from top of structure to top of pipe: $10" \text{ Min.}$
- Vertical distance from top of pipe to top of structure: $6"$

Annotations:

- Butt. Weld & Grind Smooth
- #4 Horiz.
- $1/2" \text{ } \varnothing$ Anchor @ Mid-Span of Angle (Typ)
- #4 Dowel @ $12" \text{ o.c.}$ to Match Vert.
- Top Of Pipe

Technical drawing of a concrete slab with a square column and a rectangular column. The square column is 12 inches wide and has 4 #4 bars horizontally and 1-6 inch w/#3 ties @ 6 inch. The rectangular column is 12 inches wide and 6 inches high, with #4 @ 12 inch o.c. to match vert. and 2-#4 added. The slab is 10 inches thick and has 1/4 inch x 4 inch bars grating. The drawing also shows a 4 inch x 4 inch area with #4 @ 12 inch o.c. both ways.

Technical drawing showing a cross-section of a pipe repair using a cast-in-place concrete patch. The drawing includes the following dimensions and components:

- Dimensions:**
 - 4-1/2" (Patch Thickness)
 - 12" (Patch Width)
 - 8" (Patch Height)
 - 10" (Patch Depth)
 - 1-1/2" (Patch Base Width)
 - 5-1/2" (Patch Base Height)
 - 1" (Patch Base Width)
- Reinforcement:**
 - #3 Ties @ 6" o.c.
 - #4 @ 12" o.c. to Match Vert.
 - 2-#4 Added
 - 3-#4 Bars Horiz.
 - 4-1/2" Ø Anchor Equally Spaced (Typ)
 - #4 @ 12" o.c. Bothways
- Other Components:**
 - Removable Seat and Collar
 - Butt. Weld & Grind Smooth
 - Top of Pipe

Technical drawing of a concrete slab detail, showing reinforcement bars, ties, and dimensions. The drawing includes the following labels and dimensions:

- Dimensions:**
 - 7-1/2"
 - 4-1/2"
 - 3-3/4"
 - 4"
 - 10" Min.
 - 6"
 - 8"
 - 12"
- Reinforcement Details:**
 - L4-1/2"x4-1/2"x1/2" (Four Sides)
 - #3 Ties @ 6" o.c.
 - 3-#4 Bars Horiz.
 - 4-1/2" Ø Anchor Equally Spaced (Typ)
 - #4 @ 12" o.c. to Match Vert.
 - 2-#4 Added
 - #4 @ 12" o.c. Bothways
 - 1/4"x4" Bars Grating
 - End Bar 4"x1/4"
 - 3/8" Ø Rods @ 4" o.c.
 - Brg.

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