

Frequently Asked Questions Concerning Precast Manufacturing for the TDOT Projects

CATCH BASIN STANDARD DRAWINGS QUESTIONS

What should the precast manufacturer do if the available height between the pipe inlet/outlet elevation and top of grate elevation for a catch basin, as specified on the construction plans, is too shallow for the structure specified?

Stop and notify the TDOT Regional Construction Division personnel immediately *if the minimum height cannot be achieved*. Modifications of the design will be necessary.

Is it acceptable to modify the minimum height of a structure, as specified on the standard drawings, to fit the height specified on the construction plans?

No. Notify the TDOT Regional Construction Division personnel immediately. Modifications of the design will be necessary.

Can round structures be used as an alternate to rectangular or square structures?

Yes, round structures may be used instead of square or rectangular as long as pipe sizes and angles are satisfied. If they are an option, the standard drawing number for the round structure they should have been listed under the pipe tabulation. If it is not listed, request from the TDOT Regional Construction Division personnel to communicate with the Design Division if the round structure may be an option.

How should the reinforcement be placed in structures that require pipe connections other than straight thru as shown on the standard drawings?

Reinforcement placement around any pipe cut out should be placed as shown in the standard drawings. If the drawings depict a solid wall and there is a proposed pipe, the reinforcement should be adjusted to accommodate the pipe cut out similar to the wall with a pipe cut out as depicted in the standard drawings.

How should the reinforcement around the cutout holes be modified for pipes with skewed connections?

The vertical and horizontal reinforcement bars around the elliptical opening should be cut to fit. A minimum concrete cover of 2 inches (+/- 1/2" tolerances) should be maintained. Additional details for this condition will be provided in the revised standard drawings to be released early next year.

What is the minimum reinforcement requirement of the section above the cutout holes?

A minimum of three (3) H-501 bars spaced 2" center to center are required in the 8" section, with a 2" minimum concrete cover (*2" to center of bar – actual cover 2"- 1/2 bar diameter*) on the top and bottom. As the vertical dimension of the section above the cut-out hole increases, an additional H-501 bar should be placed on 2" center to center spacing, while maintaining the 2" cover (*2" to center of bar – actual cover 2"- 1/2 bar diameter*). When the vertical dimension of the section measures 14" and above, and a minimum of three(3) bars on top of catch basin wall and three(3) bars above the cut-out hole are placed, all additional reinforcement should be placed a maximum of 8" center to center spacing as shown for a wall section.

For some structures such as Type 42, the minimum height to accommodate three (3) H-500 bars is 10". The sequence is the following: The first bar (H502) with 2" cover (*2" to center of bar – actual cover 2" - ½ bar diameter*), the second bar (H501) on 3" center to center, then the third bar (H500). The minimum height in order to fit three (3) bars (H502,H501,H500) is 10". The adequate height which will accommodate two (2) additional H500 bars on 3" center to center is 16".

What are the manufacturing tolerances for all precast structures?

Dimensional Tolerances (The length, width, height or diameter measurements): +/- 1/2 in.

Top and Bottom slab thickness: - 3/8 in. (shall not be less than the design)

Wall thickness: - 3/8 in. (shall not be less than the design)

Reinforcement Location: +/- 1/2 in. (spacing shall not be more than 1.5 in. over the design spacing)

Reinforcement bar size: 0 (shall not be more or less than the design)

Concrete cover (typical 2 in.) +/- 1/2 in. (shall not be less than 1 in.)

Where the under-drain holes should be located?

Under-drain holes should be placed between the vertical bars and below the three horizontal (H501) bars located at the top of the structure wall section. When the height above the cutout hole is at minimum, the under-drain hole should be placed on the solid wall side. The reinforcement members should not be cut for an under-drain hole. Additional details will be provided in the *revised standard drawings to be released early next year.*

How should the reinforcing bars be bent and placed on the corners where the standard drawing shows 90 degree turn?

The standard drawings show the reinforcement members in a simple form. They are not shown to any scale or proportion. Also, reinforcement thicknesses and bending radiuses are not currently detailed for clarity. *Therefore the catch basin plan views are showing a dot for two bars meeting at the corner 1.675" apart. See the catch basin detail.*

Can I modify the location of the reinforcing steel splices or add/eliminate a splice?

Yes. Splice locations for all reinforced concrete structures may be modified as long as the proper splice length is provided.

A splice may be eliminated if the minimum required reinforcing is provided by one piece. The catch basin standards shows a splice in the wall sections between the h bars placed in the bottom slab and variable length A bars in the walls, since the standard drawings are prepared to be used for structures up to a height of 20 feet. H and A bars may be combined for many short structures eliminating splices. Also, the two horizontally placed H bars may be placed as one piece, eliminating one splice location.

Can I shorten the required minimum splice length in order to fit?

No. Under no condition *should the* splice length be shortened.

HEADWALL STANDARD DRAWINGS QUESTIONS

Where is the outer most S400 bar located relative to the outside edge of the wing wall?

The outer most S400 bar is located 3.5" from the outside edge. See the elevation view.

What is the spacing of the S400 bars for the bottom slab of the pipe headwall structures?

The S400 bars should be equally spaced, but under no circumstance shall the bar spacing exceed 12 inches. The required quantity of S400 bars are shown on the Bill of Steel for the different pipe sizes

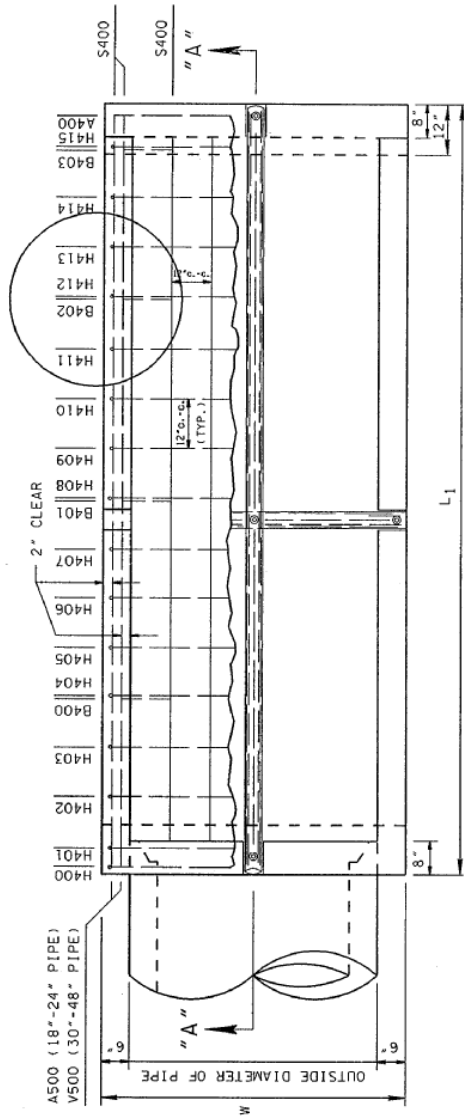
What is the minimum concrete cover for H bars placed in the wing wall sections?

The minimum concrete cover is 1.5" from the outside of the H bar. See the details.

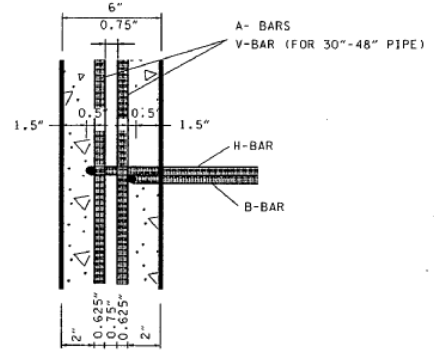
How are the two S400 bars to be placed under the wing wall where the "bill of steel" does not correspond to the number of bars that are needed for the slab?

The reinforcement label arrows on plan view indicate that two S400 bars are required under the wing walls. The label should have *pointed* to the outside bar only. The number of bars required for the bottom slab is listed in the bill of steel correctly. The D-PE-Series standard drawings will be revised to remove the arrow indicating that a second bar may be required under the wall. S400 bars shall be equally spaced across the bottom slab.

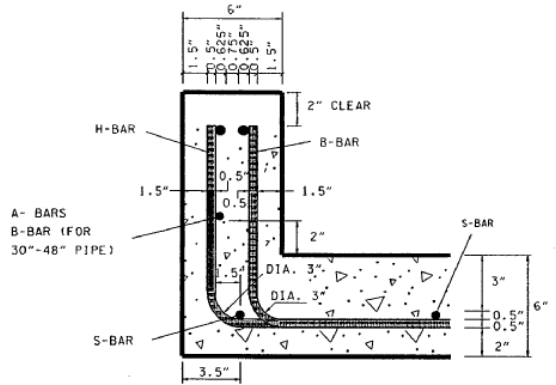
TYPE "U" CONCRETE HEADWALL DETAILS FOR D-PE-3B



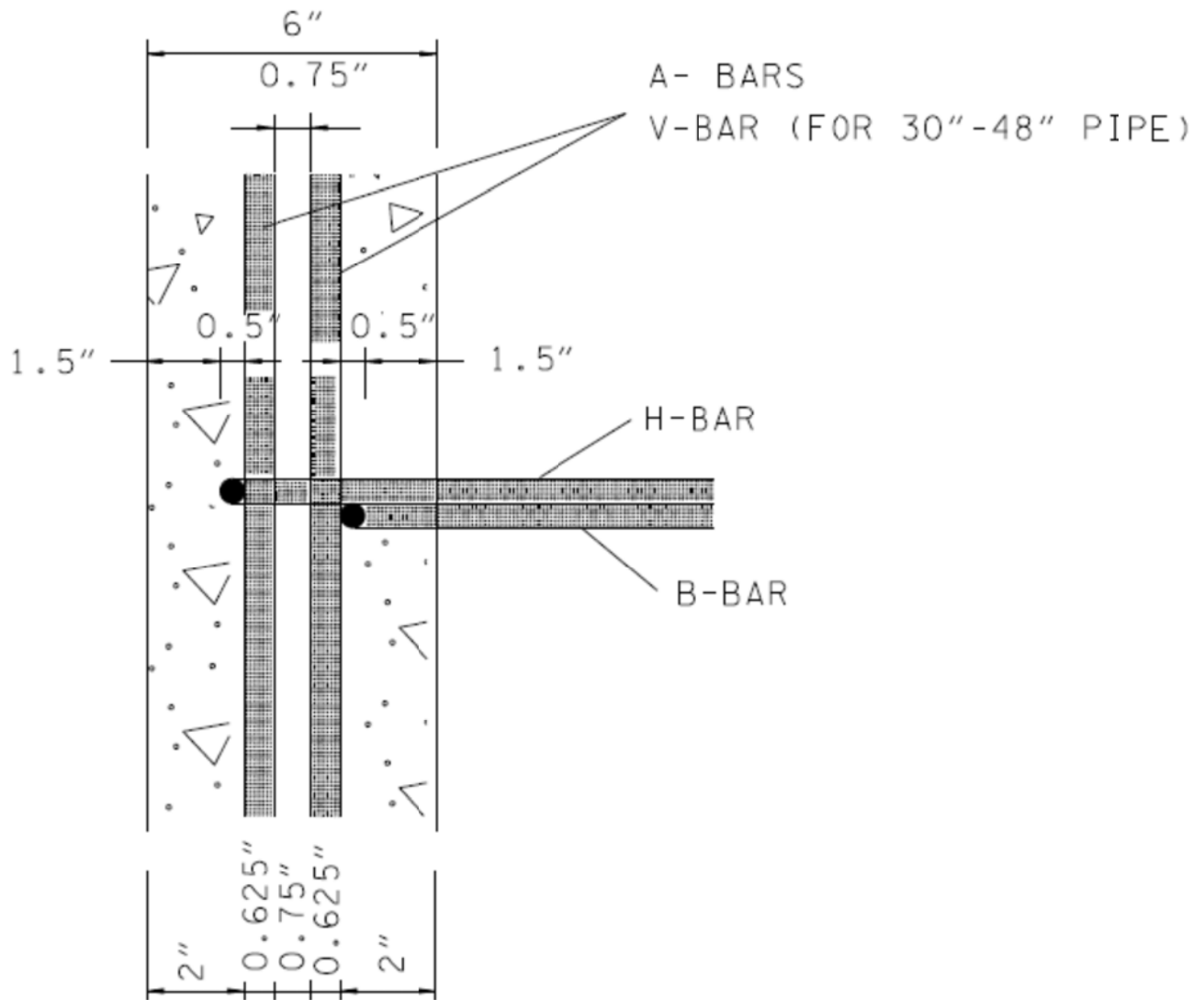
PLAN



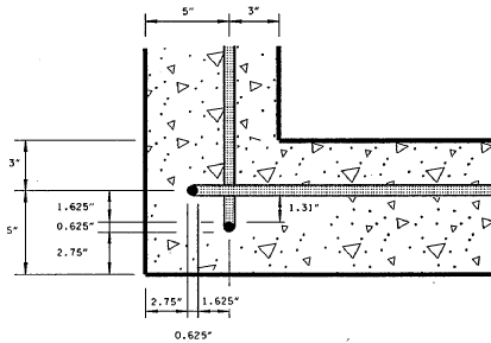
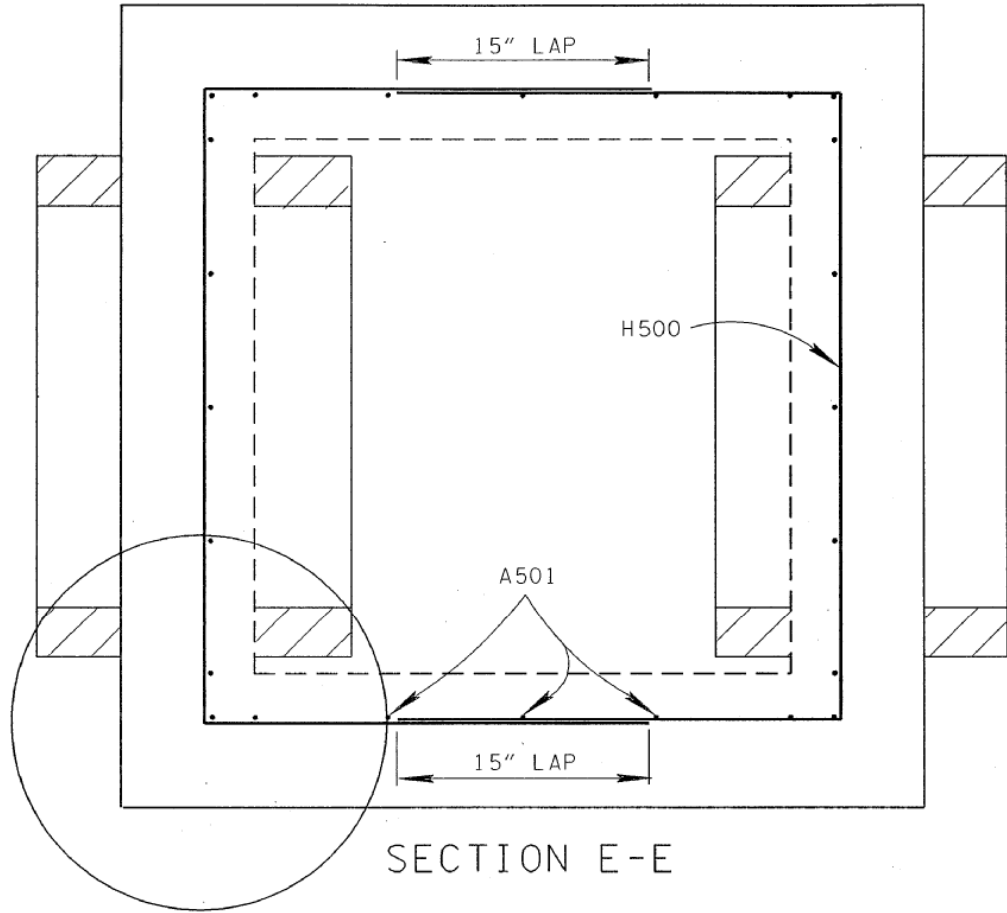
PLAN VIEW



ELEVATION VIEW

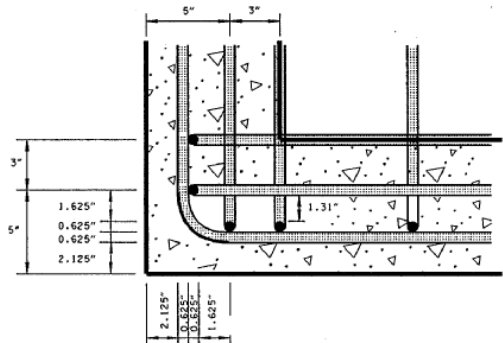


CONCRETE CATCH BASIN DETAILS FOR D-CB-12LP



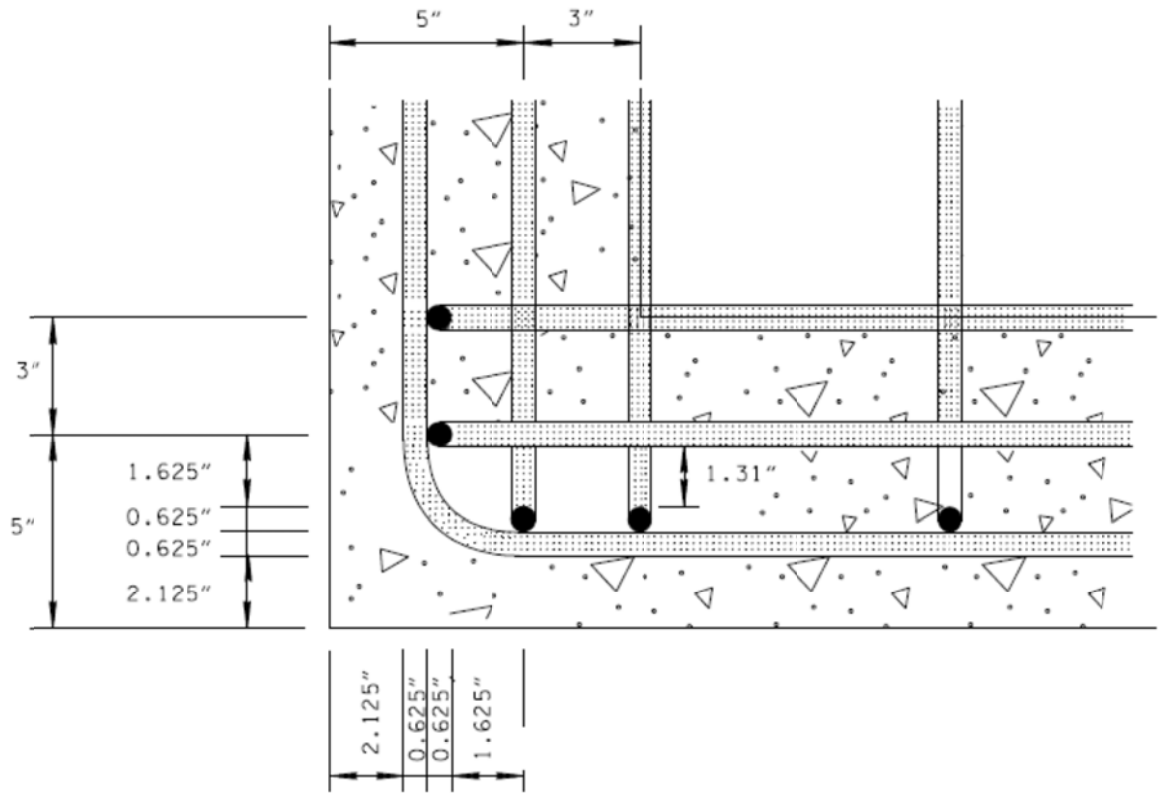
SECTION E-E
(PLAN VIEW)

SHOWING CORNER BARS ONLY



SECTION E-E
(PLAN VIEW)

SHOWING ALL REQUIRED REINFORCEMENT



SECTION E-E

PLAN VIEW