STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
DESIGN DIVISION
NASHVILLE, TENNESSEE 37243-0348

JOHN C. SCHROER
COMMISSIONER

BILL HASLAM
GOVERNOR

INSTRUCTIONAL BULLETIN NO. 12-15

Regarding Revised Standard Drawings and Section V of the Design Guidelines

Effective for the October 2012 Letting (August 14 Turn-in), the following Standard Drawings and Section V of the Design Guidelines are revised.

This Instructional Bulletin will be void after August 14, 2012.

DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-CB-10LPC	8-1-12	LOW PROFILE LOWERED CURB 32” X 26” RECTANGULAR CONCRETE NO. 10LPC CATCH BASIN
D-CB-10RA	8-1-12	STANDARD PRECAST 48” CIRCULAR NO. 10 CATCH BASIN
D-CB-10S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 10 CATCH BASIN
D-CB-10SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 10 CATCH BASIN
D-CB-12B	8-1-12	STANDARD RECTANGULAR BRICK NO. 12 CATCH BASIN
D-CB-12LP	8-1-12	LOW PROFILE 32” X 32” SQUARE CONCRETE NO. 12LP CATCH BASIN
D-CB-12P	8-1-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12RA	8-1-12	STANDARD PRECAST 48” CIRCULAR NO. 12 CATCH BASIN
D-CB-12RB	8-1-12	STANDARD PRECAST 60” AND 72” CIRCULAR NO. 12 CATCH BASIN
D-CB-12RC	8-1-12	STANDARD PRECAST 84” THRU 120” CIRCULAR NO. 12 CATCH BASIN
D-CB-12S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SD	8-1-12	STANDARD 7’X7’ SQUARE 7’ X 7’ SQUARE CONCRETE NO. 12 CATCH BASIN

DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-CB-12SE	8-1-12	STANDARD 9’ X 9’ SQUARE NO. 12 CATCH BASIN
D-CB-13B	8-1-12	STANDARD RECTANGULAR BRICK NO. 13 CATCH BASIN
D-CB-13P	8-1-12	STANDARD PRECAST RECTANGULAR NO. 13 CATCH BASIN
D-CB-13RA	8-1-12	STANDARD PRECAST 48” CIRCULAR NO. 13 CATCH BASIN
D-CB-13RB	8-1-12	STANDARD PRECAST 60” AND 72’ NO. 13 CATCH BASIN
D-CB-13RC	8-1-12	STANDARD PRECAST 84’ THRU 120” CIRCULAR NO. 13 CATCH BASIN
D-CB-13S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-14B	8-1-12	STANDARD RECTANGULAR BRICK NO. 14 CATCH BASIN
D-CB-14P	8-1-12	STANDARD PRECAST RECTANGULAR COCNRETE NO. 14 CATCH BASIN
D-CB-14RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN
D-CB-14S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 14 CATCH BASIN
D-CB-14SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 14 CATCH BASIN
D-CB-16B	8-1-12	STANDARD RECTANGULAR BRICK NO. 16 CATCH BASIN
D-CB-16S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 16 CATCH BASIN
D-CB-17S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 17 CATCH BASIN
D-CB-25B	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN
D-CB-25LP	8-1-12	LOW PROFILE 32” X 32” SQUARE CONCRETE NO. 25LP CATCH BASIN
D-CB-25P	8-1-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 24 CATCH BASIN
D-CB-25RA	8-1-12	STANDARD PRECAST 48” CIRCULAR NO. 25 CATCH BASIN
D-CB-25RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN
D-CB-25S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN
D-CB-25SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 25 CATCH BASIN
D-CB-25SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 25 CATCH BASIN
D-CB-25SD	8-1-12	STANDARD 7’ X 7’ SQUARE CONCRETE NO. 25 CATCH BASIN

DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-CB-25SE	8-1-12	STANDARD 9’ X 9’ CONCRETE NO. 25 CATCH BASIN
D-CB-26P	8-1-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 26 CATCH BASIN
D-CB-26S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 26 CATCH BASIN
D-CB-27S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 27 CATCH BASIN
D-CB-28S	8-1-12	STANDARD RECTANGULAR BRICK NO. 28 CATCH BASIN
D-CB-28LP	8-1-12	LOW PROFILE 32” X 32” SQUARE CONCRETE NO. 28LP CATCH BASIN
D-CB-28P	8-1-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 28 CATCH BASIN
D-CB-28RA	8-1-12	STANDARD PRECAST 48” CIRCULAR NO. 28 CATCH BASIN
D-CB-28RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 28 CATCH BASIN
D-CB-28S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 28 CATCH BASIN
D-CB-29P	8-1-12	STANDARD PRECAST RECTANGULAR COCNRETE NO. 29 CATCH BASIN
D-CB-29S	8-1-12	STANDARD RECTANGULAR CONCRETE NO. 9 CATCH BASIN
D-CB-31R	8-1-12	STANDARD PRECAST CIRCULAR NO. 31 CATCH BASIN
D-CB-31SD	8-1-12	STANDARD 7’ X 7’ SQUARE CONCRETE NO. 31 CATCH BASIN
D-CB-31SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 31 CATCH BASIN
D-CB-32LP	8-1-12	STANDARD 80” X 32” RECTANGULAR CONCRETE NO. 32 CATCH BASIN
D-CB-38RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN
D-CB-38S	8-1-12	STANDARD 32’ X 32” SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-39RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 39 CATCH BASIN
D-CB-39S	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 39 CATCH BASIN

DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-CB-39SD	8-1-12	STANDARD 7’ X 7’ SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-40S	8-1-12	STANDARD 4’ X 8’ RECTANGULAR CONCRETE NO. 40 CATCH BASIN
D-CB-40SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 40 CATCH BASIN
D-CB-41LP	8-1-12	LOW PROFILE 32” X 32” SQUARE CONCRETE NO 41LP CATCH BASIN
D-CB-41P	8-1-12	STANDARD 4’ X 3’ PRECAST RECTANGULAR CONCRETE NO. 41 CATCH BASIN
D-CB-41RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 41 CATCH BASIN
D-CB-41S	8-1-12	STANDARD 4’ X 3’ RECTANGULAR CONCRETE NO. 41 CATCH BASIN
D-CB-41SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 41 CATCH BASIN
D-CB-41SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 41 CATCH BASIN
D-CB-41SD	8-1-12	STANDARD 7’ X 7’ SQUARE CONCRETE NO. 41 CATCH BASIN
D-CB-41SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 41 CATCH BASIN
D-CB-42RB	8-1-12	STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN
D-CB-42S	8-1-12	STANDARD 32” X 32” SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SB	8-1-12	STANDARD 4’ X 4’ SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SC	8-1-12	STANDARD 5’2” X 5’2” SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SD	8-1-12	STANDARD 7’ X 7’ SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-43R	8-1-12	STANDARD PRECAST CIRCULAR NO. 43R CATCH BASIN
D-CB-43SB	8-1-12	STANDARD 8’ X 4’ RECTANGULAR CONCRETE NO. 43SB CATCH BASIN
D-CB-43SC	8-1-12	STANDARD 8’ X 5’2” RECTANGULAR CONCRETE NO. 43SC CATCH BASIN
D-CB-44SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 44 CATCH BASIN
D-CB-45S	8-1-12	STANDARD 8’ X 4’ RECTANGULAR CONCRETE NO. 45 CATCH BASIN
D-CB-46SE	8-1-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 46 CATCH BASIN

DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-CB-51SC	8-1-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-51SD	8-1-12	STANDARD 7'X7' SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-51SE	8-1-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-52SE	8-1-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 52 CATCH BASIN
D-CB-99		MISCELLANEOUS DETAILS FOR RECTANGULAR STRUCTURES
D-CB-99R		MISCELLANEOUS DETAILS FOR ROUND STRUCTURES
D-JBS-1	8-1-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 JUNCTION BOX
D-JBS-2	8-1-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2 JUNCTION BOX
D-JBS-3	8-1-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 JUNCTION BOX
D-JBS-4	8-1-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 4 JUNCTION BOX
D-JBS-5	8-1-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 5 JUNCTION BOX
D-MH-2	8-1-12	STANDARD MASONRY & PRECAST NO. 3 MANHOLE
D-MH-3	8-1-12	STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE
D-MH-3A	8-1-12	STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE
D-MH-3B		STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE
D-MH-4	8-1-12	STANDARD NO. 3 MANHOLE CASTING AND STEPS
D-MH-5	8-1-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 MANHOLE
D-MH-6	8-1-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 3 MANHOLE
D-MH-7	8-1-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 3 MANHOLE
D-RF-1		STANDARD PRECAST RISER
D-SDS-1	8-1-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 SPRING DRAIN BOX
D-SDS-2A	8-1-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2A SPRING DRAIN BOX
D-SDS-2B	8-1-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2A SPRING

IB 12-16

DRAIN BOX

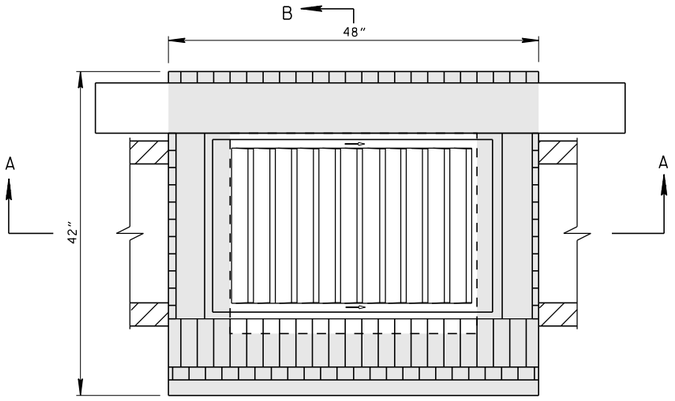
DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-SDS-3A	8-1-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 2A SPRING DRAIN BOX

Copies of the revised standard drawings are attached.

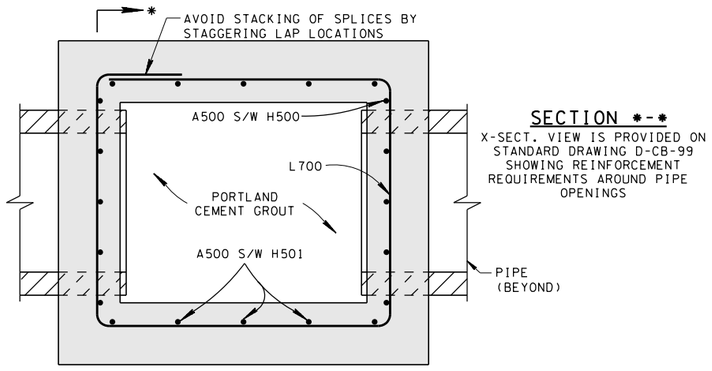
Carolyn Stonecipher

Carolyn Stonecipher, P.E.,
Civil Engineering Director
Design Division

August 6, 2012
CS:ARH:MWC
Attachment



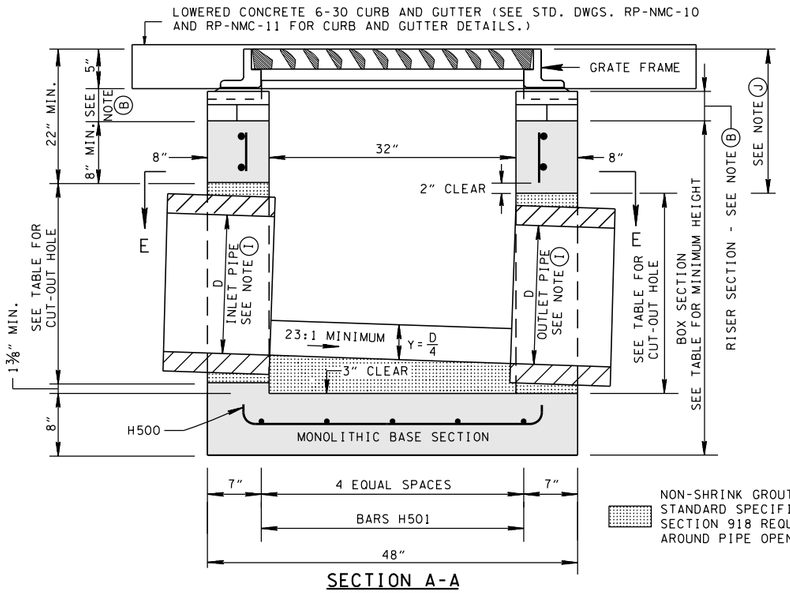
PLAN VIEW



SECTION ✱-✱

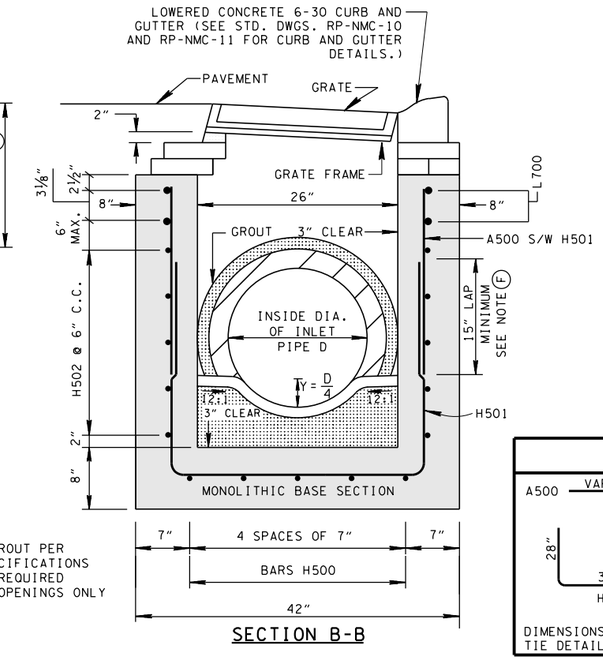
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

SECTION E-E



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	42⅜	3.74
(4) 24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 32 INCH INTERIOR WALLS ONLY.

(5) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 67".

- ☐ REV. 9-11-02: CHANGED GENERAL NOTE (J)
- ☐ REV. 4-15-03: CHANGED DRAWING NAME.
- ☐ REV. 7-29-04: CHANGED GENERAL NOTE (I)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 10LPC (LOW PROFILE LOWERED CURB) CONCRETE CATCH BASINS AND ALL PRECAST NO. 10LPC (LOW PROFILE LOWERED CURB) CONCRETE CATCH BASINS THAT ARE INSTALLED IN AREA WITH A LOWERED CURB SUCH AS A DRIVEWAY ENTRANCE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 9 INCHES AS LONG AS 22 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

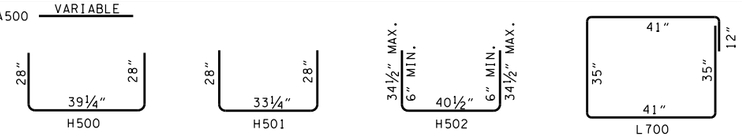
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-10.01 CATCH BASINS, TYPE 10, 0'-4' TO 611-10.02 CATCH BASIN, TYPE 10, > 4'-8' PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

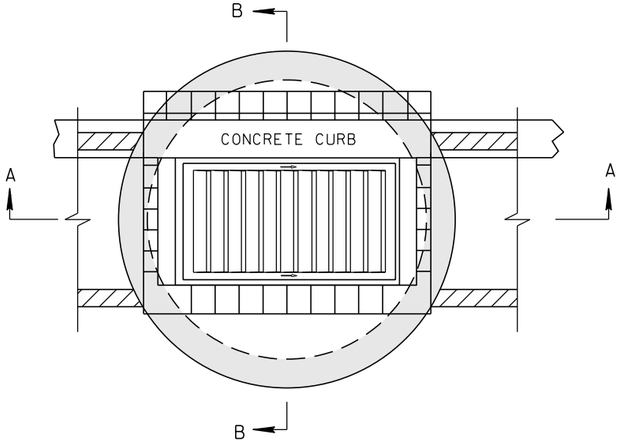
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

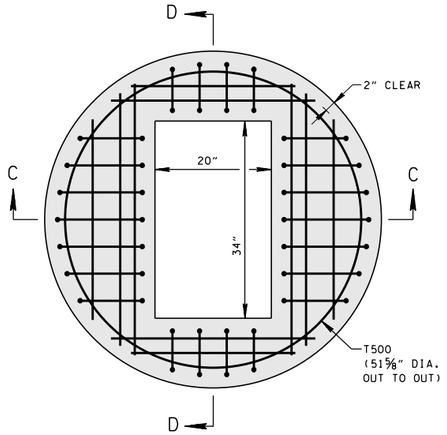
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LOW PROFILE LOWERED CURB 32″ x 26″ RECTANGULAR CONCRETE NO.10LPC CATCH BASIN

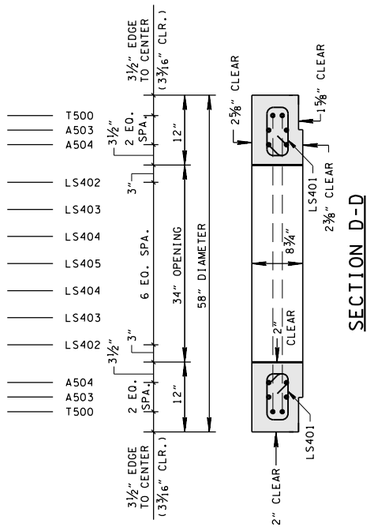
2-28-02 | D-CB-10LPC



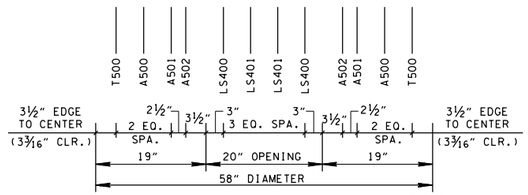
PLAN VIEW

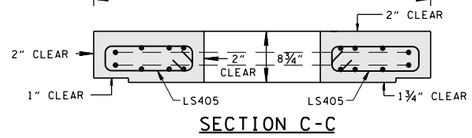


LID REINFORCING

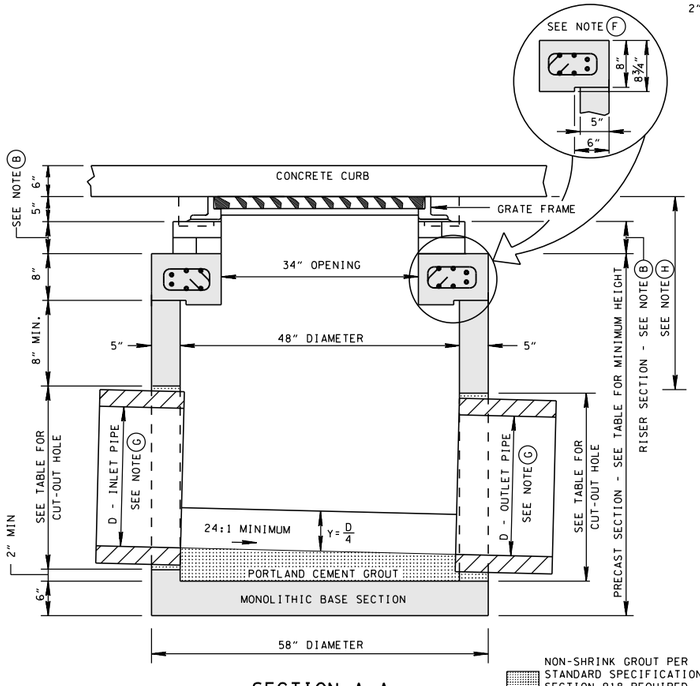


SECTION D-D



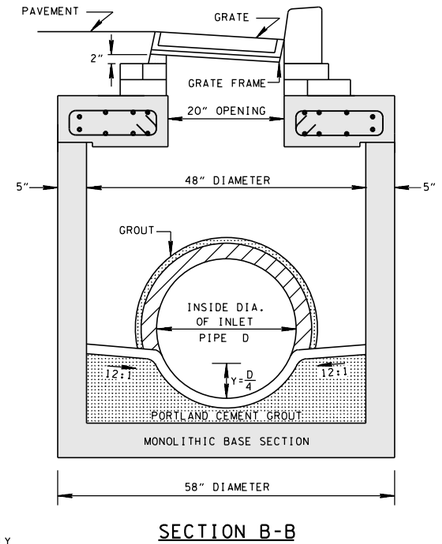


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-10.01 CATCH BASINS, TYPE 10, 0'-4' DEPTH THROUGH 611-10.05 CATCH BASINS, TYPE 10, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

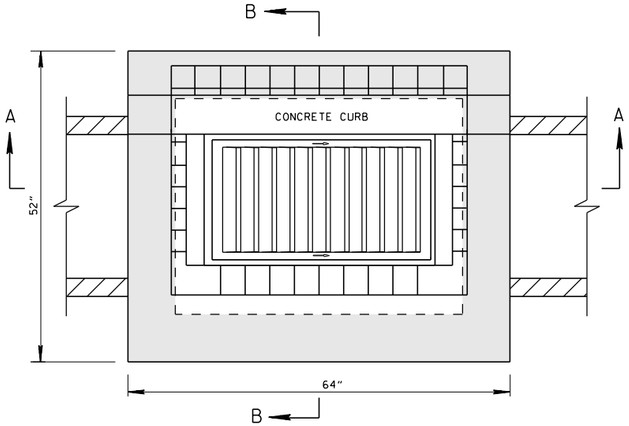
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

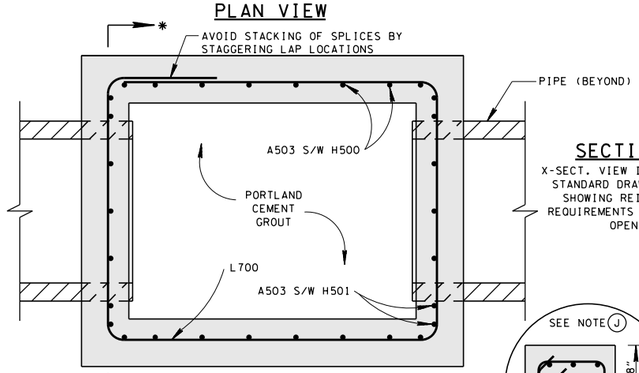
STANDARD PRECAST 48" CIRCULAR NO.10 CATCH BASIN

(FOR USE WITH 6" NONMOUNTABLE CURB)

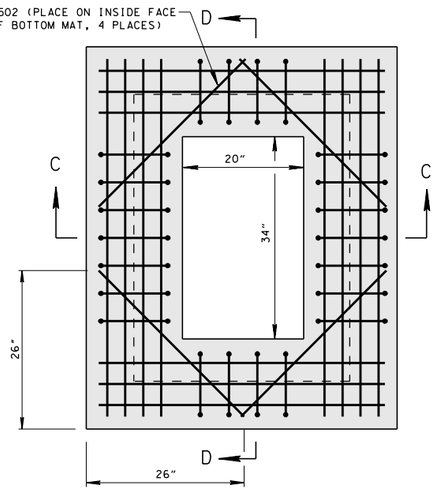
NOT TO SCALE | 9-5-02 | D-CB-10RA



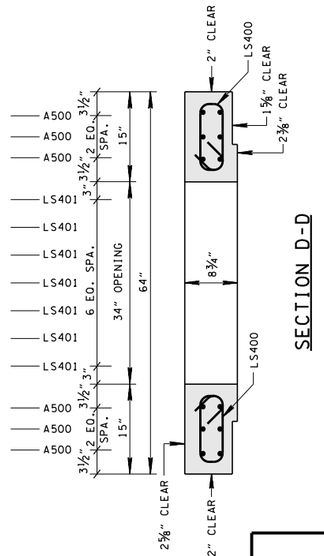
PLAN VIEW



SECTION E-E



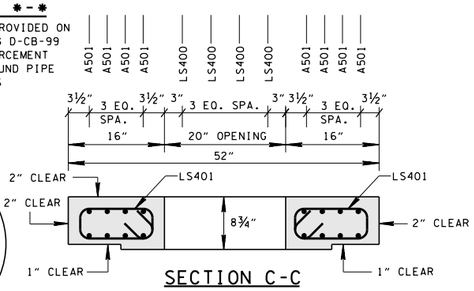
PLAN VIEW



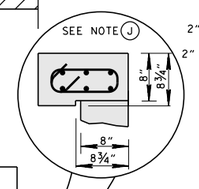
SECTION D-D

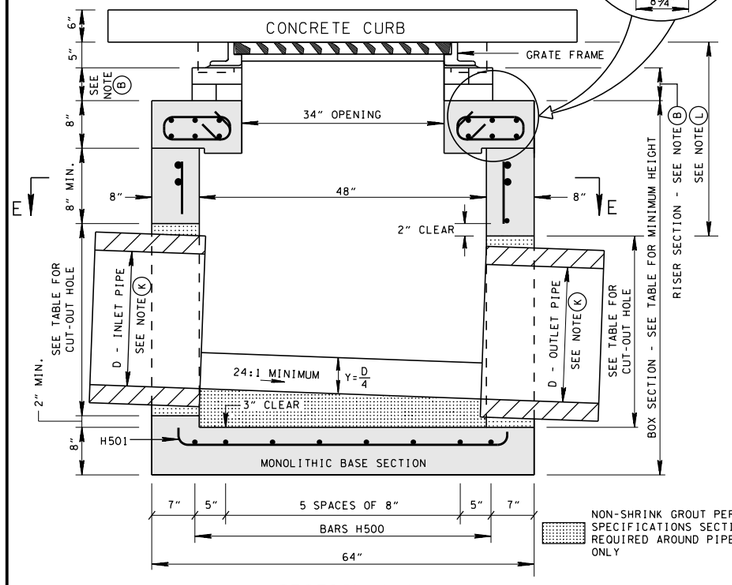
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

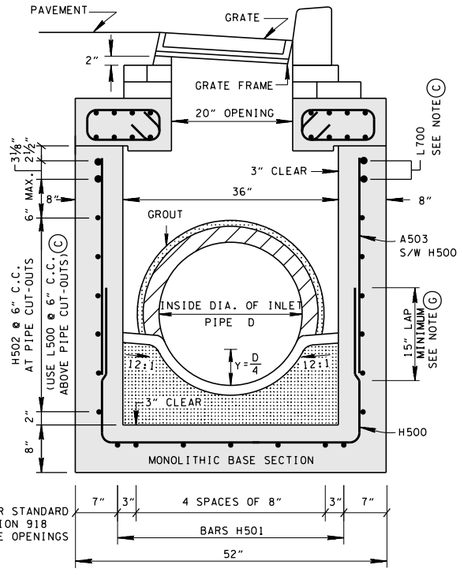


SECTION C-C





SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- REV. 10-26-97: MODIFIED DRAWING NO. D-CB-12S BY REMOVING CURB OPENING AND CONVERTING IT TO NO. 10 CATCH BASIN.
- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 10S CONCRETE CATCH BASINS AND ALL PRECAST NO. 10S CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

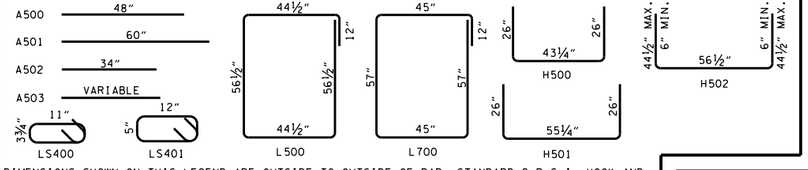
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-10.01 CATCH BASINS, TYPE 10, 0'-4' DEPTH THROUGH 611-10.05 CATCH BASINS, TYPE 10, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

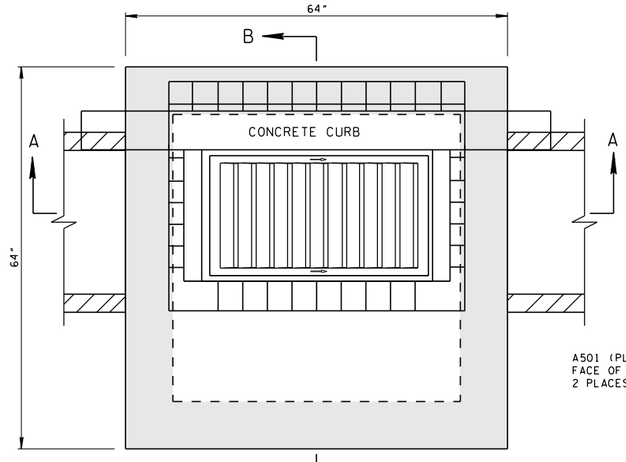
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

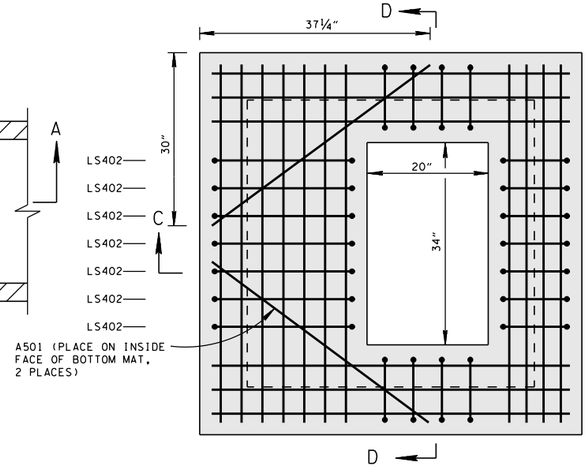
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.10 CATCH BASIN

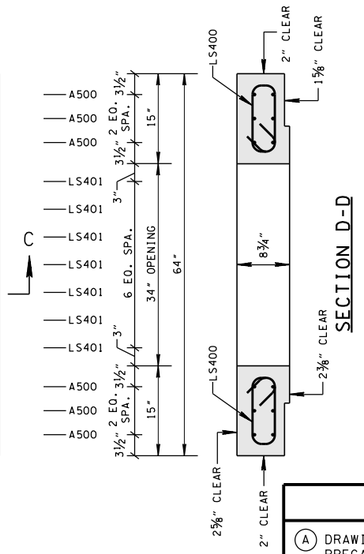
10-26-97 D-CB-10S



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

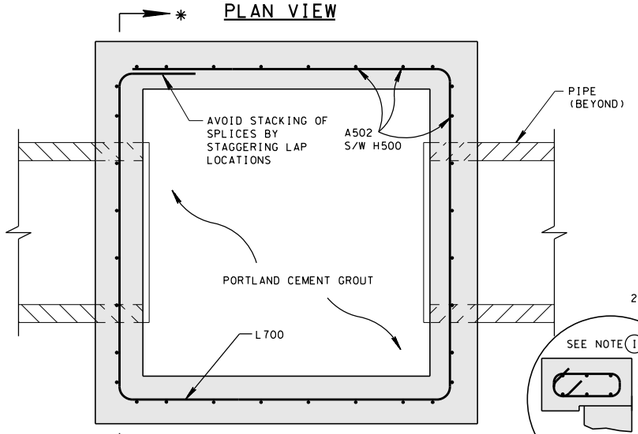
CATCH BASIN DIMENSIONS

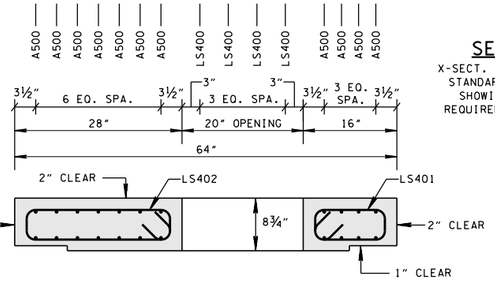
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
30	3½	39	65	4.79
36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

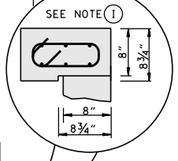
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

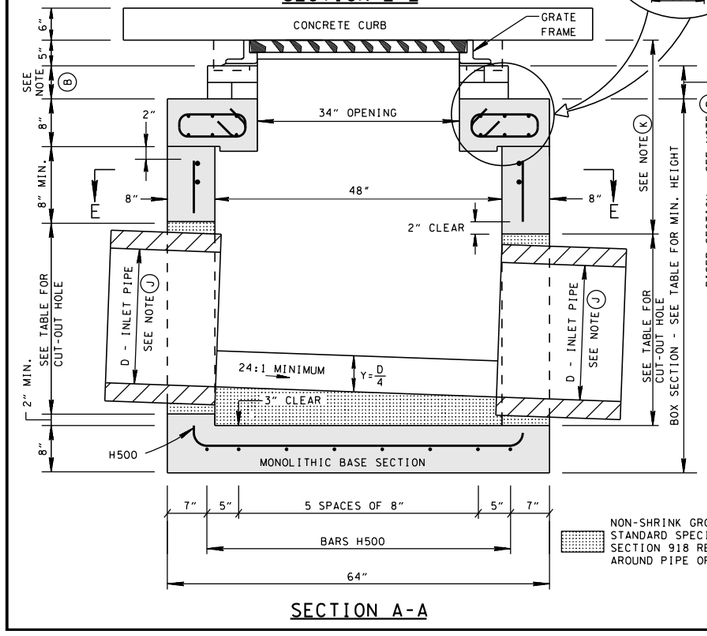


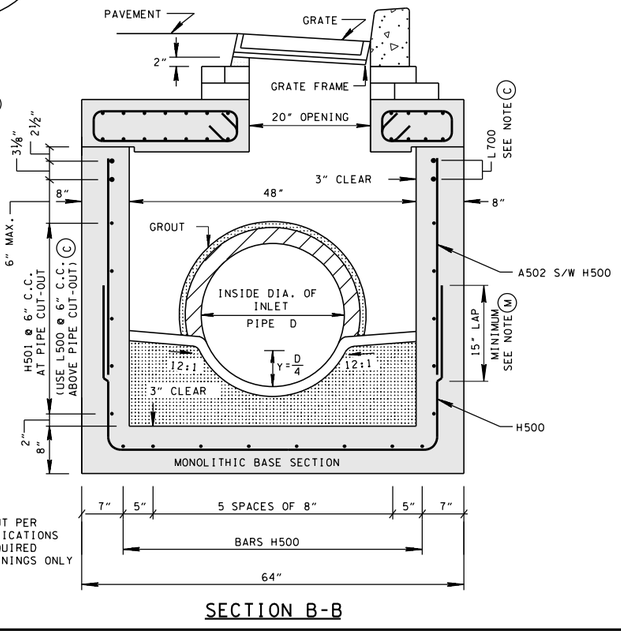


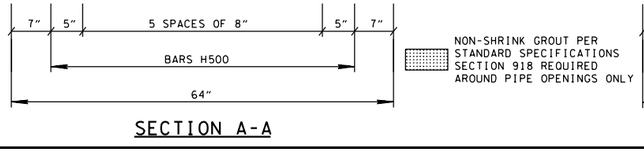
SECTION C-C



SECTION E-E







SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION B-B

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 10SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 10SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

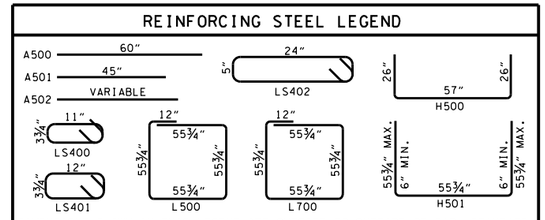
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-10.01 CATCH BASINS, TYPE 10, 0'-4' DEPTH THROUGH 611-10.07 CATCH BASINS, TYPE 10, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

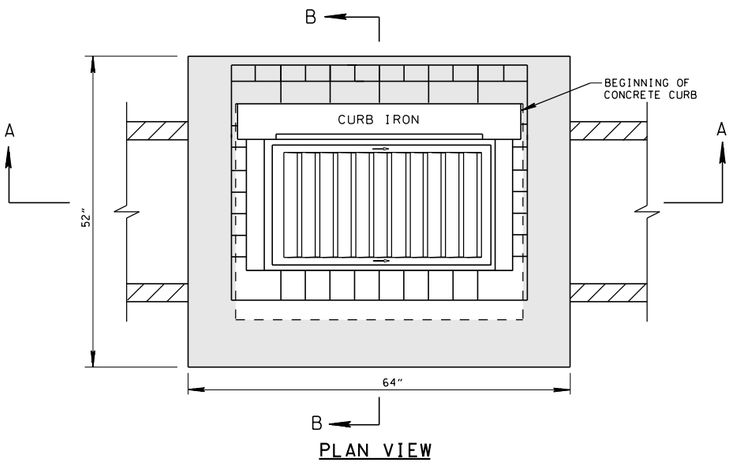
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO.10 CATCH BASIN

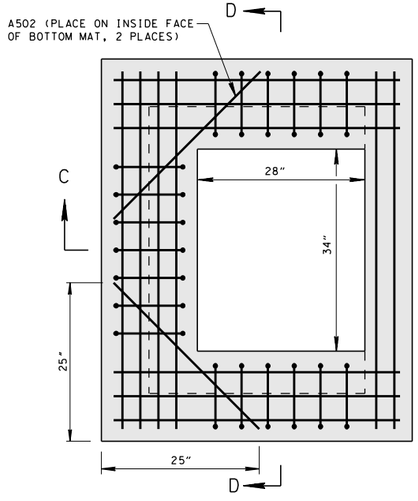
NOT TO SCALE

9-5-02

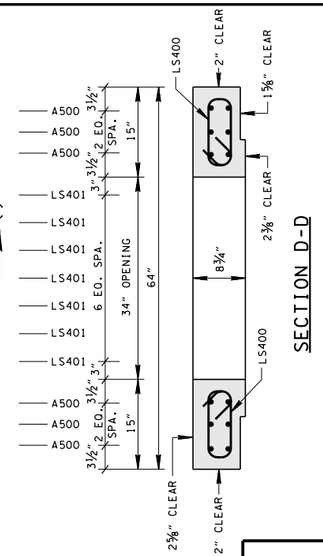
D-CB-10SB



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 8.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(3) 30	3½	39	65	4.79
(3) 36	4	46	72	5.33

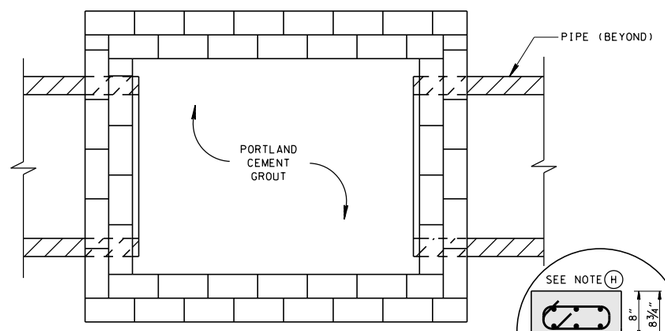
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

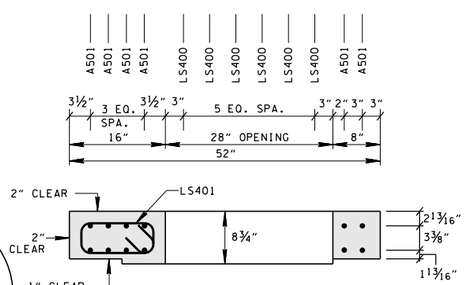
(3) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 1-19-96: MODIFIED DRAWING NO. D-CB-12S BY CHANGING MATERIAL IN SIDE WALLS FROM CONCRETE TO BRICK.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (C) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV.4-15-97: CHANGED LABEL OF BASE SECTION.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

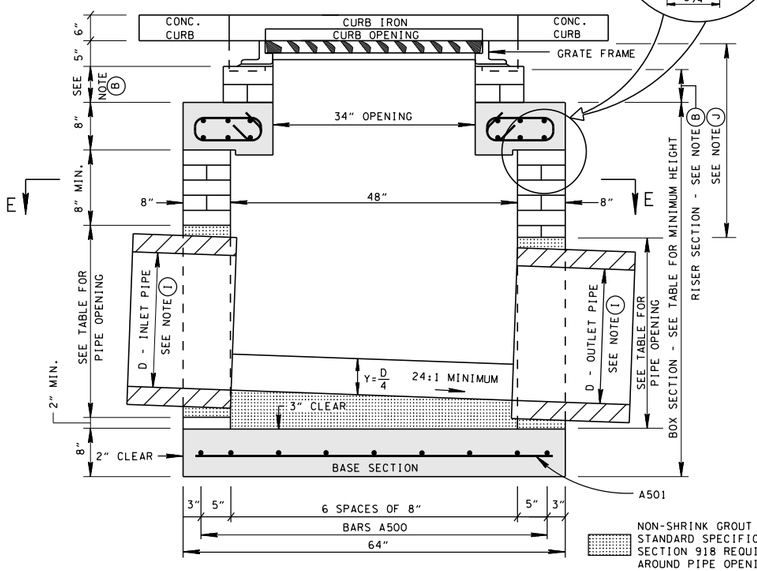
REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



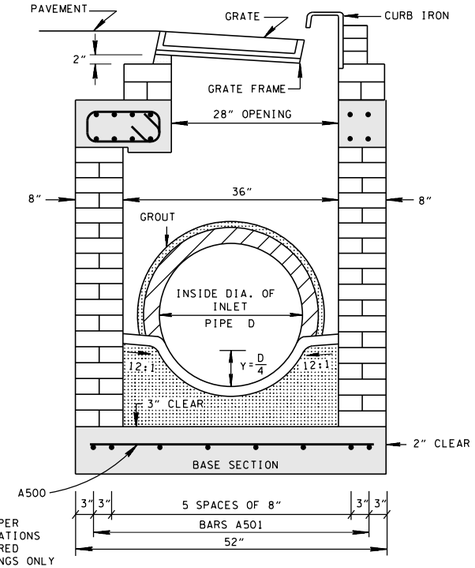
SECTION E-E



SECTION C-C



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 12 BRICK CATCH BASINS THAT ARE EIGHT FEET AND LESS IN DEPTH. SEE STANDARD DRAWINGS D-CB-12P AND D-CB-12S FOR DETAILS OF NO. 12 CONCRETE CATCH BASINS THAT ARE MORE THAN EIGHT FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

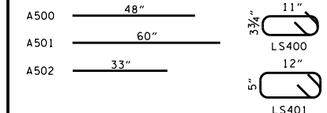
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH AND 611-12.02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



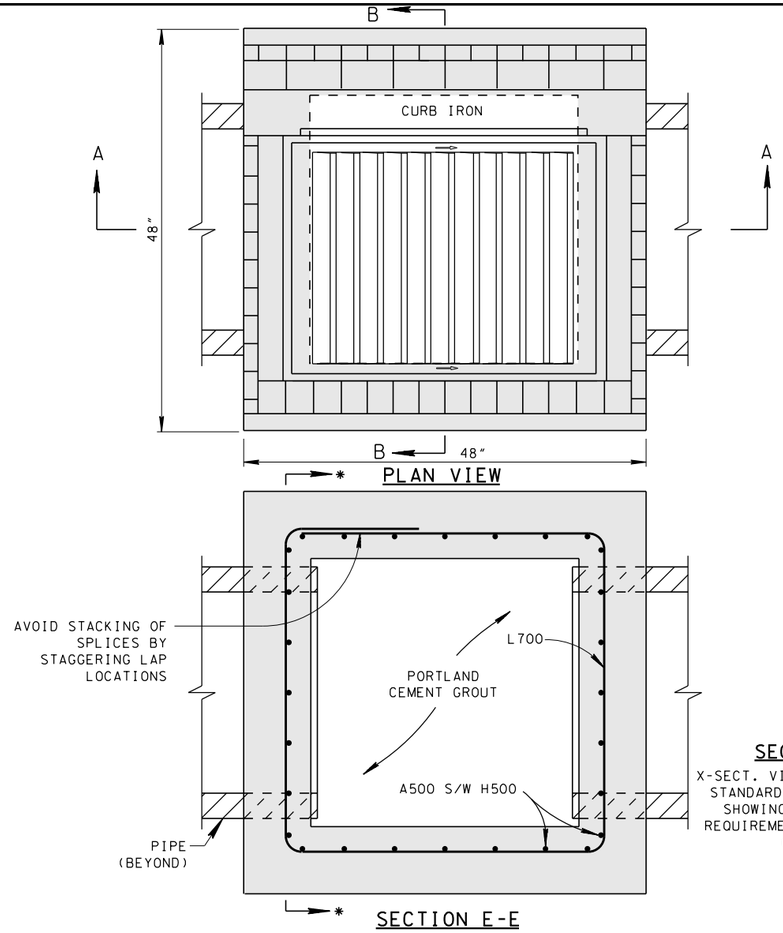
DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

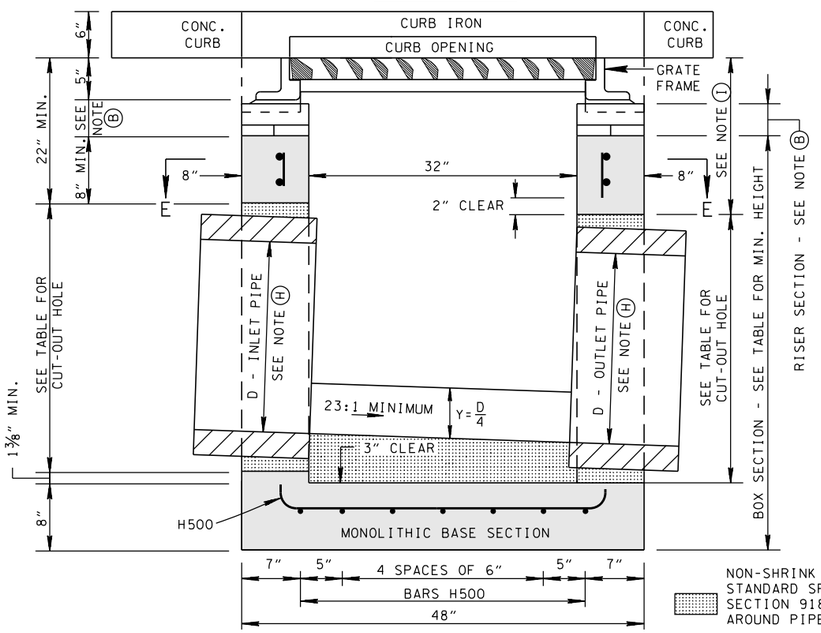
STANDARD RECTANGULAR BRICK NO. 12 CATCH BASIN

NOT TO SCALE | 1-19-96 | D-CB-12B

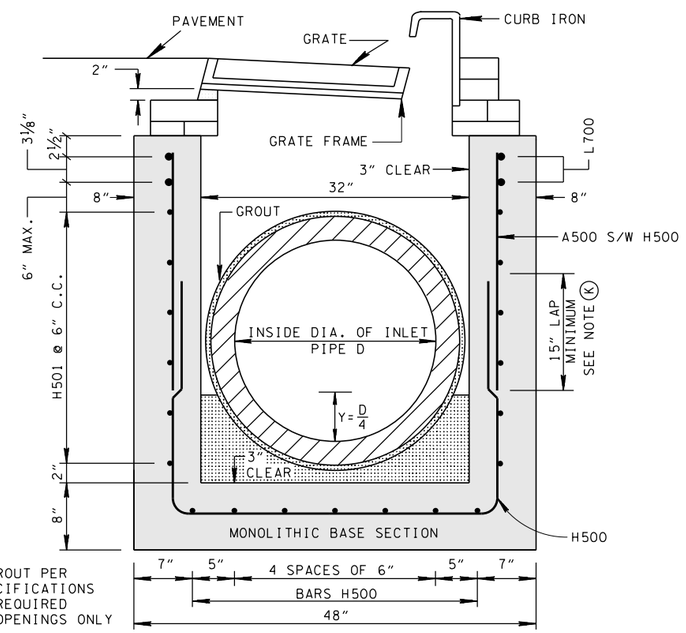


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12LP (LOW PROFILE) AND ALL PRECAST NO. 12LP (LOW PROFILE) CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 9 INCHES AS LONG AS 22 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(I) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(J) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

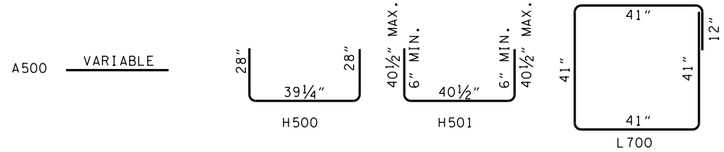
(K) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH AND 611-12.02, CATCH BASINS, TYPE 12, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

- ☐ REV. 5-27-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE. CHANGED PRECAST CONCRETE SPECIFICATION. ADDED CATCH BASIN MAXIMUM DEPTH REQUIREMENT NOTE.
- ☐ REV.12-18-00: CHANGED DRAWING NO. FROM D-CB-12SA TO D-CB-12LP.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- ☐ REV. 7-29-04: CHANGED GENERAL NOTE (I)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	42⅜	3.74
24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 61".

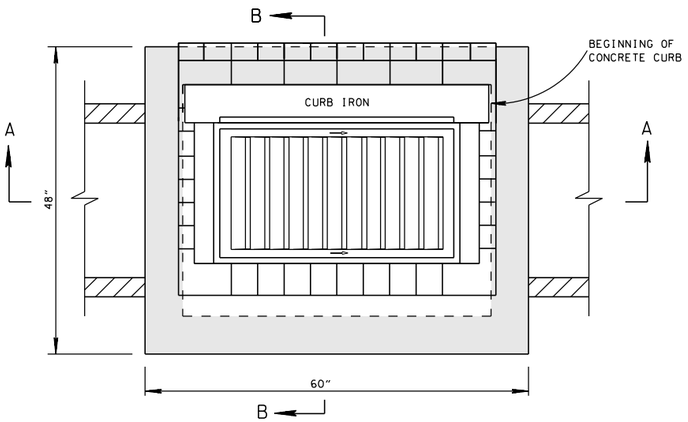
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

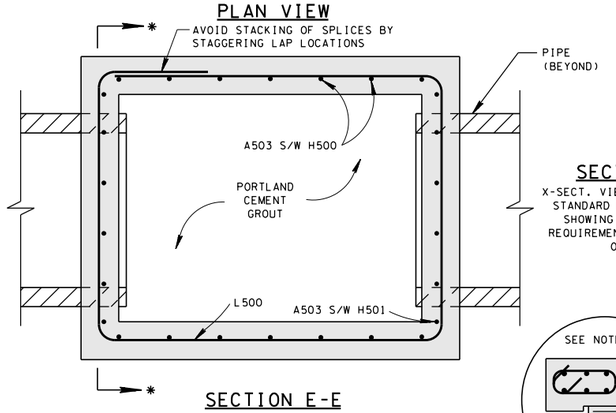
LOW PROFILE 32" x 32" SQUARE CONCRETE NO. 12LP CATCH BASIN

(FOR USE WITH 6" NON-MOUNTABLE CURB)

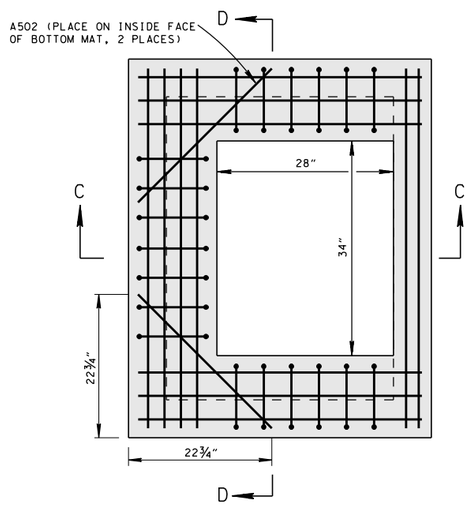
NOT TO SCALE | 1-19-98 | D-CB-12LP



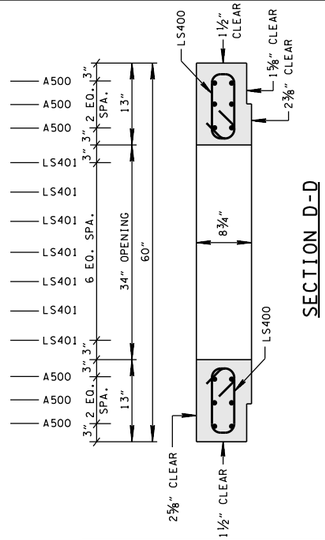
PLAN VIEW



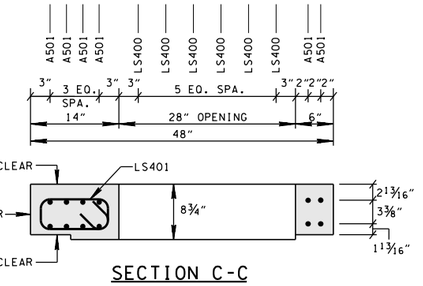
SECTION E-E

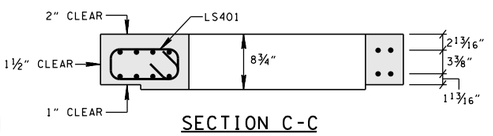


PLAN VIEW

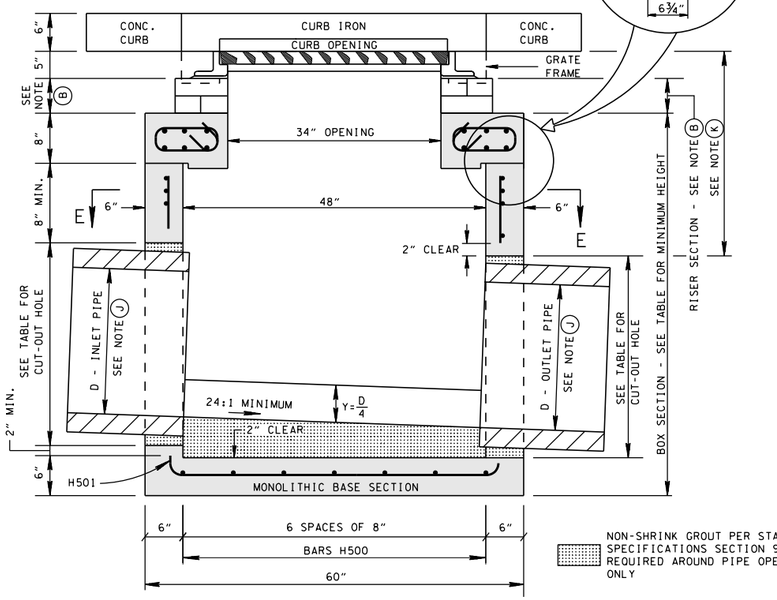


SECTION D-D



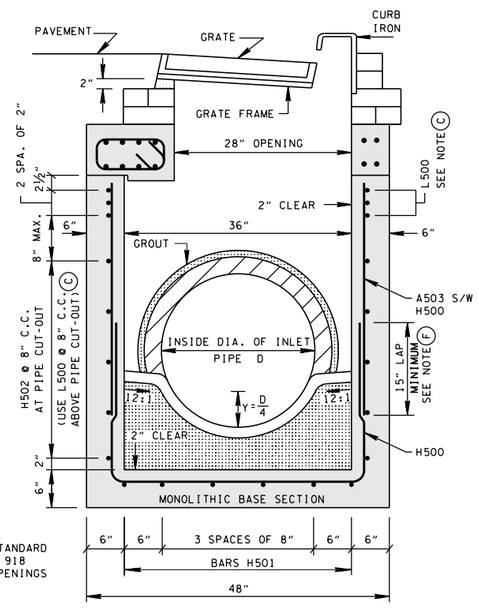


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	49	3.71
24	3	32	56	4.25
(4) 30	3½	39	63	4.79
(4) 36	4	46	70	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 12 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-12S FOR DETAILS OF CAST-IN-PLACE NO. 12 CONCRETE CATCH BASINS AND PRECAST NO. 12 CONCRETE CATCH BASINS THAT ARE GREATER TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

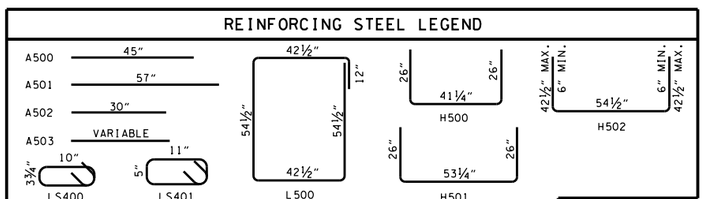
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH THROUGH 611-12.03, CATCH BASINS, TYPE 12, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



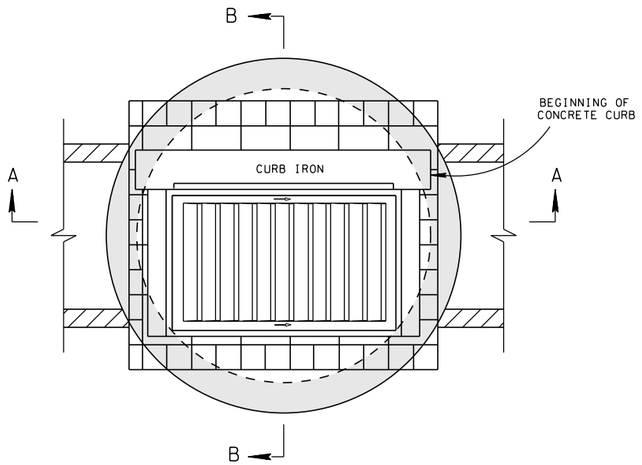
DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

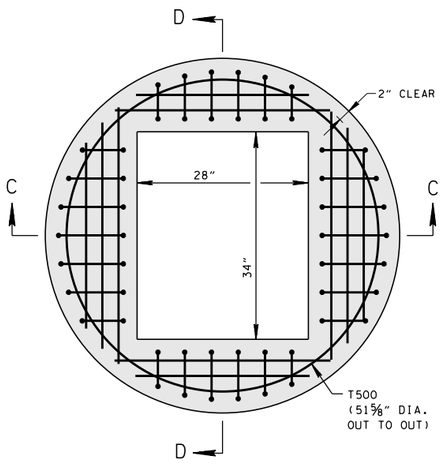
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RECTANGULAR CONCRETE NO. 12 CATCH BASIN

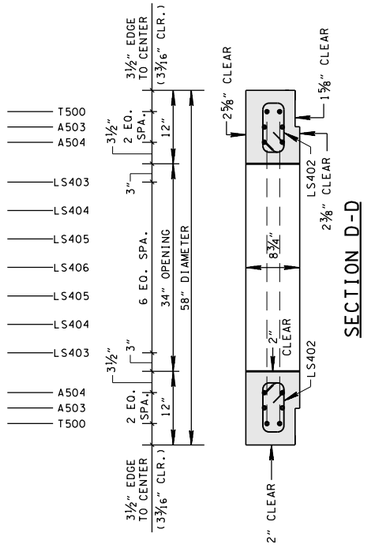
NOT TO SCALE | 12-18-95 | D-CB-12P



PLAN VIEW



LID REINFORCING



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25

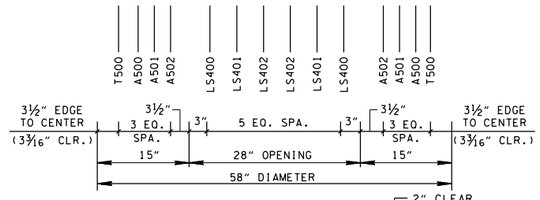
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

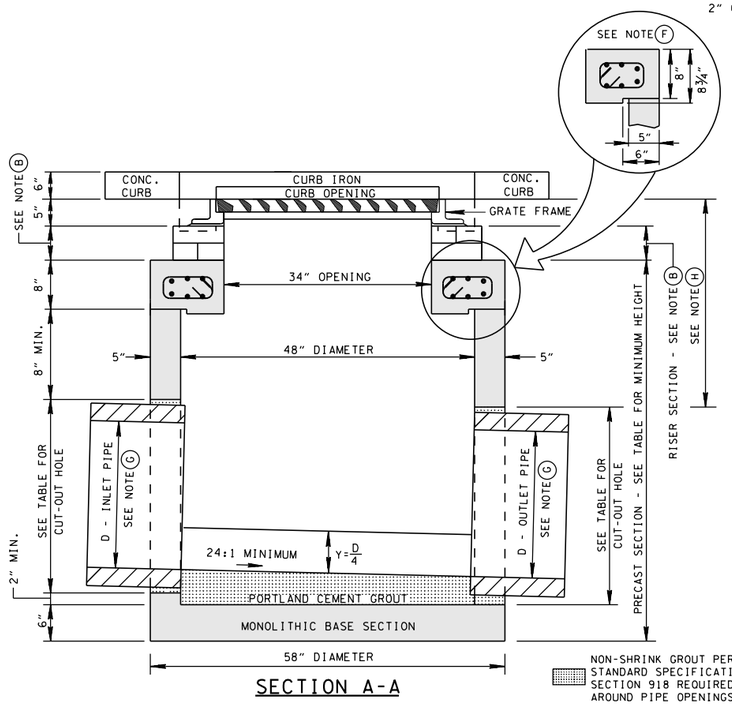
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 12-18-95: CHANGED BASE THICKNESS AND VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (F) CHANGED LABEL OF LAST FOUR GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 12-18-99: MODIFIED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

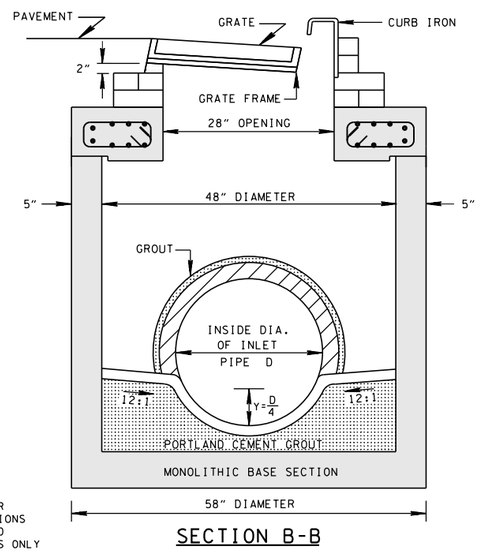
  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION C-C



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-12RB FOR DETAILS REGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH THROUGH 611-12.05 CATCH BASINS, TYPE 12, > 16'-20' DEPTH PER EACH. PAYMENT INCLUES RISER SECTION AND GRATE.

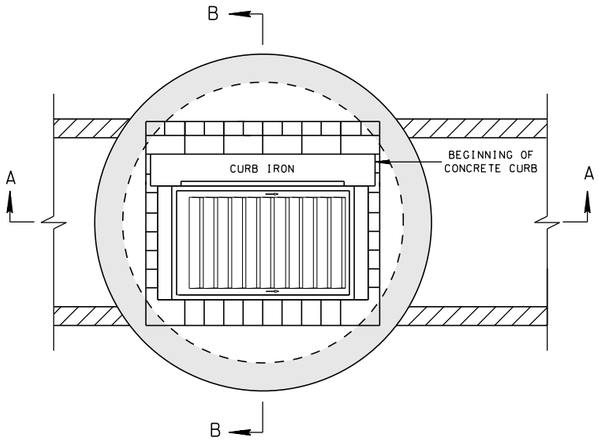
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

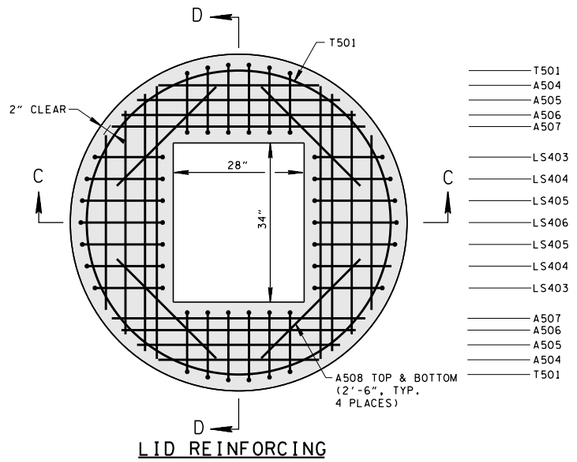
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 48" CIRCULAR NO. 12 CATCH BASIN

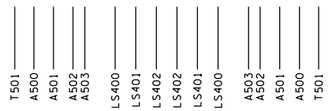
(FOR USE WITH 6" NONMOUNTABLE CURB)

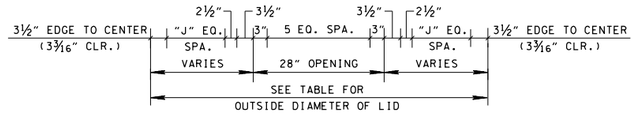
NOT TO SCALE | 5-27-95 | D-CB-12RA

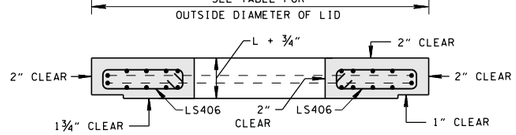




LID REINFORCING







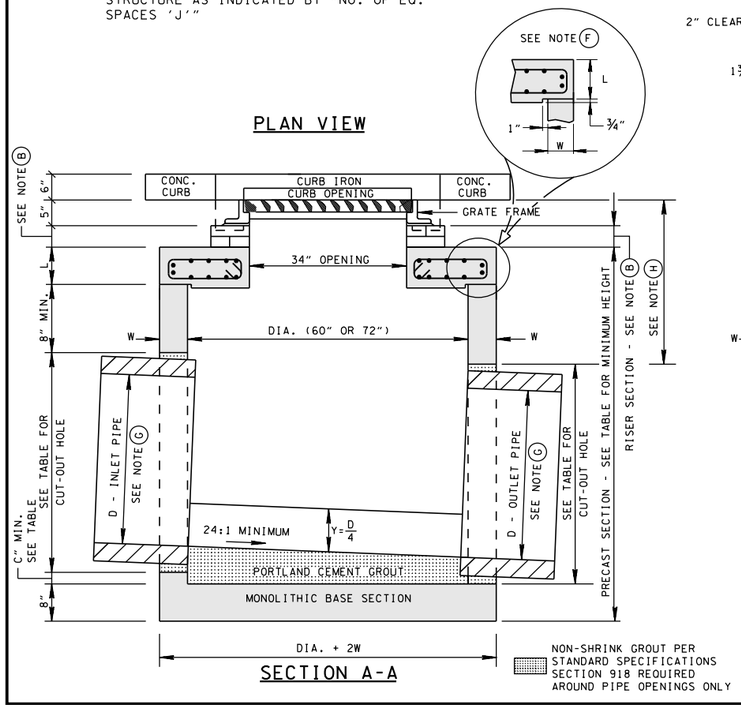
SECTION C-C

VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

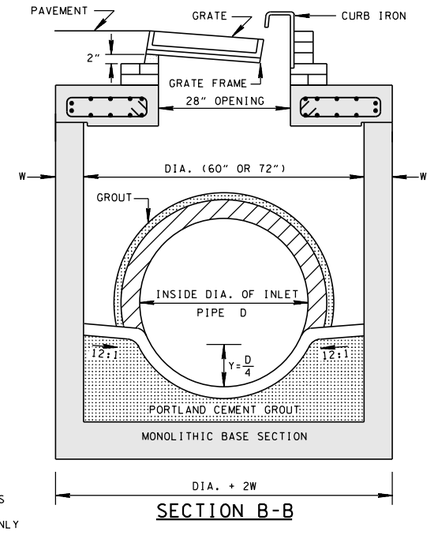
ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE AS INDICATED BY "NO. OF EQ. SPACES 'J'"

PLAN VIEW

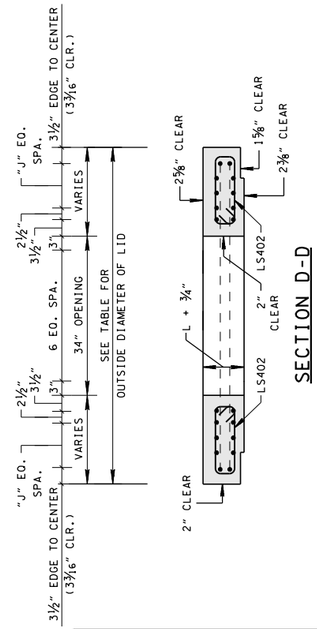


SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS						
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)		FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
			60"	72"	60"	72"
18	2½	25	51½	53	3.75	3.88
24	3	32	58½	60	4.29	4.42
30	3½	39	65½	67	4.83	4.96
36	4	46	72½	74	5.38	5.50
42	4½	53	79½	81	5.92	6.04
48	5	60	86½	88	6.46	6.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (F) HANGED LABEL OF LAST FOUR GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 7-29-97: CHANGED HEIGHT OF CATCH BASIN.
- ☐ REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 4-15-00: MOVED 84" AND 96" DIAMETER CATCH BASINS TO NEW STANDARD DRAWING D-CB-12RC. RENAMED SHEET.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (L) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_Y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN) OR 22 INCH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-12RA FOR DETAILS REGARDING 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) SEE STANDARD DRAWING D-CB-12RC FOR DETAILS REGARDING 84" THRU 120" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH THROUGH 611-12.07, CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-12.08, CATCH BASINS, TYPE 12, ____ '- ____ ' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)	
60	6	8	72	36	24	2.5	
72	7	9	86	48	30	3.0	

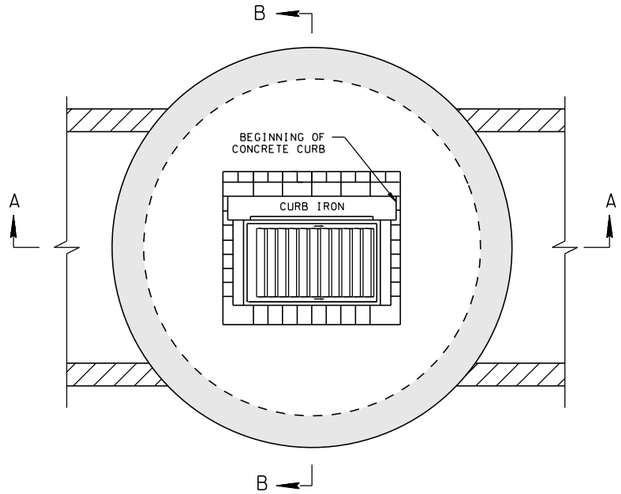
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

NOT TO SCALE

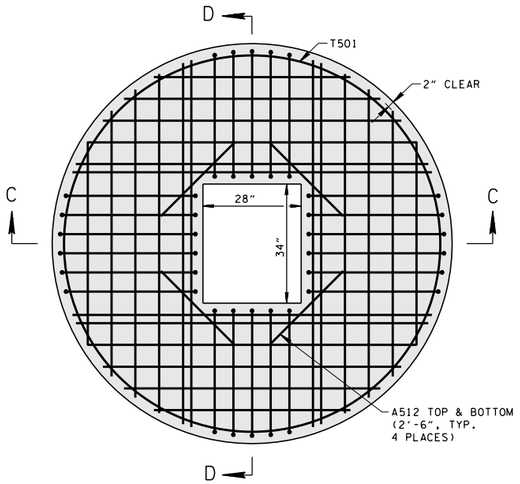
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 60" AND 72" CIRCULAR NO.12 CATCH BASIN
(FOR USE WITH 6" NONMOUNTABLE CURB)

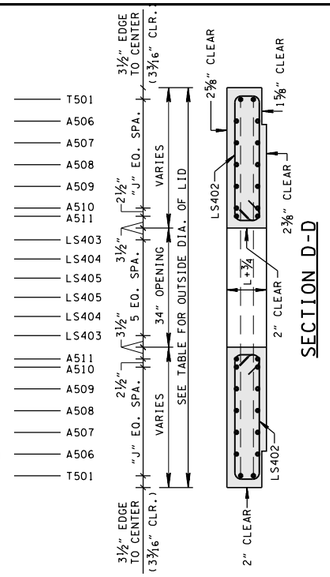
12-18-93 | D-CB-12RB



PLAN VIEW



LID REINFORCING

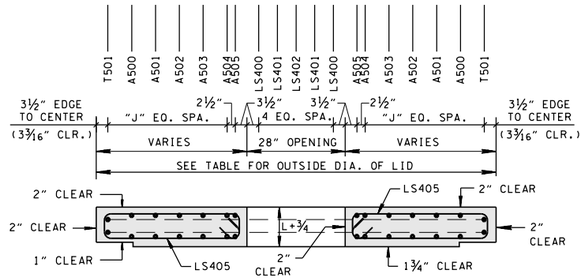


SECTION D-D

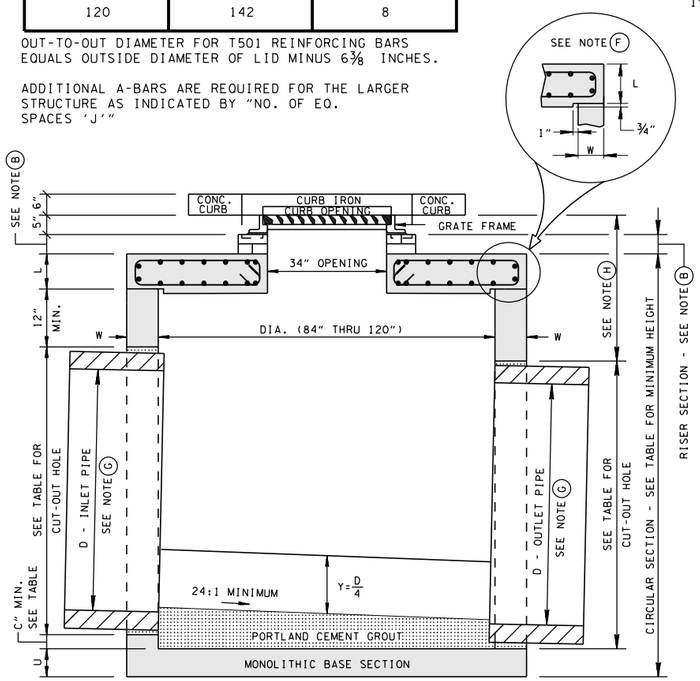
VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
84	100	5
96	114	6
108	128	7
120	142	8

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE AS INDICATED BY "NO. OF EQ. SPACES 'J'"

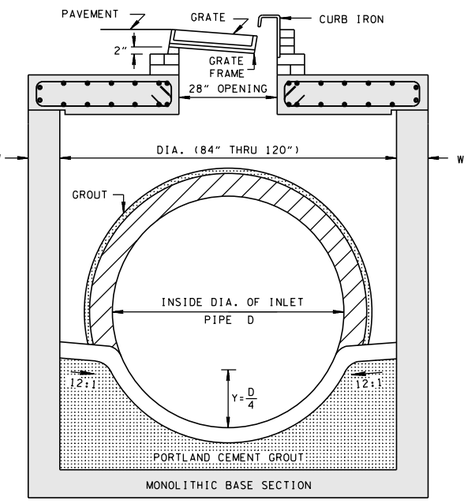


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN DIMENSIONS										
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
			84"	96"	108"	120"	84"	96"	108"	120"
18	2½	25	57½	59	63½	64	4.25	4.38	4.42	4.46
24	3	32	64½	66	70½	71	4.79	4.92	4.96	5.00
30	3½	39	71½	73	77½	78	5.33	5.46	5.50	5.54
36	4	46	78½	80	84½	85	5.88	6.00	6.04	6.08
42	4½	53	85½	87	91½	92	6.42	6.54	6.58	6.63
48	5	60	92½	94	98½	99	6.96	7.08	7.13	7.17
54	5½	67	99½	101	105½	106	7.50	7.63	7.67	7.71
60	6	74	106½	108	112½	113	8.04	8.17	8.21	8.25
66	6½	81	113½	115	119½	120	8.58	8.71	8.75	8.79
72	7	88	120½	122	126½	127	9.13	9.25	9.29	9.33
78	7½	95	127½	129	133½	134	9.67	9.79	9.83	9.88

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 INCHES (FOR 84" INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 96", 108" & 120" INSIDE DIAMETER CATCH BASINS) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH (FOR 84" INSIDE DIAMETER CATCH BASINS) OR A MINIMUM 27 INCH DEPTH (FOR 96", 108" & 120" INSIDE DIAMETER CATCH BASINS) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-12RA FOR DETAILS REGARDING 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) SEE STANDARD DRAWING D-CB-12RB FOR DETAILS REGARDING 60" AND 72" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH THROUGH 611-12.07, CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-12.08, CATCH BASINS, TYPE 12, ____ '- ____ ' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

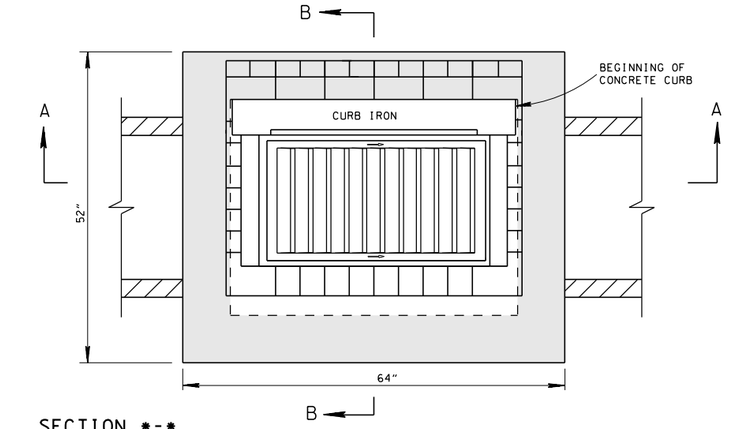
CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	BASE THICKNESS U (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)
84	8	9	8	100	60	36	3.5
96	9	10	8	114	66	42	4.0
108	10	10	12	128	72	48	4.5
120	11	10	12	142	78	54	5.0

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 84" THRU 120" CIRCULAR NO.12 CATCH BASIN
(FOR USE WITH 6" NONMOUNTABLE CURB)

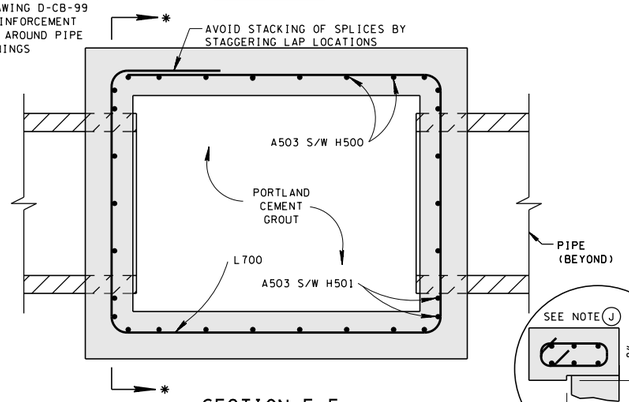
NOT TO SCALE | 4-15-00 | D-CB-12RC



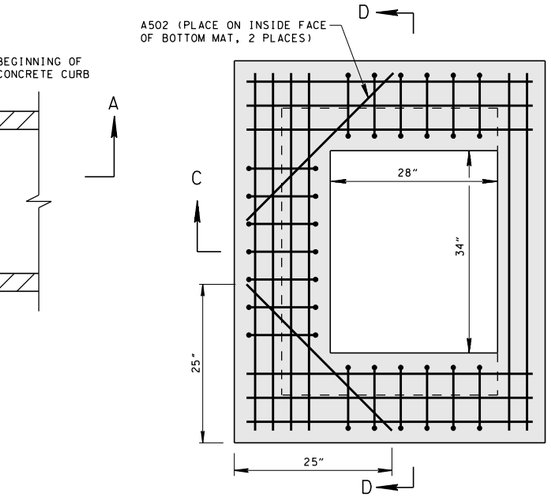
PLAN VIEW

SECTION *-*

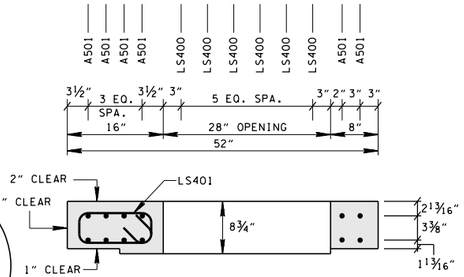
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



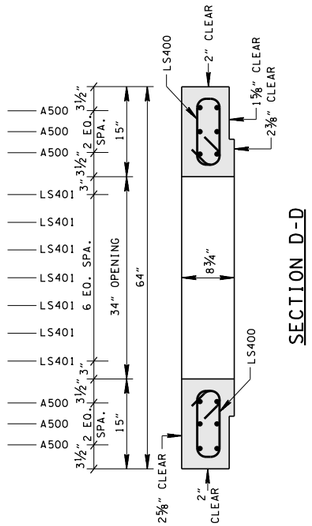
SECTION E-E



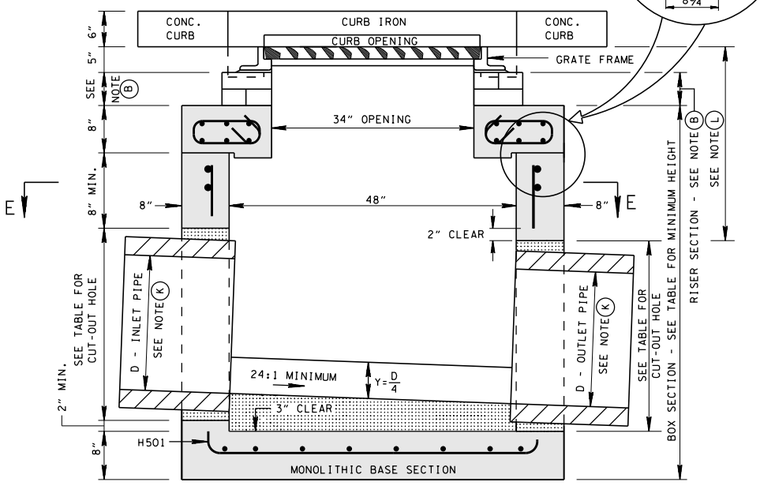
PLAN VIEW



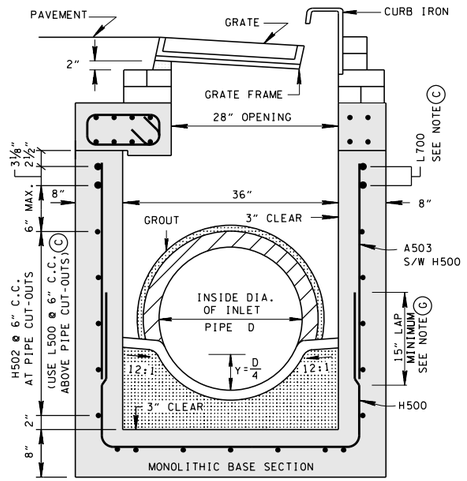
SECTION C-C



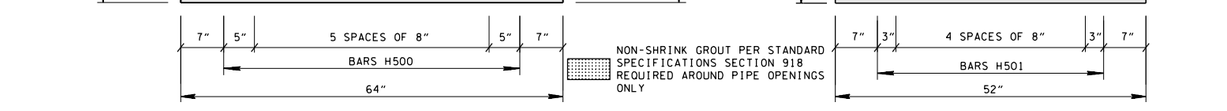
SECTION D-D



SECTION A-A



SECTION B-B



CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12 CONCRETE CATCH BASINS AND ALL PRECAST NO. 12 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-12P FOR DETAILS OF PRECAST NO. 12 CONCRETE CATCH BASINS TWELVE FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

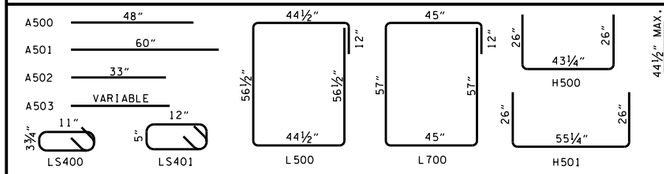
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH THROUGH 611-12.05 CATCH BASINS, TYPE 12, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

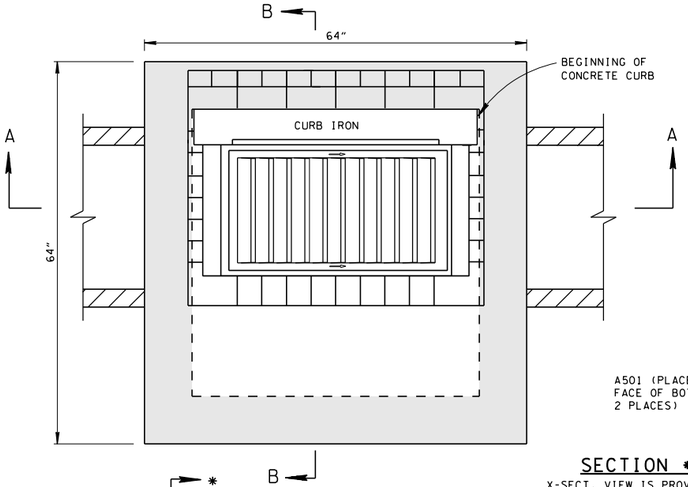
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

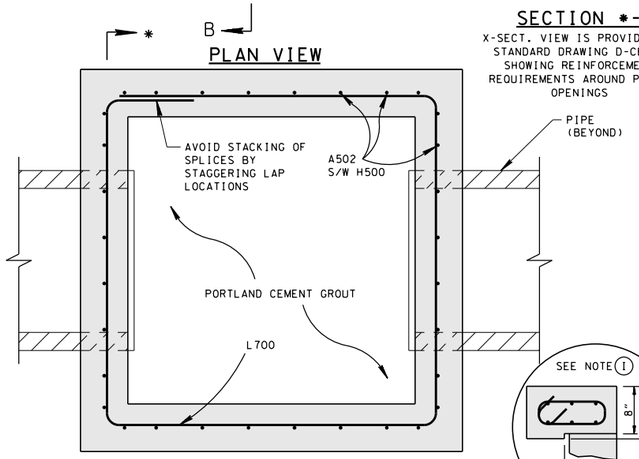
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.12 CATCH BASIN

5-27-95 D-CB-12S



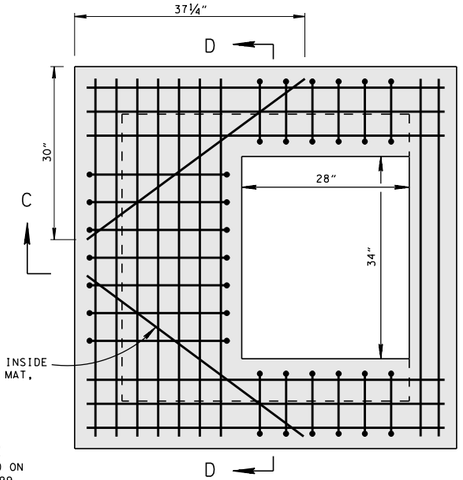
PLAN VIEW



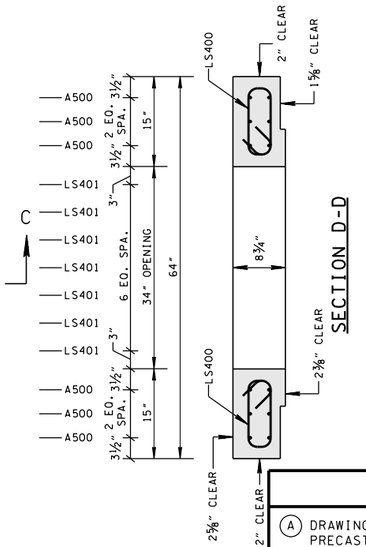
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

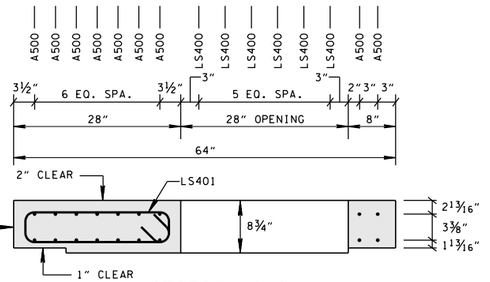
SECTION E-E



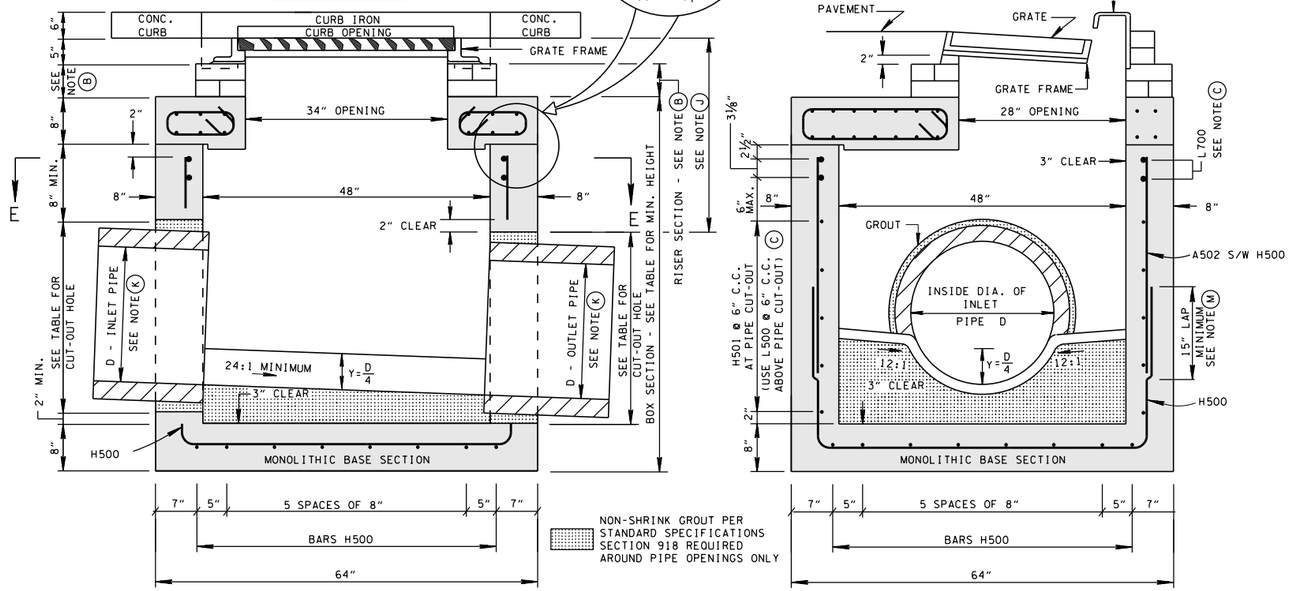
PLAN VIEW



SECTION D-D



SECTION C-C



SECTION A-A

SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
30	3½	39	65	4.79
36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-98: CHANGED REINFORCING STEEL IN SECTION E-E VIEW.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

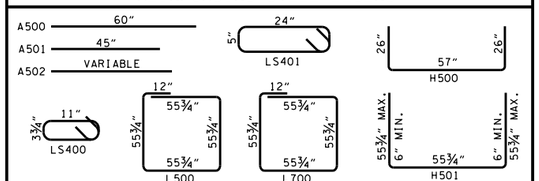
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, TYPE 12, 0'-4' DEPTH THROUGH 611-12.07 CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

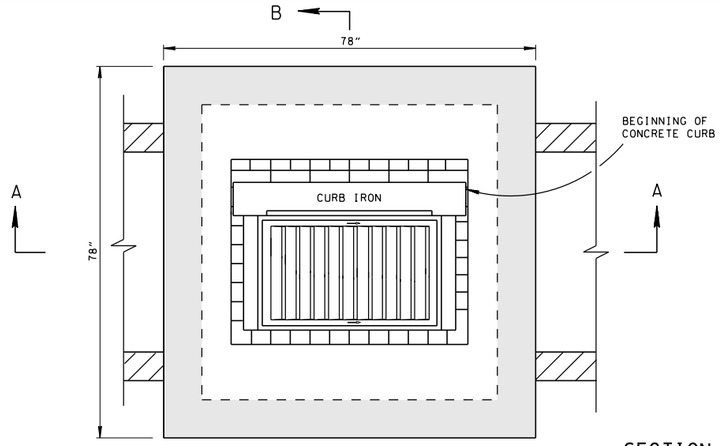
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

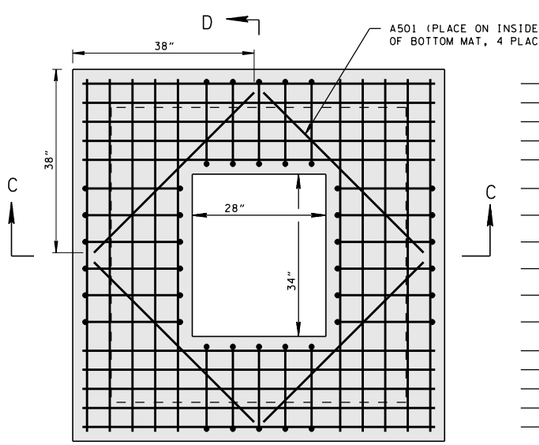
STANDARD 4' X 4' SQUARE CONCRETE NO.12 CATCH BASIN

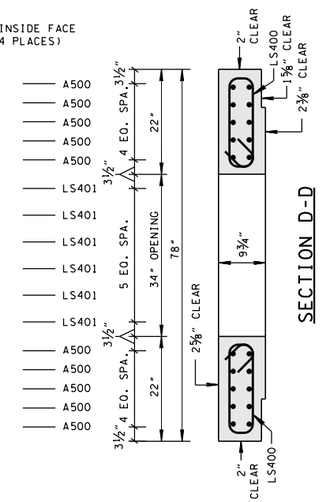
NOT TO SCALE

9-5-97

D-CB-12SB

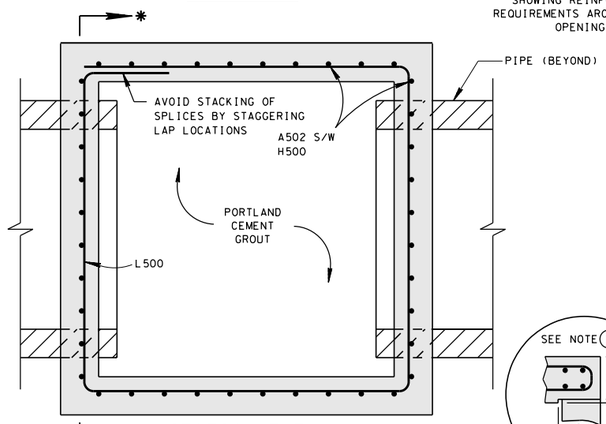


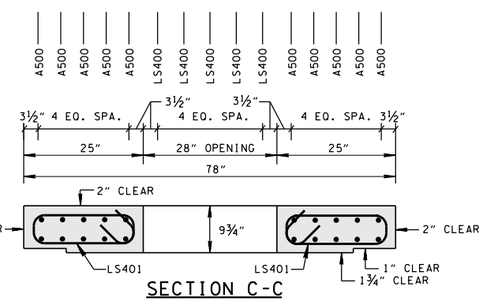


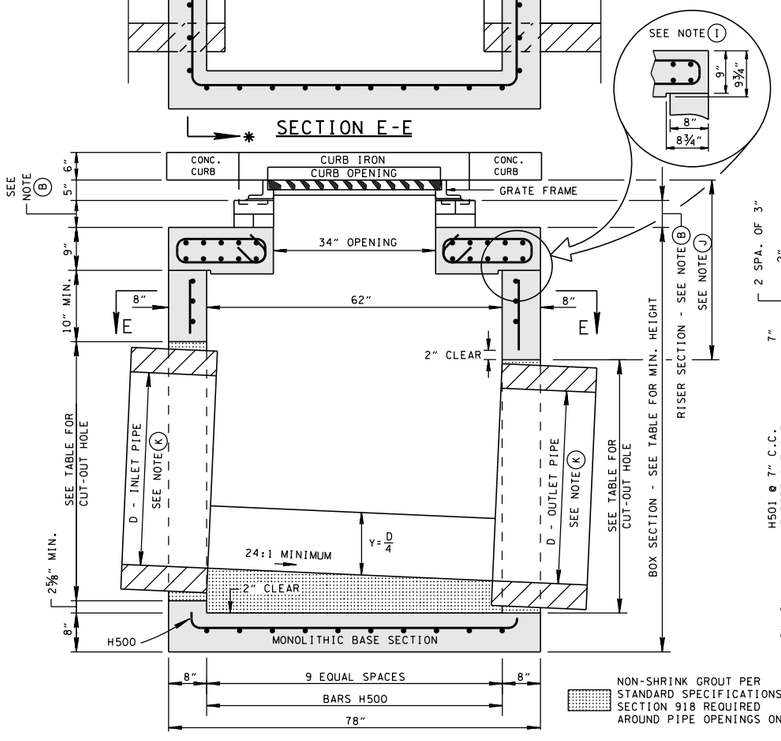


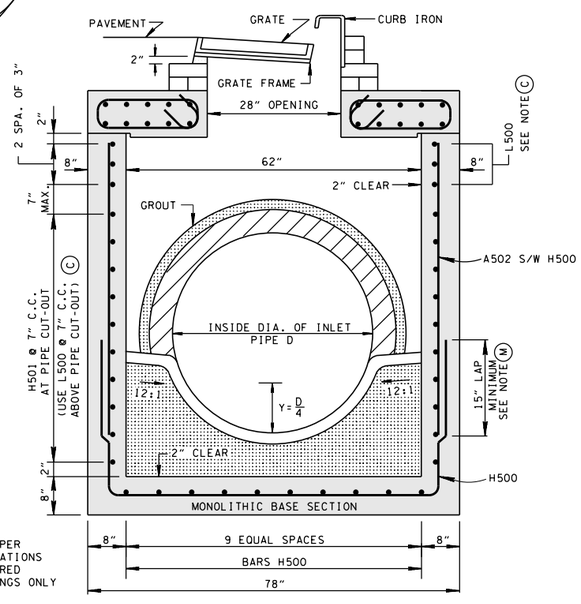
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCMENT REQUIREMENTS AROUND PIPE OPENINGS









CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	4.04
24	3	32	62	4.58
30	3½	39	69	5.13
36	4	46	76	5.67
42	4½	53	83	6.21
48	5	60	90	6.75

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

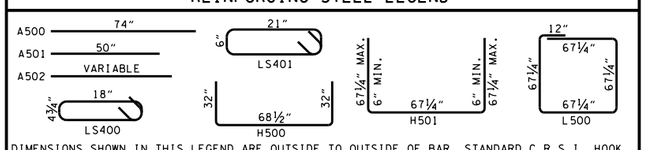
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH THROUGH 611-12.07 CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

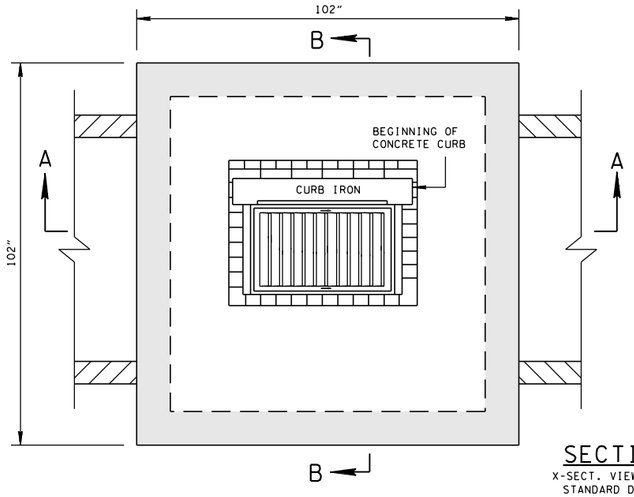
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.12 CATCH BASIN

NOT TO SCALE

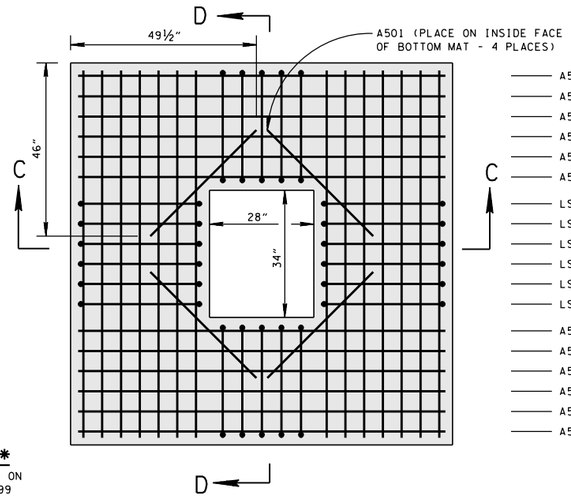
9-5-97

D-CB-12SC

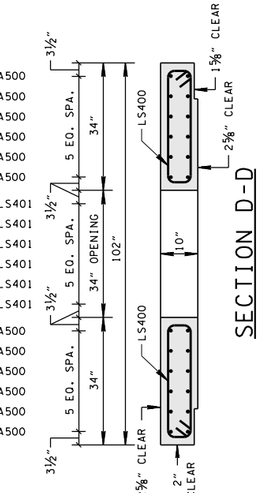


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION D-D

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55½	4.08
24	3	32	62½	4.63
30	3½	39	69½	5.17
36	4	46	76½	5.71
42	4½	53	83½	6.25
48	5	60	90½	6.79
54	5½	67	97½	7.33
60	6	74	104½	7.88
66	6½	81	111½	8.42

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

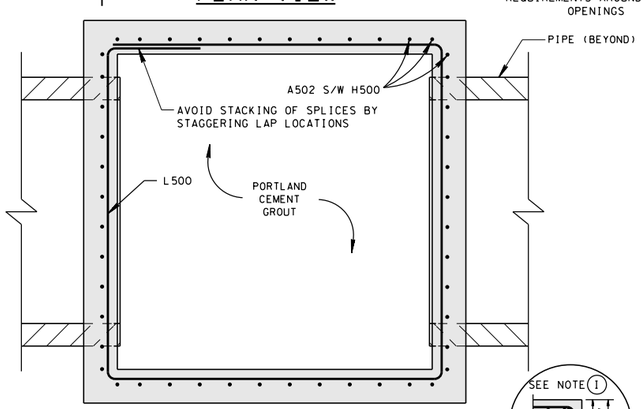
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

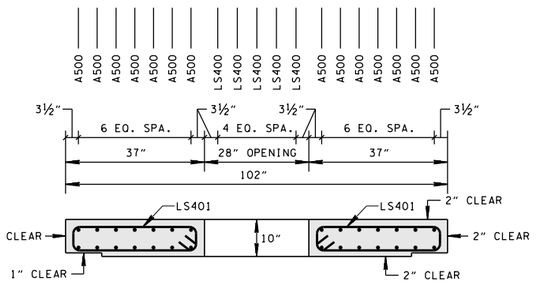
(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH THROUGH 611-12.07 CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

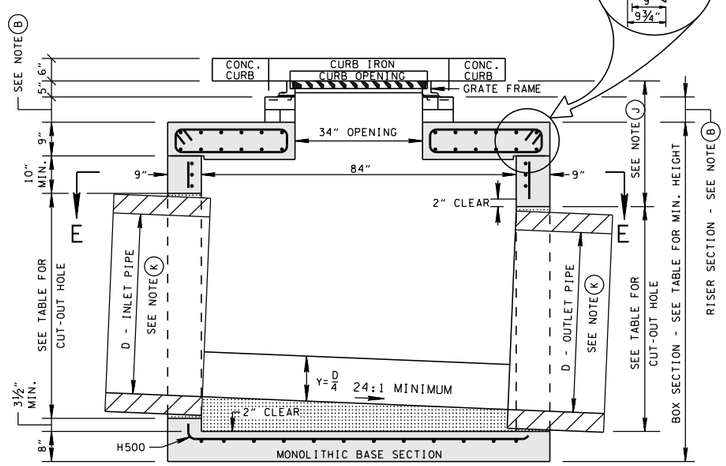
PLAN VIEW



SECTION E-E

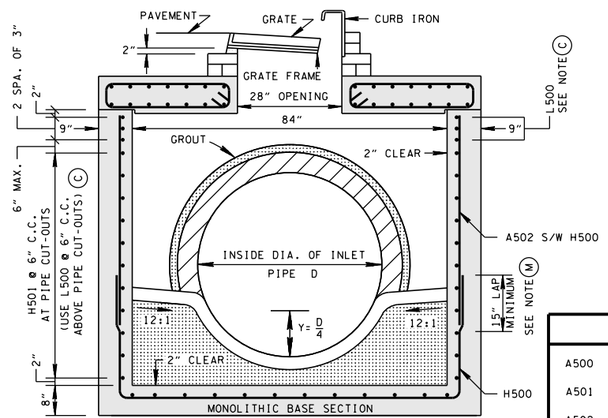


SECTION C-C



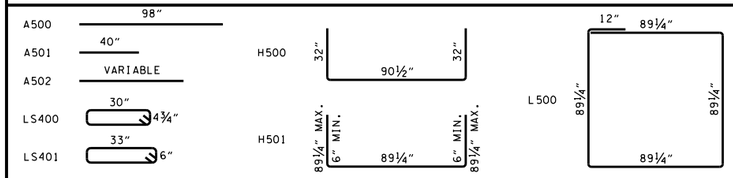
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

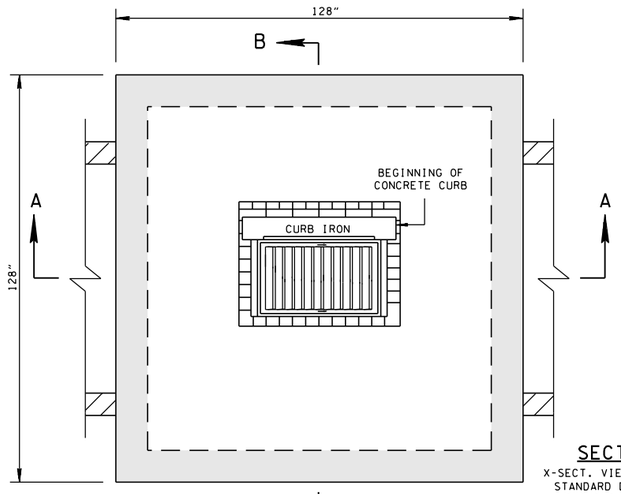
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 7' X 7' SQUARE CONCRETE NO. 12 CATCH BASIN

NOT TO SCALE

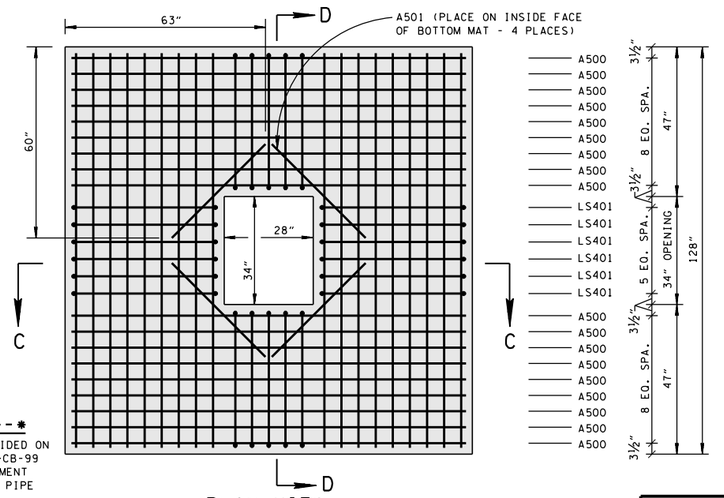
5-27-98

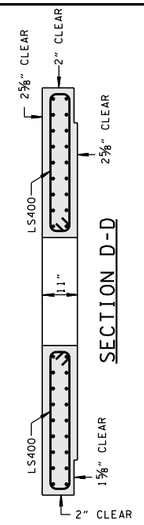
D-CB-12SD



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS





CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.

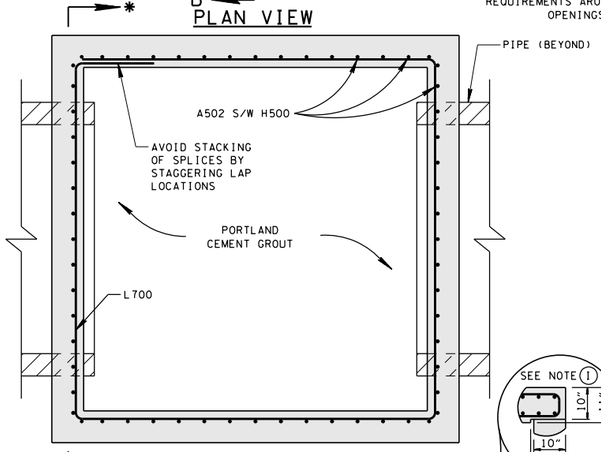
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

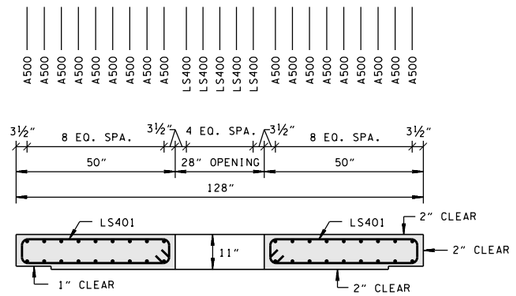
CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	59½	4.25
24	3	32	66½	4.79
30	3½	39	73½	5.33
36	4	46	80½	5.88
42	4½	53	87½	6.42
48	5	60	94½	6.96
54	5½	67	101½	7.50
60	6	74	108½	8.04
66	6½	81	115½	8.58
72	7	88	122½	9.13
78	7½	95	129½	9.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.





GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 12SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 25 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

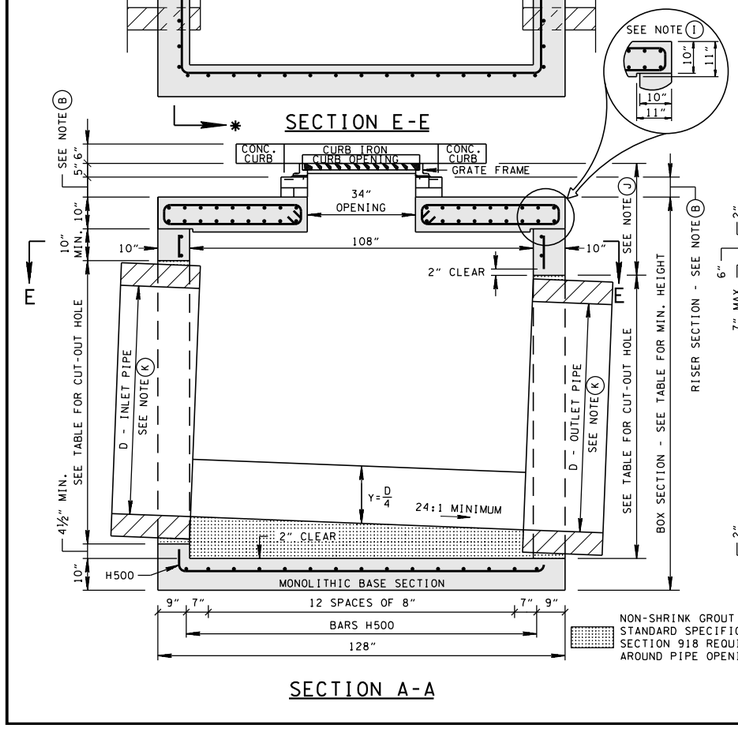
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

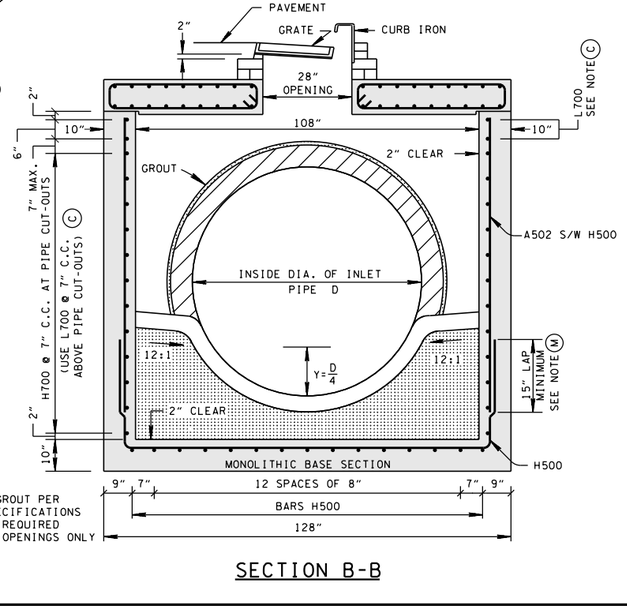
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

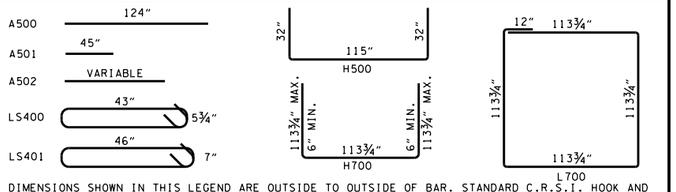
(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-12.02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH THROUGH 611-12.07 CATCH BASINS, TYPE 12, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.





REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

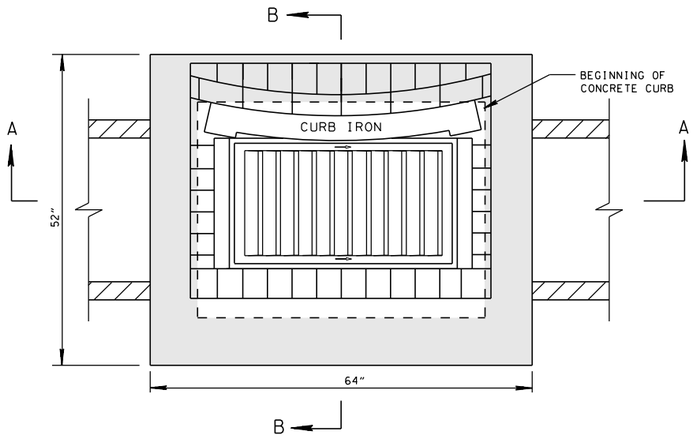
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.
- REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

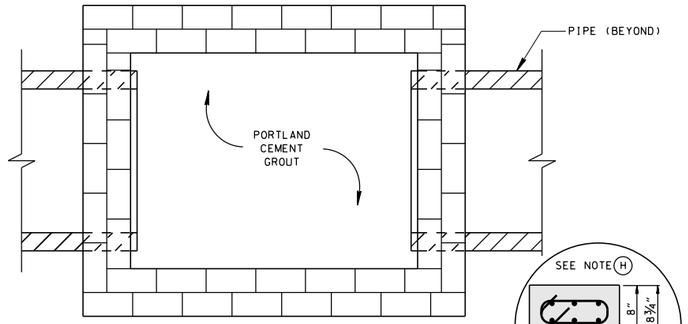
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 12 CATCH BASIN

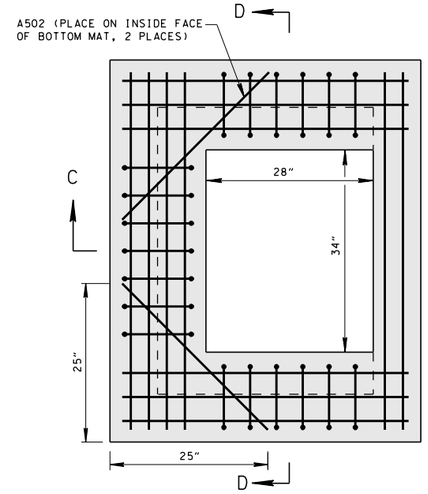
1-19-99 | D-CB-12SE



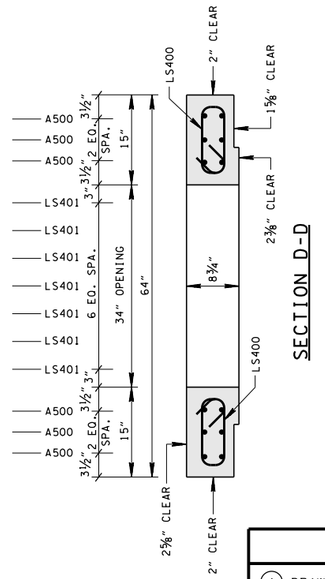
PLAN VIEW



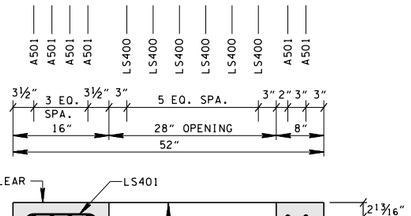
SECTION E-E

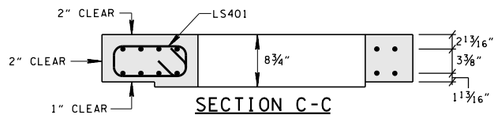


PLAN VIEW

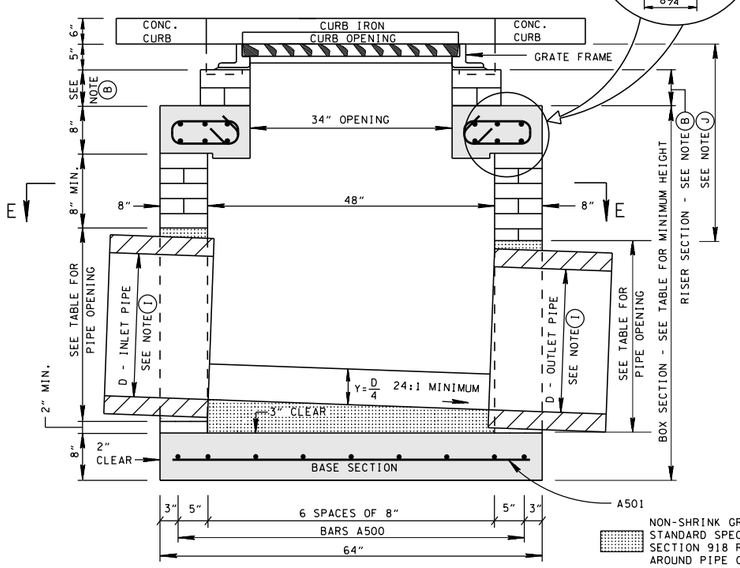


SECTION D-D

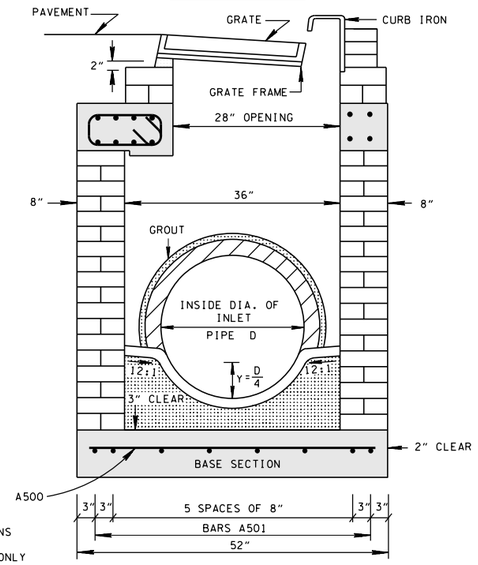




SECTION C-C



SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 8.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	51	3.71
24	3	32	58	4.25
(3) 30	3½	39	65	4.79
(3) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- REV. 12-18-96: MODIFIED DRAWING NO. D-CB-12B BY CHANGING CURB IRON.
- REV. 12-31-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (G) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- REV.4-15-97: CHANGED LABEL OF BASE SECTION.
- REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 3-20-00: ADDED SPECIAL NOTE RESTRICTING USE OF NO. 13 CATCH BASINS TO RADIUS LESS THAN 25 FEET.
- REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (I)
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 13 BRICK CATCH BASINS THAT ARE EIGHT FEET AND LESS IN DEPTH. SEE STANDARD DRAWINGS D-CB-13P AND D-CB-13S FOR DETAILS OF NO. 13 CONCRETE CATCH BASINS THAT ARE MORE THAN EIGHT FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH AND 611-13.02 CATCH BASINS, TYPE 13, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND

A500	48"	
A501	60"	
A502	33"	
	3¾" 11"	LS400
	5" 12"	LS401

DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

SPECIAL NOTE

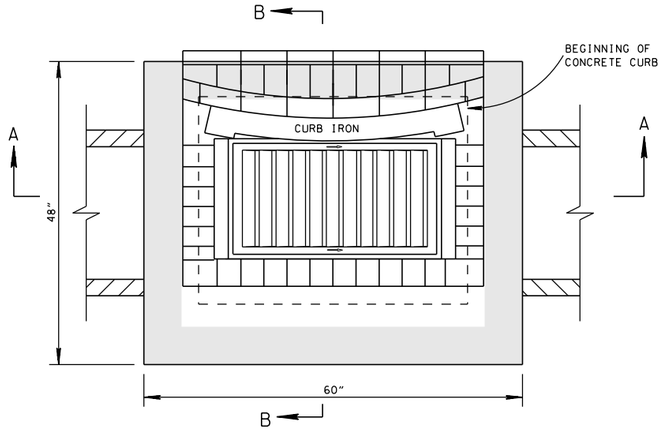
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

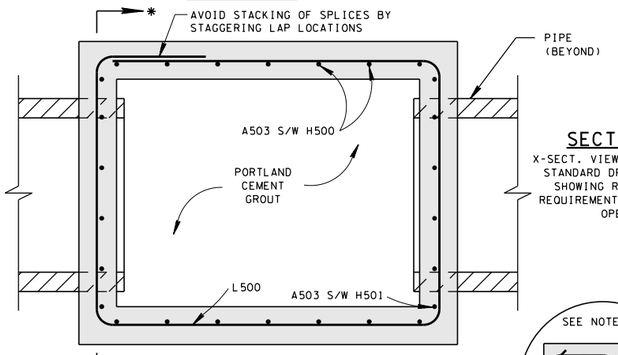
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR BRICK NO. 13 CATCH BASIN

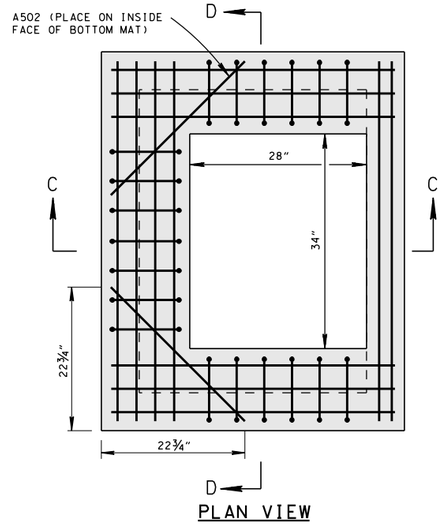
NOT TO SCALE | 12-18-96 | D-CB-13B



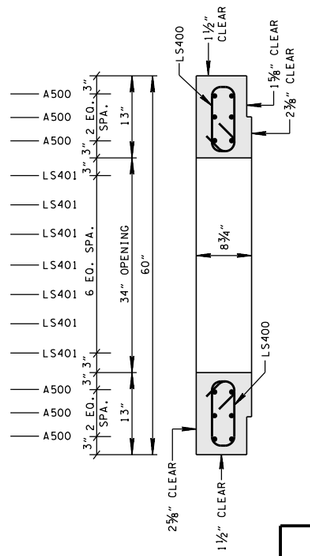
PLAN VIEW



SECTION E-E



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25
(4) 30	3½	39	63	4.79
(4) 36	4	46	70	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

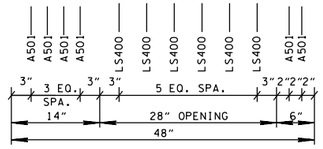
(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-96: MODIFIED DRAWING NO. D-CB-12P BY CHANGING CURB IRON.
- ☐ REV. 12-31-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (C) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 3-20-00: ADDED SPECIAL NOTE RESTRICTING USE OF NO. 13 CATCH BASINS TO RADIUS LESS THAN 25 FEET.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

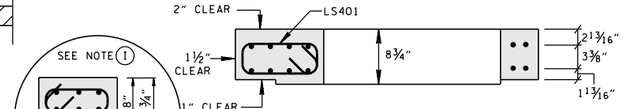
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

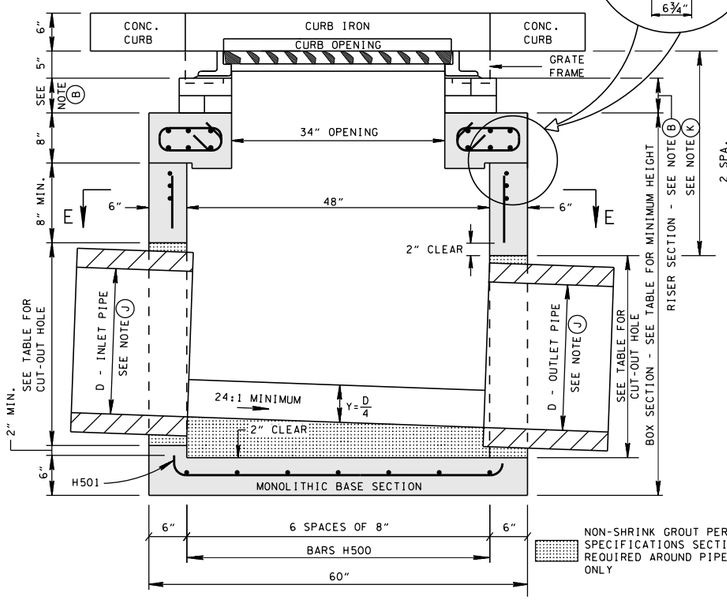


SPECIAL NOTE

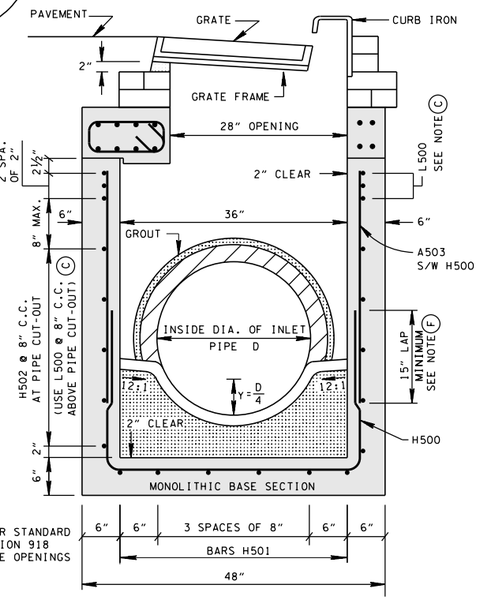
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.



SECTION C-C



SECTION A-A



SECTION B-B

6" 6 SPACES OF 8" 6" — BARS H500 — 60"

6" 6" 3 SPACES OF 8" 6" 6" — BARS H501 — 48"

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 13 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-13S FOR DETAILS OF CAST-IN-PLACE NO. 13 CONCRETE CATCH BASINS AND PRECAST NO. 13 CONCRETE CATCH BASINS THAT ARE GREATER TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

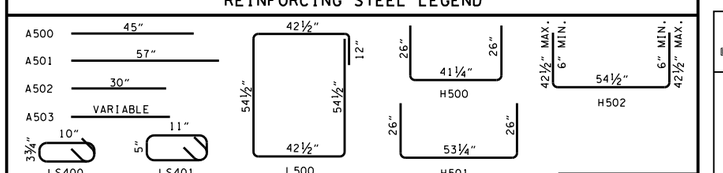
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH THROUGH 611-13.03, CATCH BASINS, TYPE 13, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

REINFORCING STEEL LEGEND



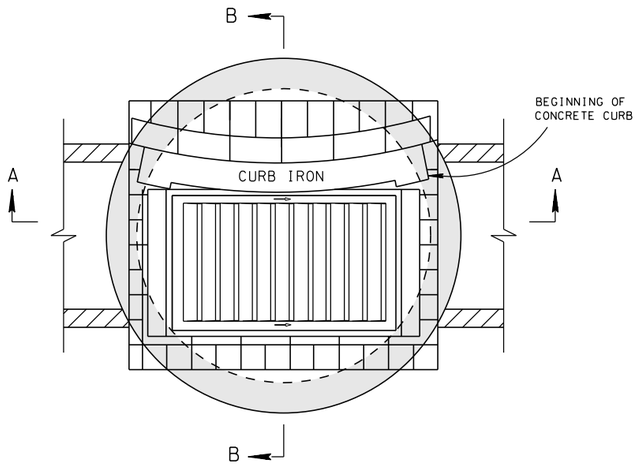
DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

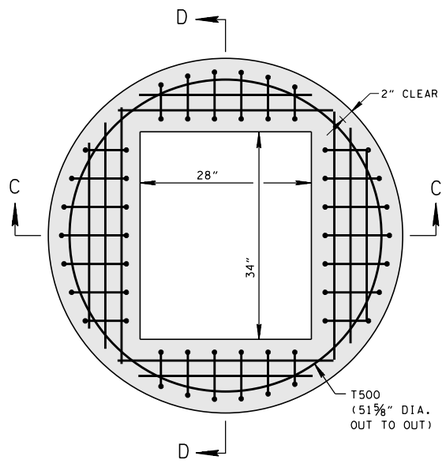
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RECTANGULAR CONCRETE NO. 13 CATCH BASIN

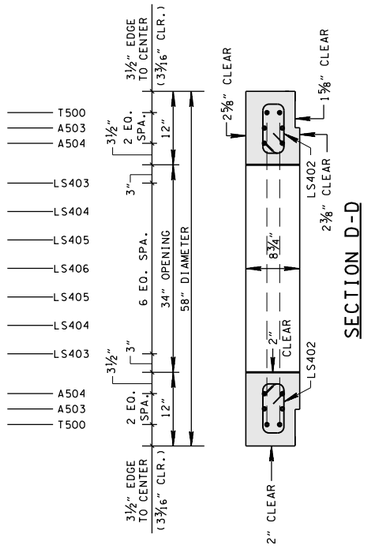
12-18-96 D-CB-13P



PLAN VIEW



LID REINFORCING



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25

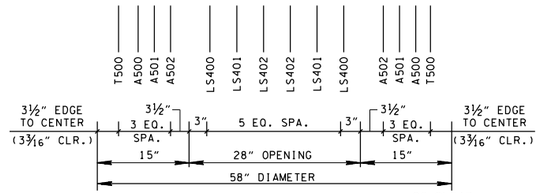
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

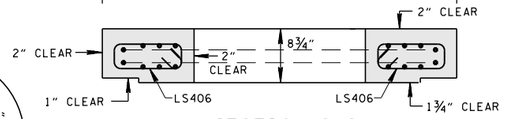
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

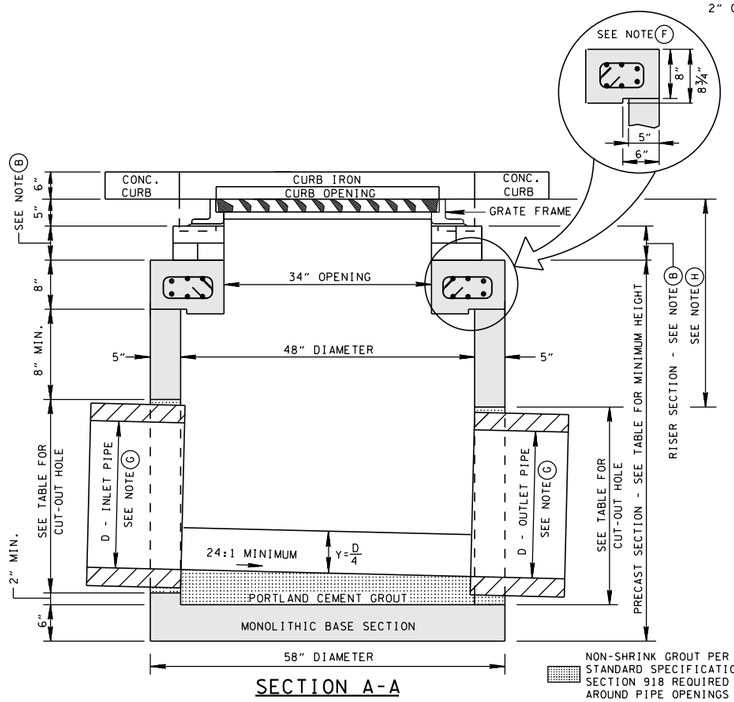
- ☐ REV. 3-20-00: ADDED SPECIAL NOTE RESTRICTING USE OF NO. 13 CATCH BASINS TO RADIUS LESS THAN 25 FEET.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

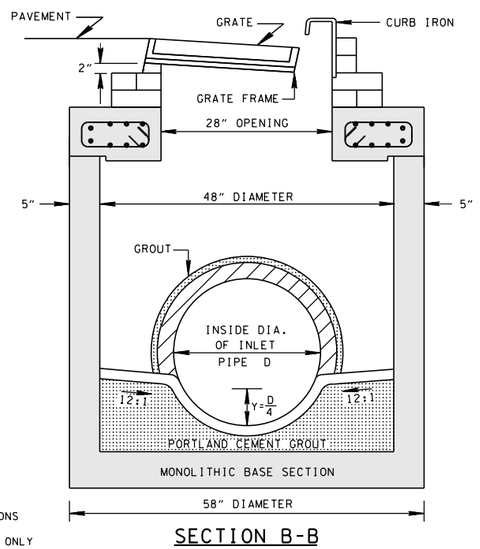




SECTION C-C



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-13RB FOR DETAILS REGARDING 60" AND LARGER CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH THROUGH 611-13.05 CATCH BASINS, TYPE 13, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

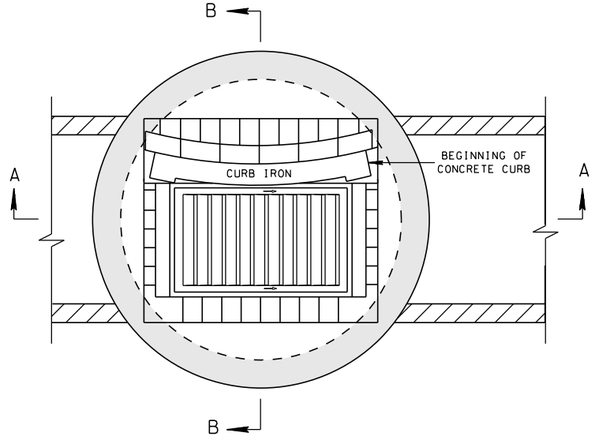
SPECIAL NOTE
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

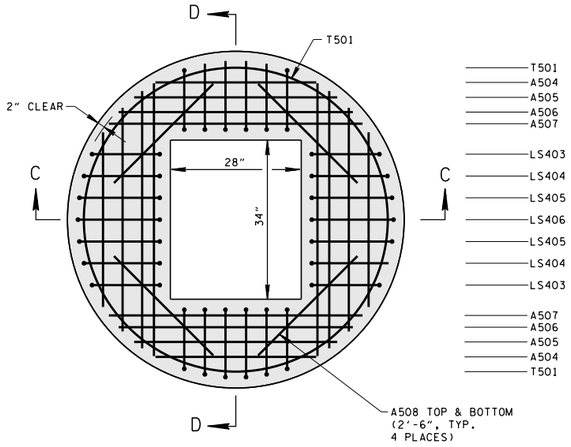
STANDARD PRECAST 48" CIRCULAR NO. 13 CATCH BASIN

(FOR USE WITH 6" NONMOUNTABLE CURB)

NOT TO SCALE | 1-19-00 | D-CB-13RA



PLAN VIEW

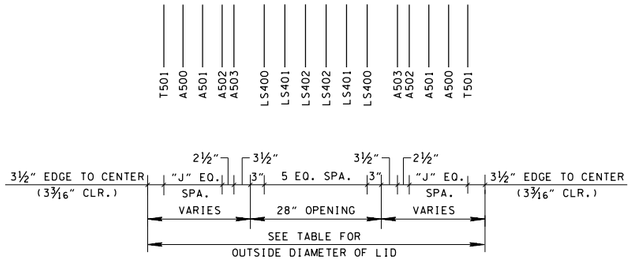


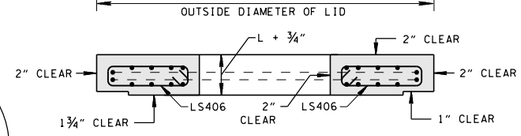
LID REINFORCING

VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

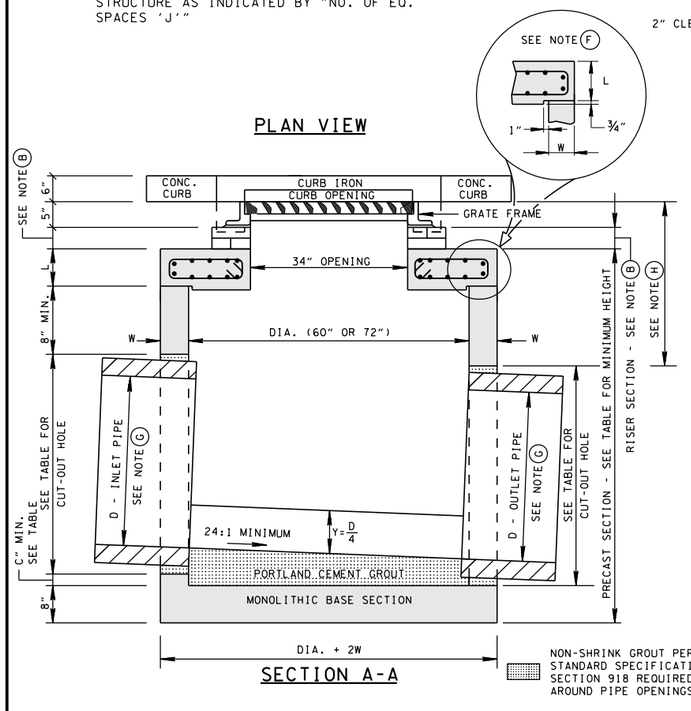
ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE AS INDICATED BY "NO. OF EQ. SPACES 'J'"





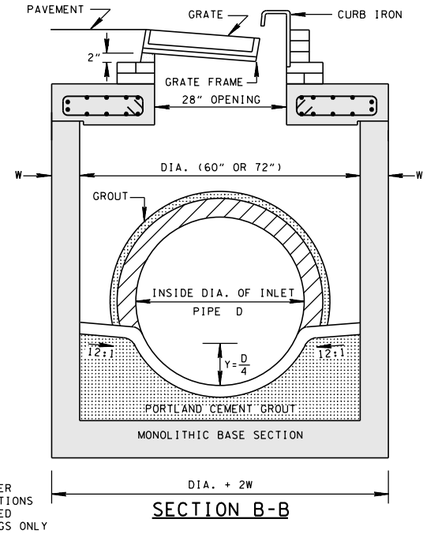
SECTION C-C

PLAN VIEW

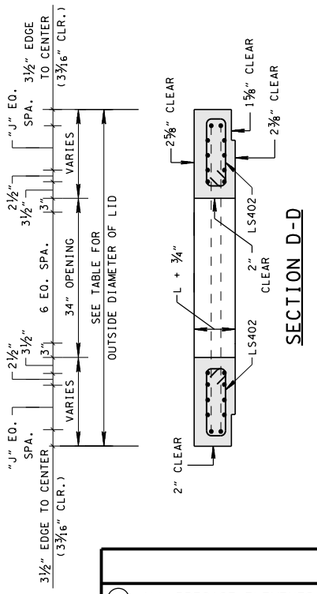


SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS					FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)			
			60"	72"	60"	72"
18	2½	25	51½	53	3.75	3.88
24	3	32	58½	60	4.29	4.42
30	3½	39	65½	67	4.83	4.96
36	4	46	72½	74	5.38	5.50
42	4½	53	79½	81	5.92	6.04
48	5	60	86½	88	6.46	6.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 4-15-00: MOVED 84" AND 96" DIAMETER CATCH BASINS TO NEW STANDARD DRAWING D-CB-13RC. RENAMED SHEET.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES (FOR 60 INCH INSIDE DIAMETER CATCH BASIN) OR 22 INCHES (FOR 72 INCH INSIDE DIAMETER CATCH BASIN) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN) OR 22 INCH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-13RA FOR DETAILS REGARDING 48" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) SEE STANDARD DRAWING D-CB-13RC FOR DETAILS REGARDING 84" THRU 120" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH THROUGH 611-13.07, CATCH BASINS, TYPE 13, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-13.08, CATCH BASINS, TYPE 13, ___ '- ___ ' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

SPECIAL NOTE
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.

CATCH BASIN DIMENSIONS						
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)
60	6	8	72	36	24	2.5
72	7	9	86	48	30	3.0

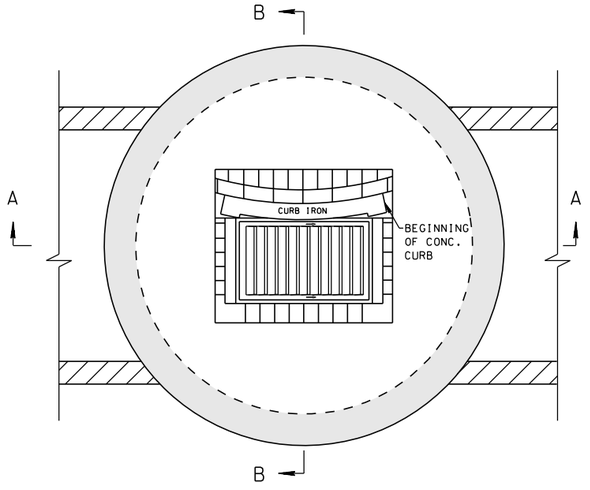
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 60" AND 72" CIRCULAR NO.13 CATCH BASIN
(FOR USE WITH 6" NONMOUNTABLE CURB)

4-15-00 | D-CB-13RB

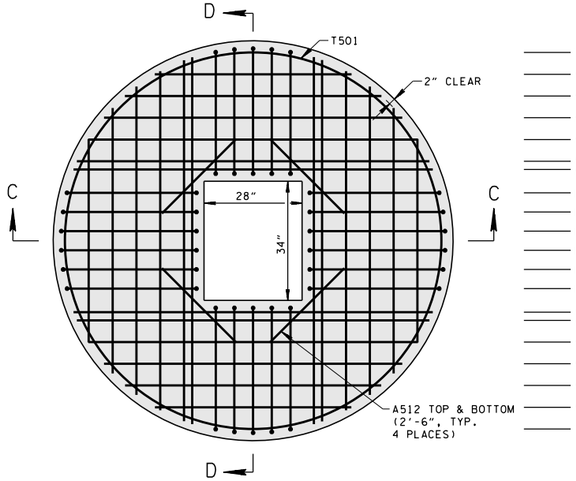


PLAN VIEW

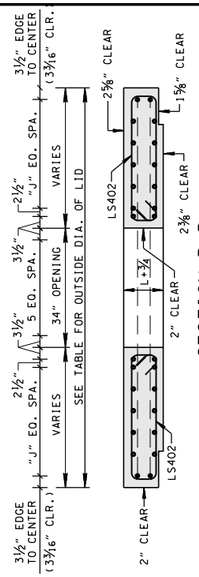
VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
84	100	5
96	114	6
108	128	7
120	142	8

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

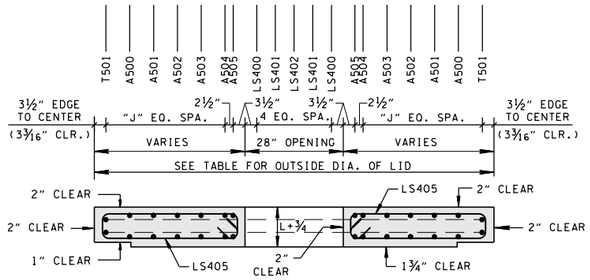
ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURES AS INDICATED BY "NO. OF EQ. SPACES 'J'"



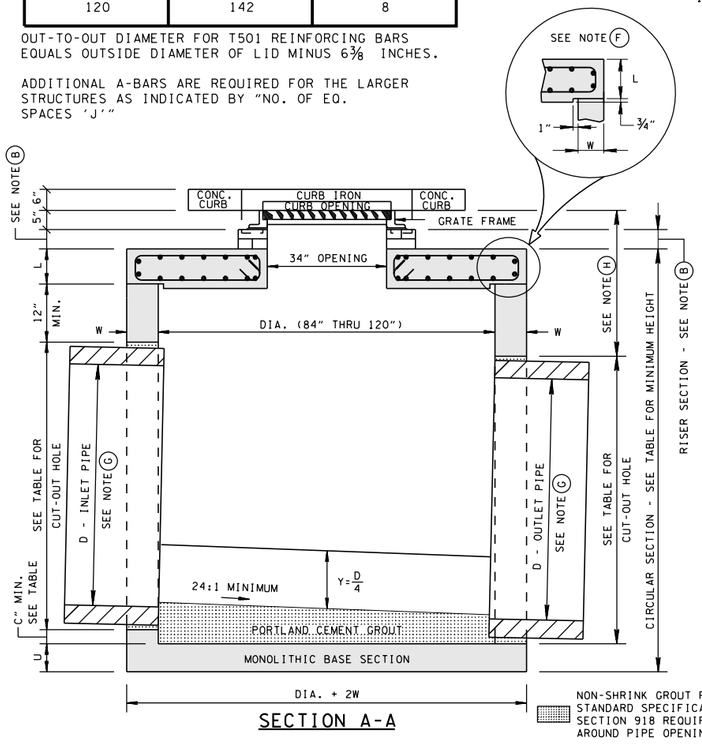
LID REINFORCING



SECTION D-D

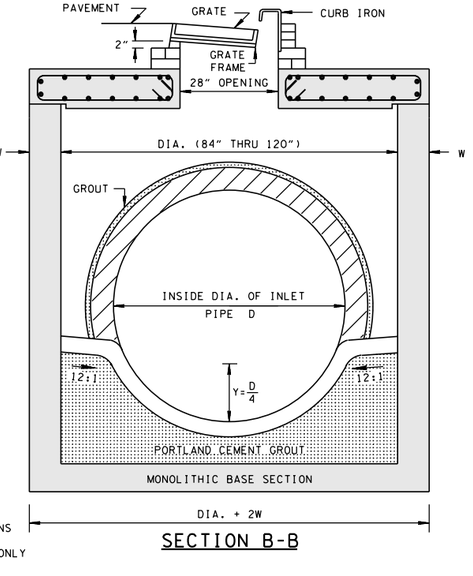


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

SPECIAL NOTE
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

□ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN DIMENSIONS							FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)							
			84"	96"	108"	120"	84"	96"	108"	120"
18	2½	25	57½	59	63½	64	4.25	4.38	4.42	4.46
24	3	32	64½	66	70½	71	4.79	4.92	4.96	5.00
30	3½	39	71½	73	77½	78	5.33	5.46	5.50	5.54
36	4	46	78½	80	84½	85	5.88	6.00	6.04	6.08
42	4½	53	85½	87	91½	92	6.42	6.54	6.58	6.63
48	5	60	92½	94	98½	99	6.96	7.08	7.13	7.17
54	5½	67	99½	101	105½	106	7.50	7.63	7.67	7.71
60	6	74	106½	108	112½	113	8.04	8.17	8.21	8.25
66	6½	81	113½	115	119½	120	8.58	8.71	8.75	8.79
72	7	88	120½	122	126½	127	9.13	9.25	9.29	9.33
78	7½	95	127½	129	133½	134	9.67	9.79	9.83	9.88

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 INCHES (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 96 INCH, 108 INCH & 120 INCH INSIDE DIAMETER CATCH BASINS) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. INVERT ELEVATIONS ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASINS) OR A MINIMUM 27 INCH DEPTH (FOR 96 INCH, 108 INCH & 120 INCH INSIDE DIAMETER CATCH BASINS) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-13RA FOR DETAILS REGARDING 48" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) SEE STANDARD DRAWING D-CB-13RB FOR DETAILS REGARDING 60" AND 72" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.02 CATCH BASINS, TYPE 13, > 4'-8' DEPTH THROUGH 611-13.07, CATCH BASINS, TYPE 13, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-13.08, CATCH BASINS, TYPE 13, ___'- ___' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	BASE THICKNESS U (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)
84	8	9	8	100	60	36	3.5
96	9	10	8	114	66	42	4.0
108	10	10	12	128	72	48	4.5
120	11	10	12	142	78	54	5.0

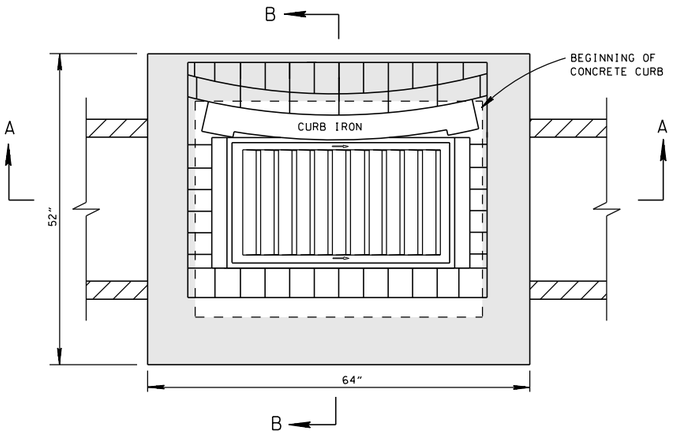
□ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

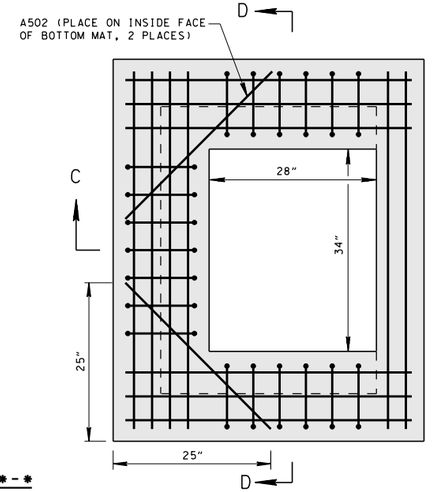
STANDARD PRECAST 84" THRU 120" CIRCULAR NO.13 CATCH BASIN
(FOR USE WITH 6" NONMOUNTABLE CURB)

NOT TO SCALE

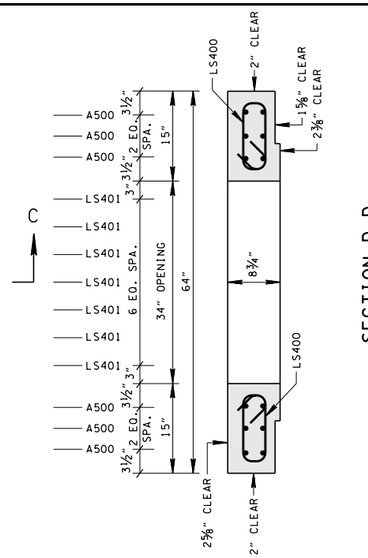
4-15-00 D-CB-13RC



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

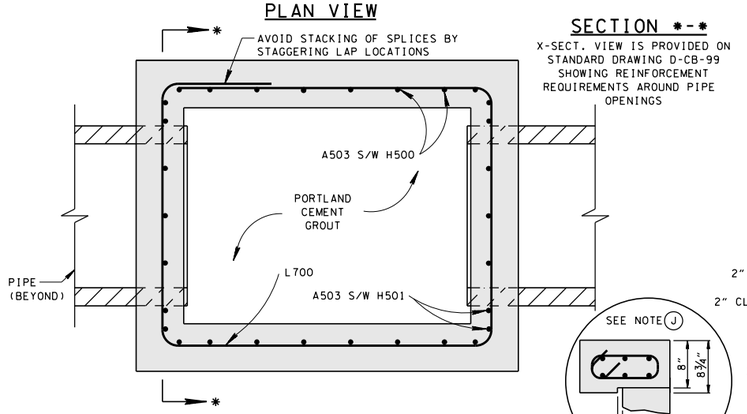
(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-96: MODIFIED DRAWING NO. D-CB-12S BY CHANGING CURB IRON.
- ☐ REV. 12-31-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 3-20-00: ADDED SPECIAL NOTE RESTRICTING USE OF NO. 13 CATCH BASINS TO RADIUS LESS THAN 25 FEET.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

SPECIAL NOTE

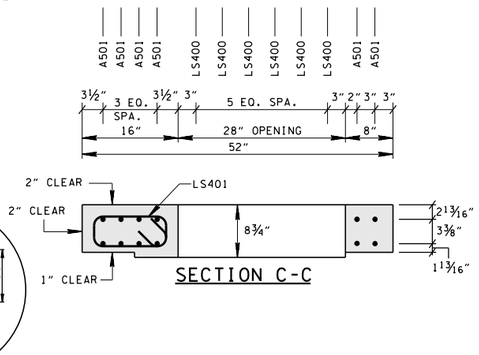
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.



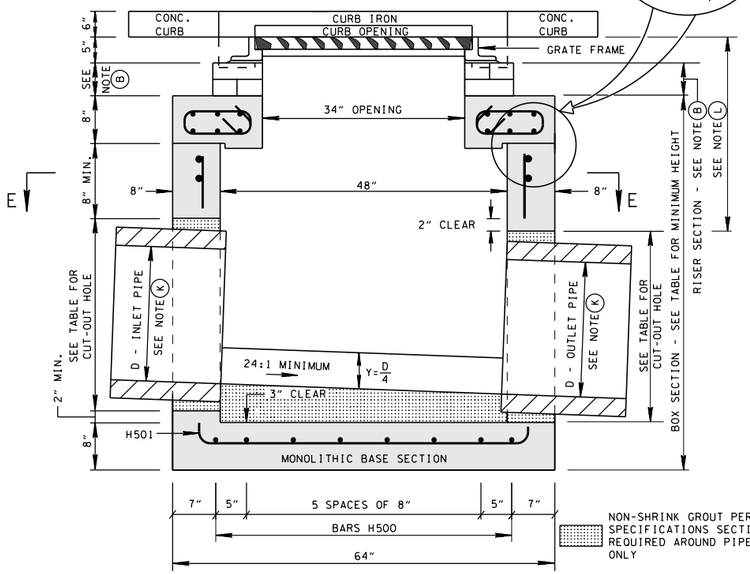
SECTION E-E

SECTION ✱-✱

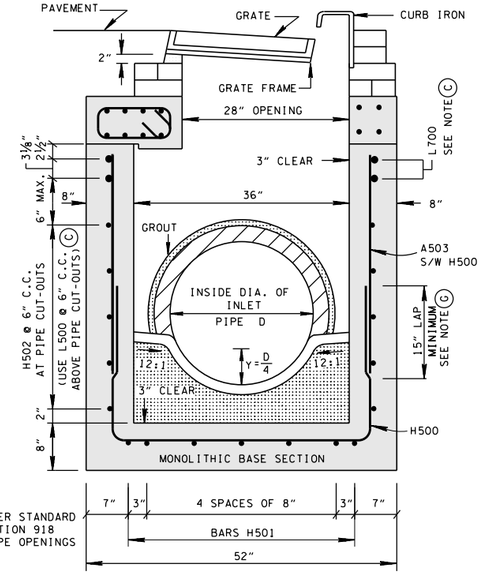
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION C-C



SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 13 CONCRETE CATCH BASINS AND ALL PRECAST NO. 13 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-13P FOR DETAILS OF PRECAST NO. 13 CONCRETE CATCH BASINS TWELVE FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

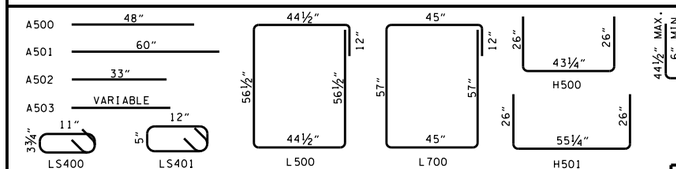
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH THROUGH 611-13.05 CATCH BASINS, TYPE 13, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

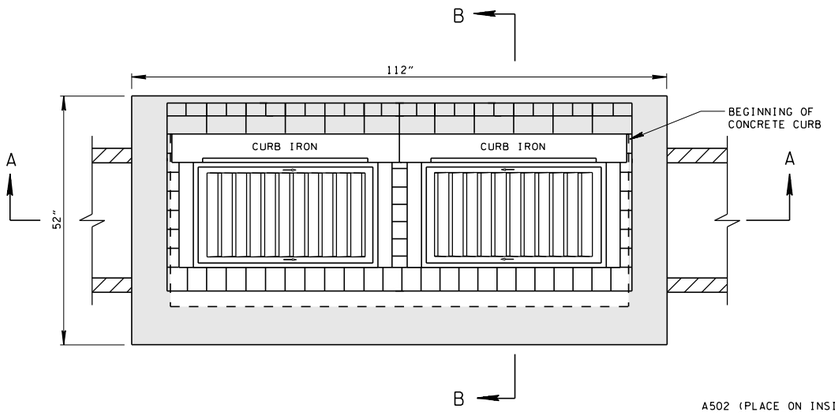
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

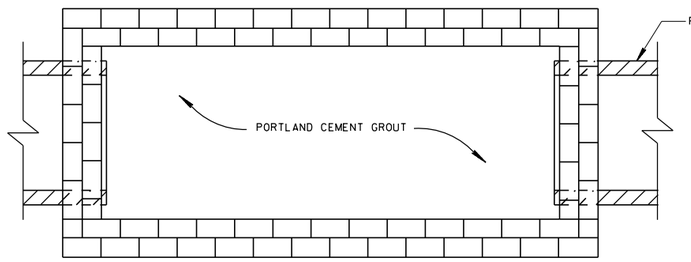
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.13 CATCH BASIN

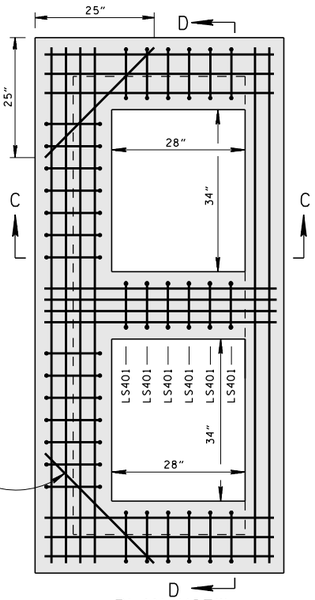
12-18-96 D-CB-13S



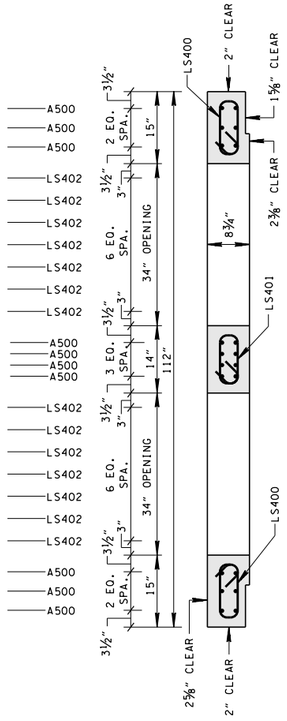
PLAN VIEW



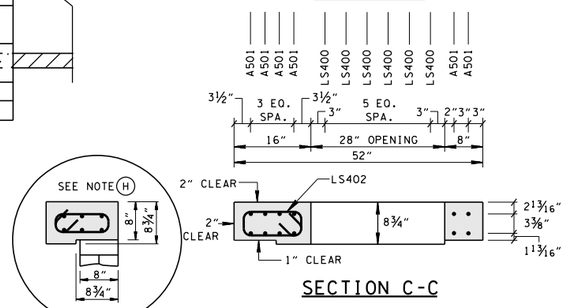
SECTION E-E



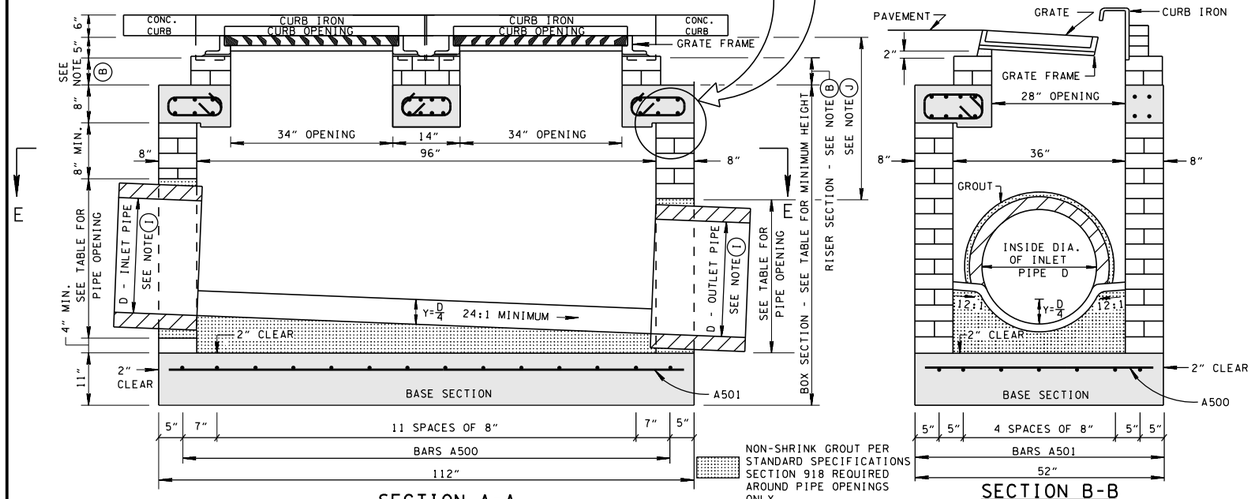
PLAN VIEW



SECTION D-D



SECTION C-C



SECTION A-A

SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 6.00′.

CATCH BASIN DIMENSIONS

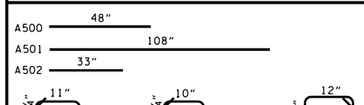
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	56	3.88
24	3	32	63	4.42
(3) 30	3½	39	70	4.96

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 14 BRICK CATCH BASINS THAT ARE SIX FEET AND LESS IN DEPTH. SEE STANDARD DRAWINGS D-CB-14P AND D-CB-14S FOR DETAILS OF NO. 14 CONCRETE CATCH BASINS THAT ARE MORE THAN SIX FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.01 CATCH BASINS, TYPE 14, 0′-4′ DEPTH AND 611-14.02 CATCH BASINS, TYPE 14, > 4′-8′ DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

- ☐ REV. 1-19-96: MODIFIED DRAWING NO. D-CB-14S BY CHANGING MATERIAL IN SIDE WALLS FROM CONCRETE TO BRICK.
- ☐ REV. 12-18-96: REMOVED 0.5″ PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (G) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED LABEL OF BASE SECTION.
- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

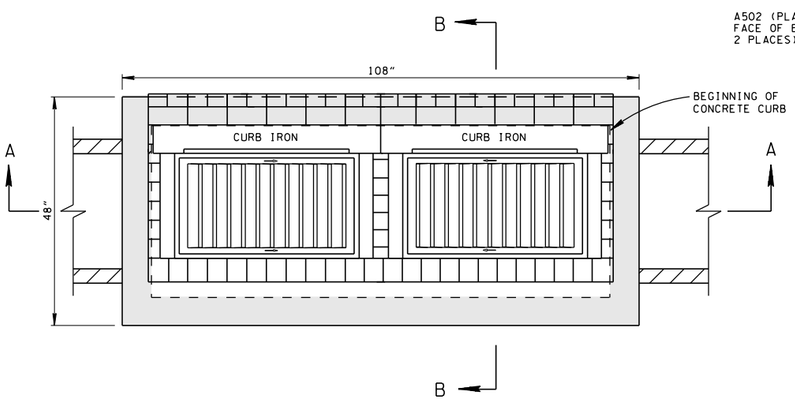
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

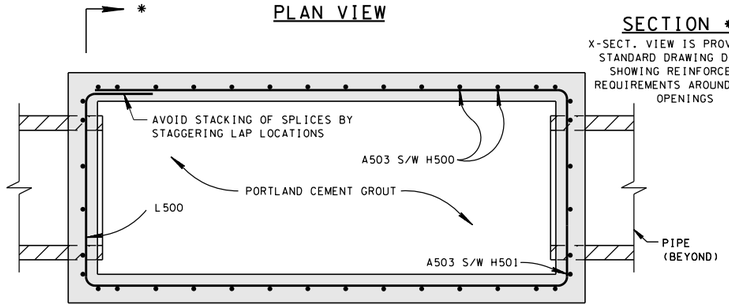
STANDARD RECTANGULAR BRICK NO. 14 CATCH BASIN

NOT TO SCALE

1-19-96 | D-CB-14B



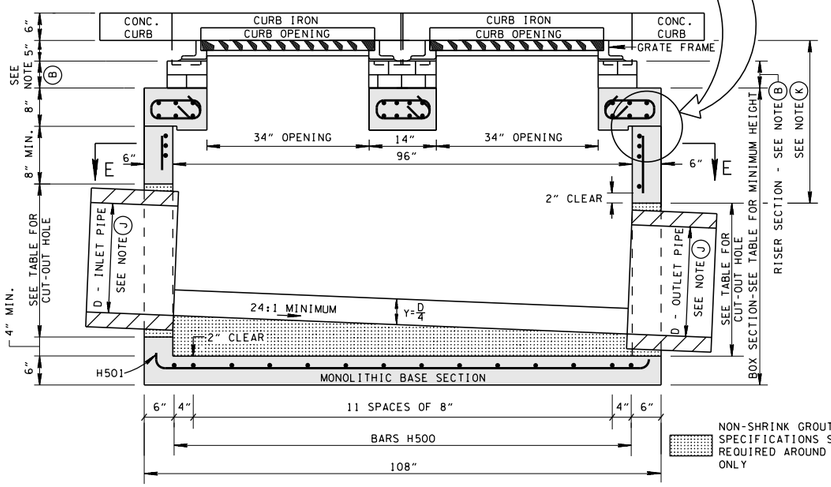
PLAN VIEW



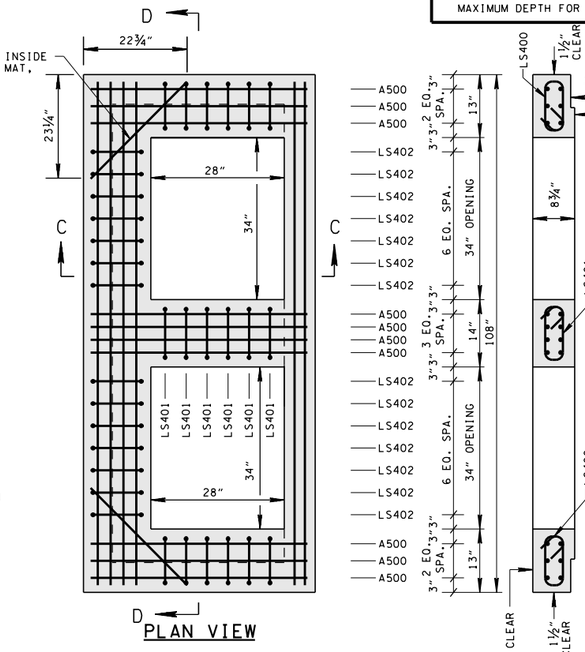
SECTION E-E

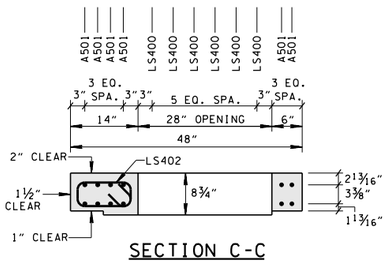
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

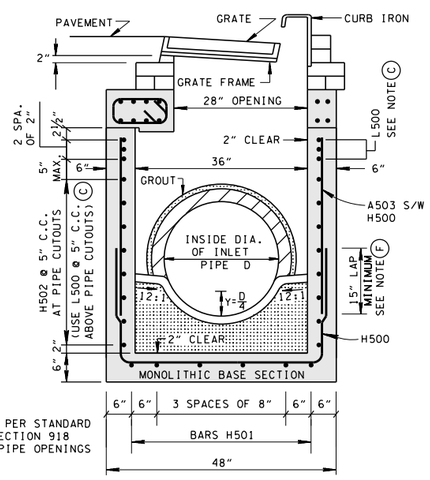


SECTION A-A





SECTION C-C



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 10.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.88
24	3	32	58	4.42
(4) 30	3½	39	65	4.96
(4) 36	4	46	72	5.50
(4) 42	4½	53	79	6.04
(4) 48	5	60	86	6.58
(4) 54	5½	67	93	7.13
(4) 60	6	74	100	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- REV. 12-18-95: MODIFIED DRAWING NO. D-CB-14S BY CHANGING WALL AND FLOOR THICKNESSES FROM EIGHT TO SIX INCHES FOR PRECAST CATCH BASIN BETWEEN MINIMUM DEPTH AND TEN FEET.
- REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (C) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 14 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TEN FEET. SEE STANDARD DRAWING D-CB-14S FOR DETAILS OF CAST-IN-PLACE NO. 14 CONCRETE CATCH BASINS AND PRECAST NO. 14 CONCRETE CATCH BASINS THAT ARE GREATER TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

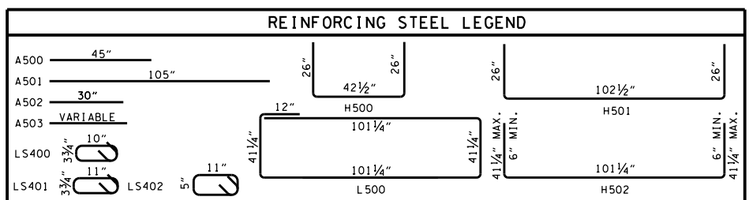
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.01 CATCH BASINS, TYPE 14, 0'-4' DEPTH THROUGH 611-14.03, CATCH BASINS, TYPE 14, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

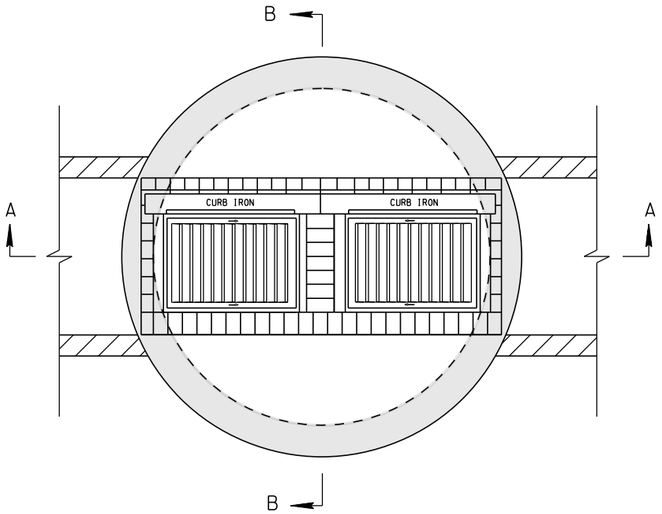
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

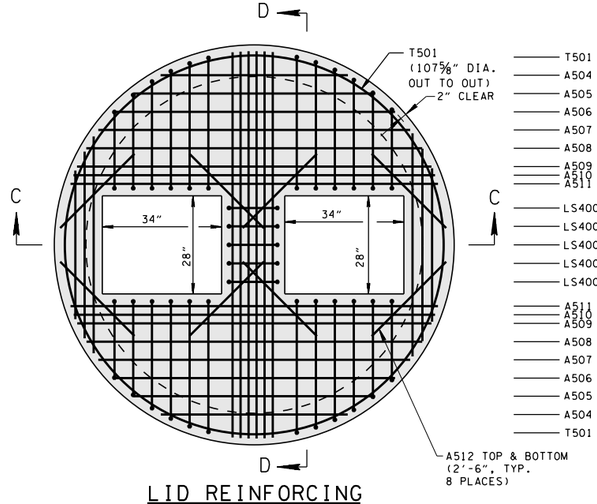
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RECTANGULAR CONCRETE NO.14 CATCH BASIN

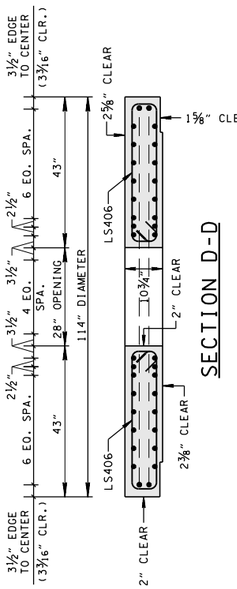
12-18-95 D-CB-14P



PLAN VIEW



LID REINFORCING



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	54	3.71
24	3	32	61	4.25

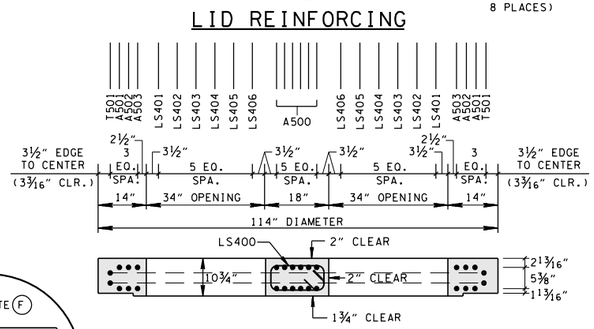
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION C-C

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

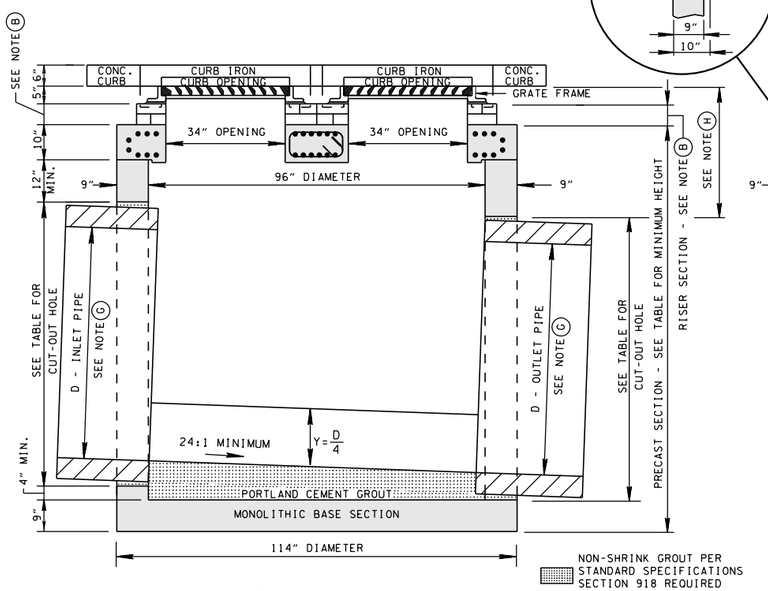
(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

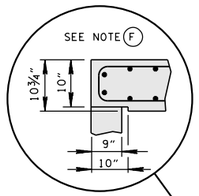
(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

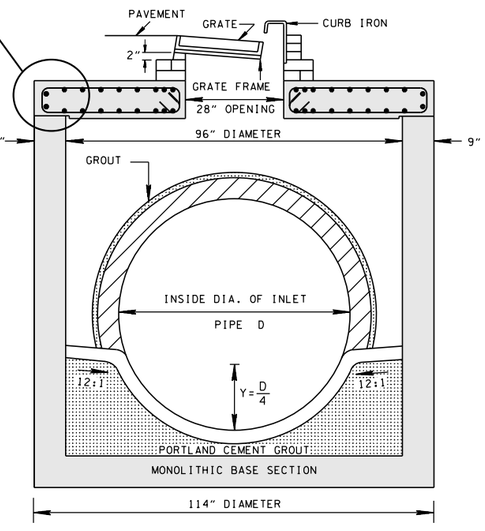
(I) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.01 CATCH BASINS, TYPE 14, 0'-4' DEPTH THROUGH 611-14.07, CATCH BASINS, TYPE 14, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-14.08, CATCH BASINS, TYPE 14,_____'-_____' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.



SECTION A-A





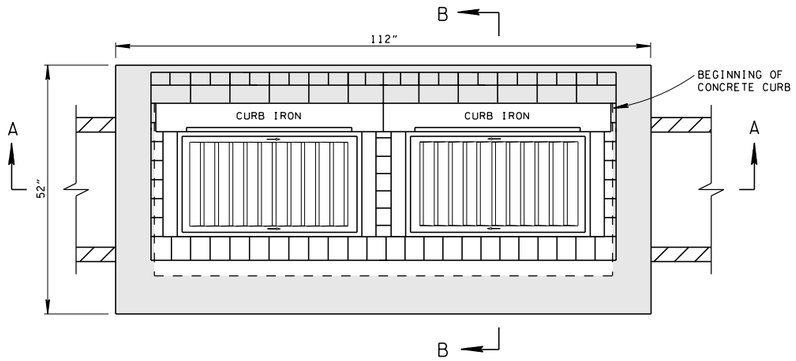
SECTION B-B

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN

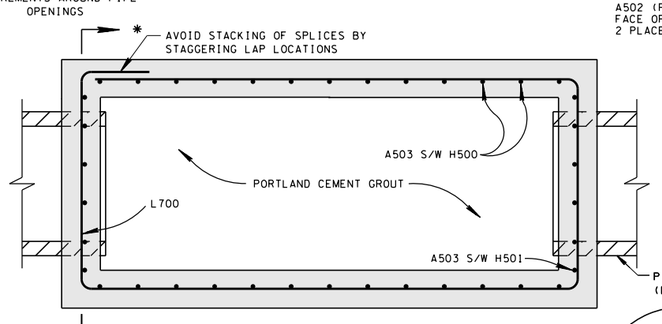
NOT TO SCALE | 3-20-00 | D-CB-14RB



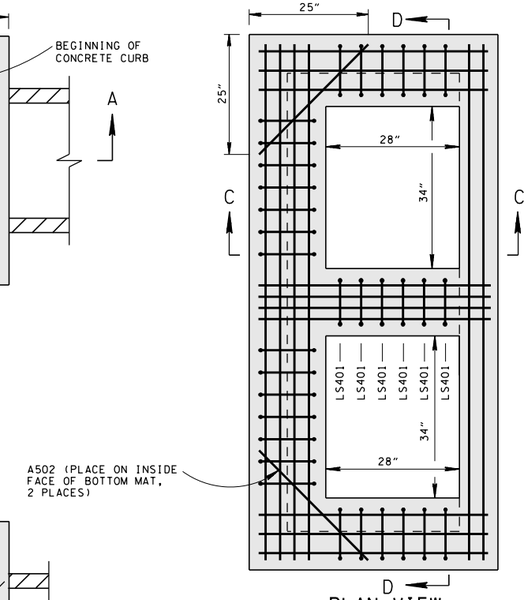
PLAN VIEW

SECTION *-*

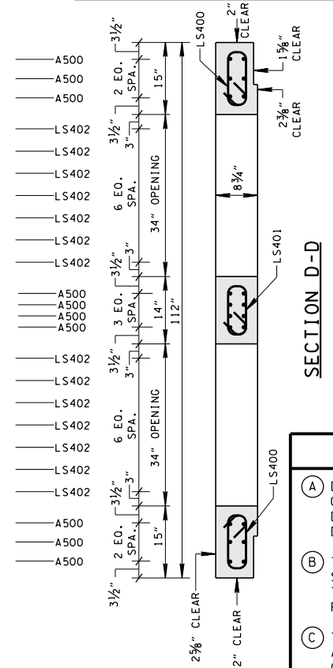
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



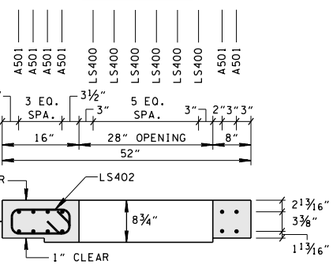
SECTION E-E



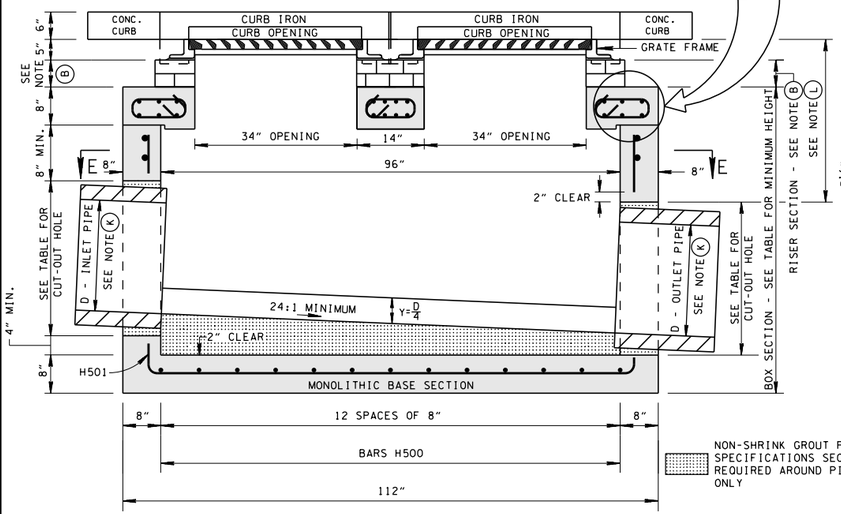
PLAN VIEW



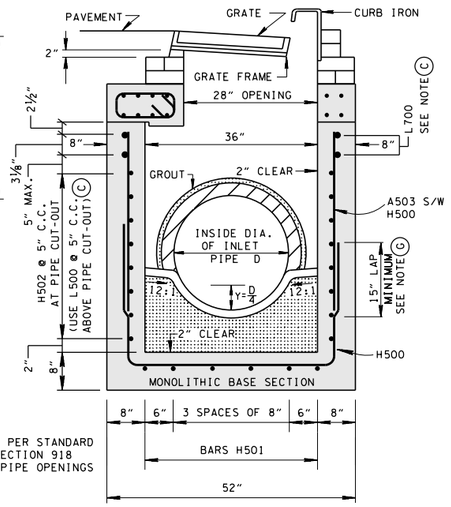
SECTION D-D



SECTION C-C



SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
(4) 30	3½	39	67	4.96
(4) 36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 14 CONCRETE CATCH BASINS AND ALL PRECAST NO. 14 CONCRETE CATCH BASINS THAT ARE GREATER THAN TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-14P FOR DETAILS OF PRECAST NO. 14 CONCRETE CATCH BASINS TEN FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

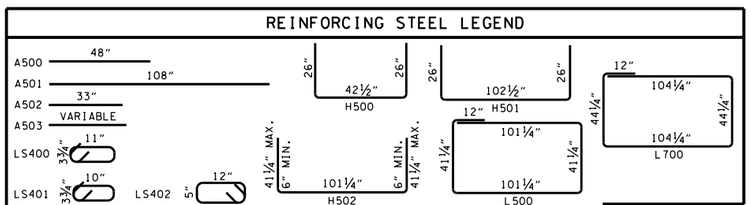
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.01 CATCH BASINS, TYPE 14, 0'-4' DEPTH THROUGH 611-14.05 CATCH BASINS, TYPE 14, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

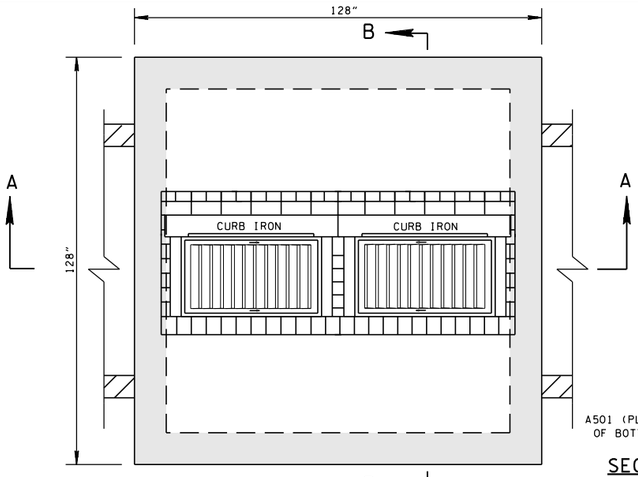
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

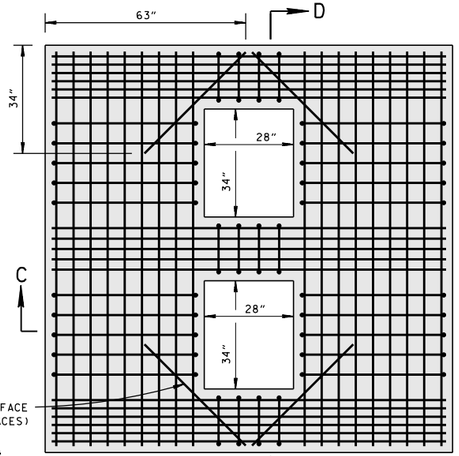
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.14 CATCH BASIN

5-27-95 | D-CB-14S

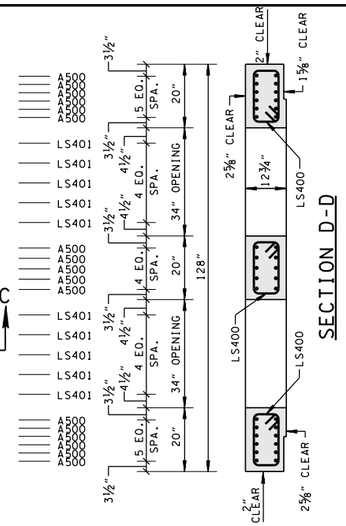


PLAN VIEW



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	61½	4.42
24	3	32	68½	4.96
30	3½	39	75½	5.50
36	4	46	82½	6.04
42	4½	53	89½	6.58
48	5	60	96½	7.13
54	5½	67	103½	7.67
60	6	74	110½	8.21
66	6½	81	117½	8.75
72	7	88	124½	9.29
78	7½	95	131½	9.83

- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE Ⓒ
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 5-5-05: CORRECTED STEEL SPACING IN SECTION C-C.

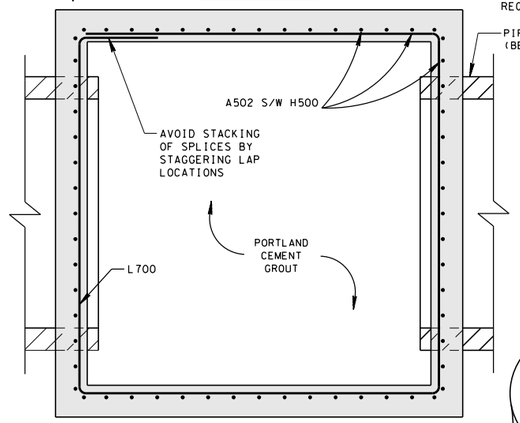
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

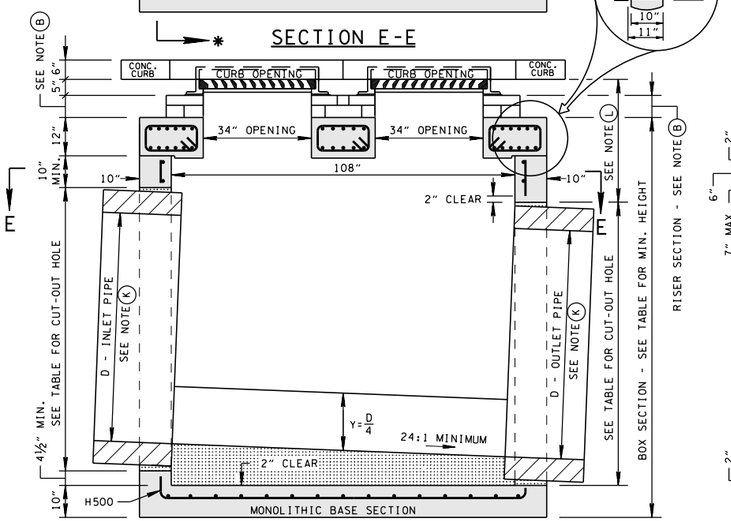
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

PLAN VIEW

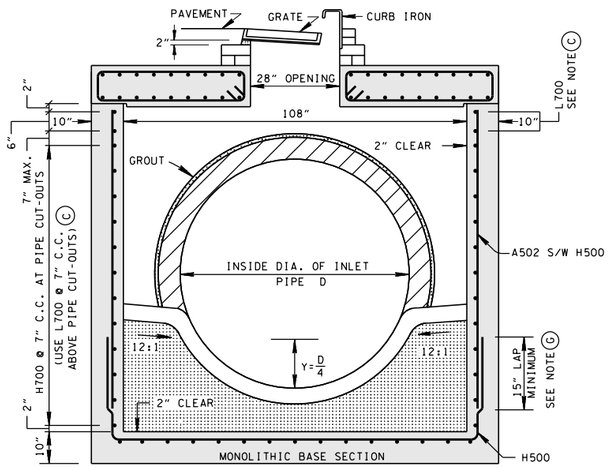


SECTION E-E

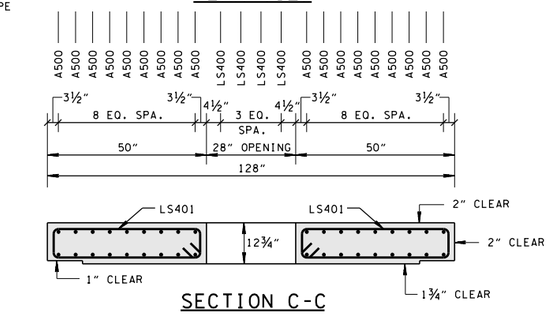


NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION A-A



SECTION B-B



SECTION C-C

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 14SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 14SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

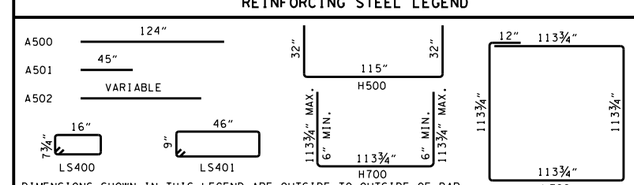
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.02 CATCH BASINS, TYPE 14, > 4'-8' DEPTH THROUGH 611-14.07, CATCH BASINS, TYPE 14, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

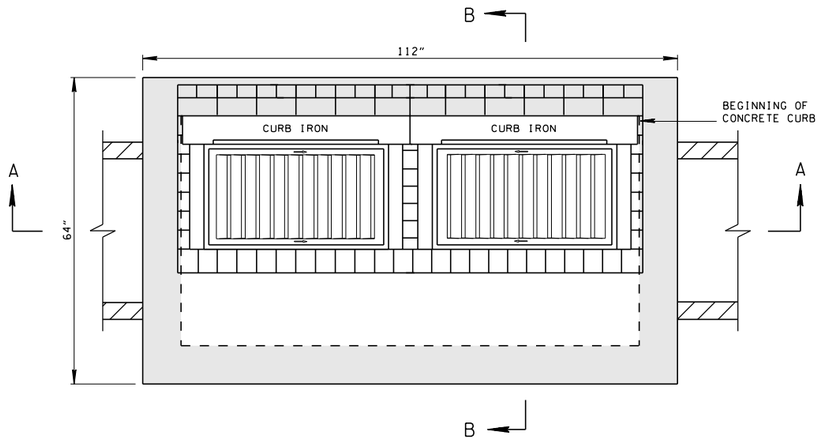
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

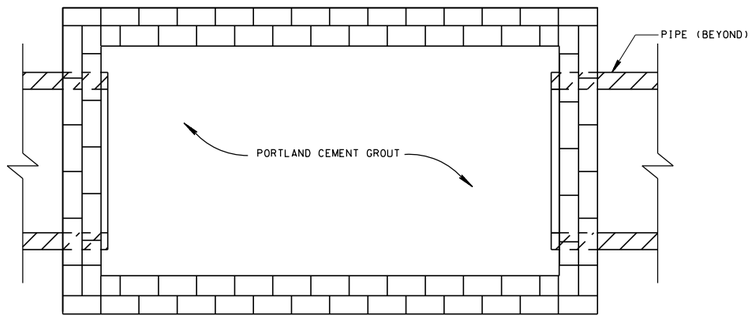
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 14 CATCH BASIN

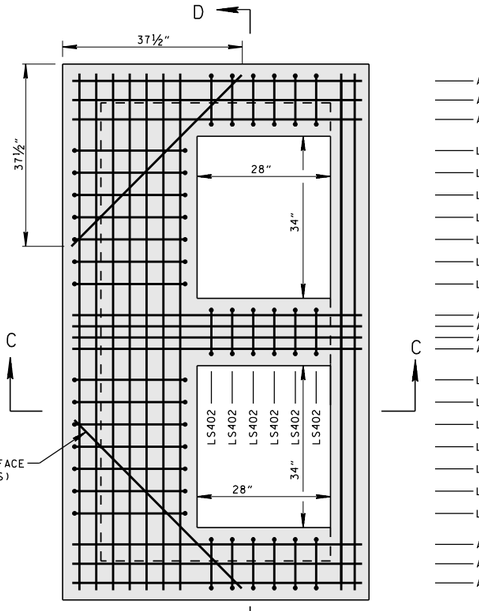
7-29-99 | D-CB-14SE



PLAN VIEW

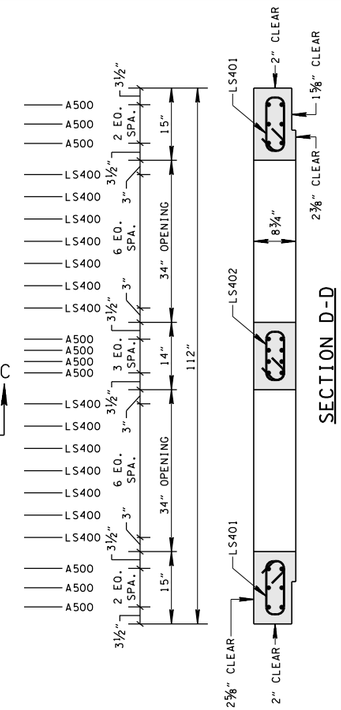


SECTION E-E

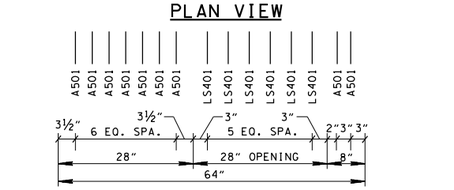


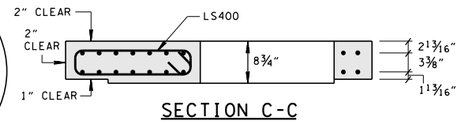
A502 (PLACE ON INSIDE FACE OF BOTTOM MAT, 2 PLACES)

PLAN VIEW

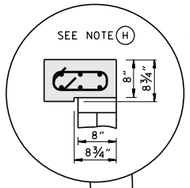


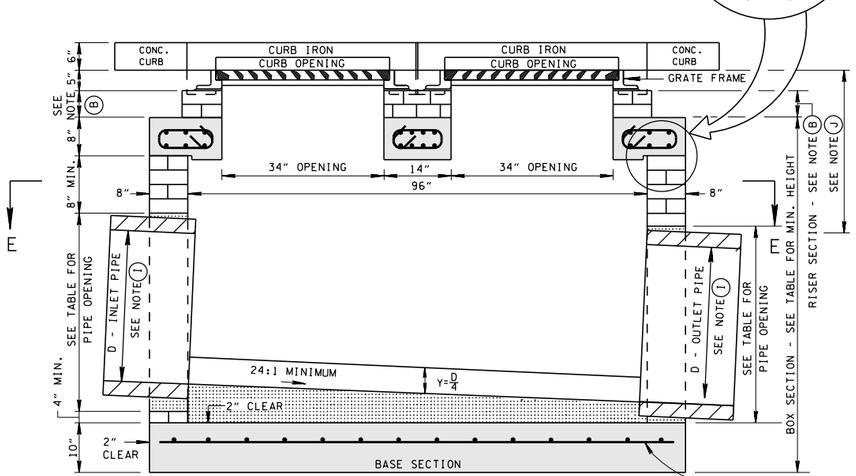
SECTION D-D



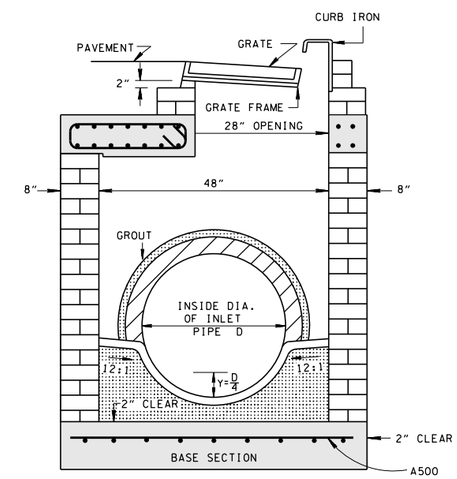


SECTION C-C





SECTION A-A



SECTION B-B

- REV. 7-29-99: ELIMINATED 36" DIAMETER PIPE FROM MINIMUM DEPTH TABLE.
- REV. 10-26-00: MODIFIED GENERAL NOTE (A)
- REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (1)
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 16 BRICK CATCH BASINS THAT ARE SIX FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-16S FOR DETAILS OF NO. 16 CONCRETE CATCH BASINS THAT ARE MORE THAN SIX FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-16.01 CATCH BASINS, TYPE 16, 0'-4' DEPTH AND 611-16.02 CATCH BASINS, TYPE 16, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 6.00'.

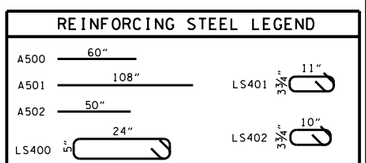
CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	3.88
24	3	32	62	4.42
30	3½	39	69	4.96

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

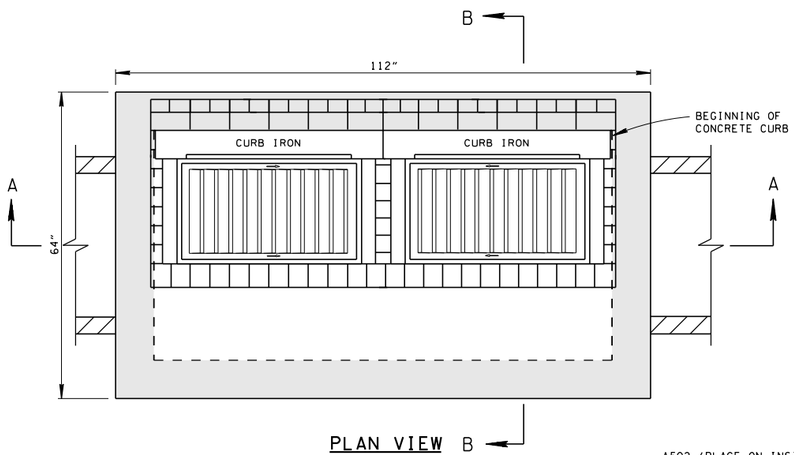
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR BRICK NO.16 CATCH BASIN

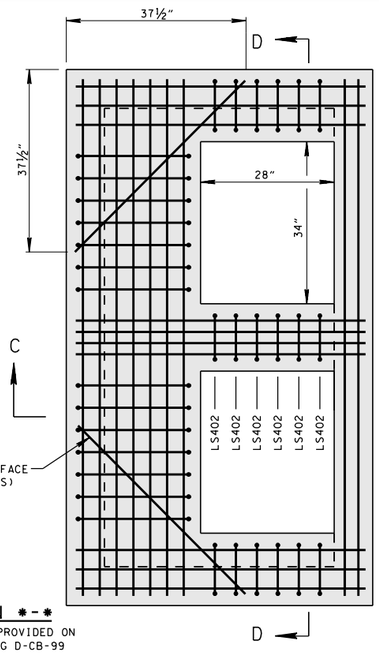
NOT TO SCALE | 4-15-97 | D-CB-16B

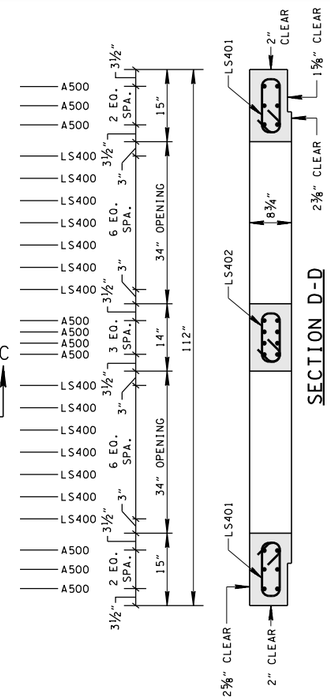
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C).
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J). ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

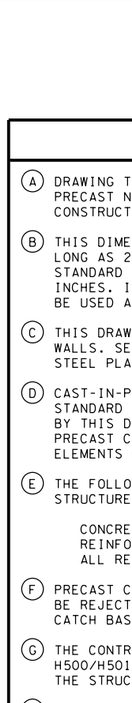
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



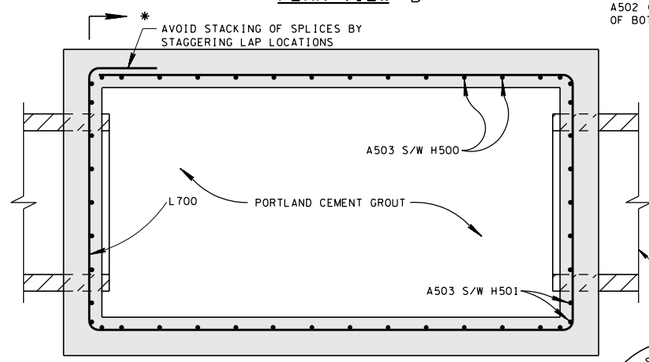
PLAN VIEW B







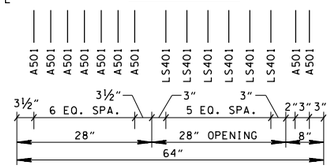
SECTION D-D



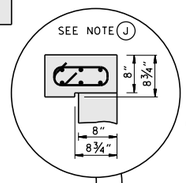
SECTION *-*

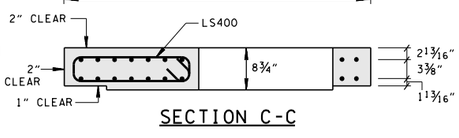
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

PLAN VIEW

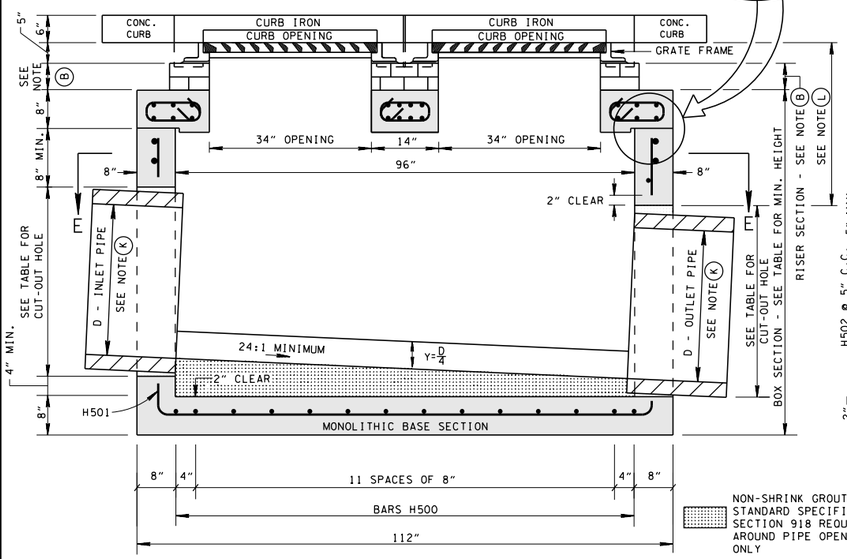


SECTION E-E

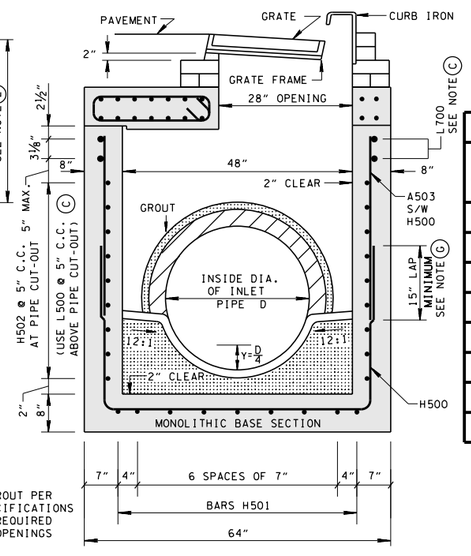




SECTION C-C



SECTION A-A



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 16 CONCRETE CATCH BASINS AND ALL PRECAST NO. 16 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-16.01 CATCH BASINS, TYPE 16, 0'-4' DEPTH THROUGH 611-16.05, CATCH BASINS, TYPE 16, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
30	3½	39	67	4.96
36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

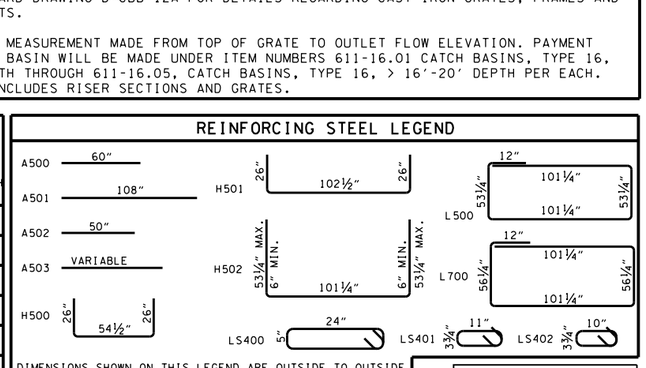
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

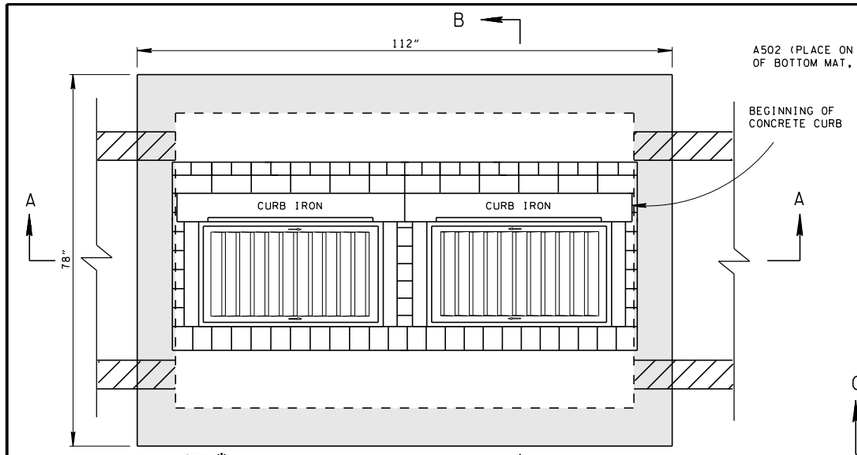
CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

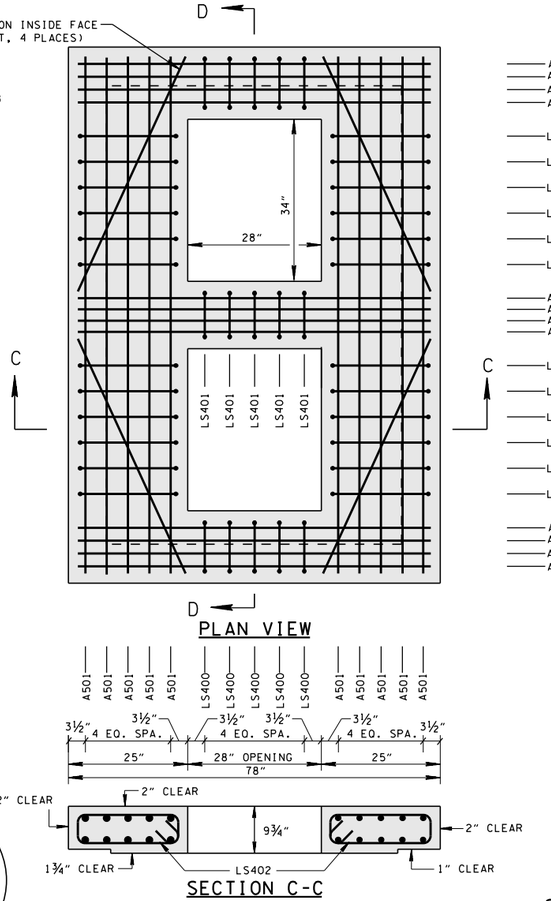
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.16 CATCH BASIN

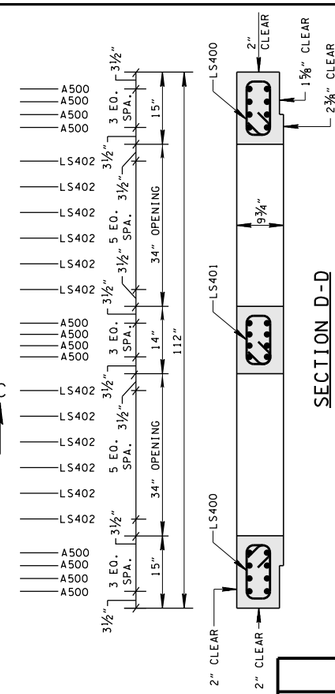
NOT TO SCALE | 4-15-97 | D-CB-16S



SECTION E-E



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	56	4.13
24	3	32	63	4.67
30	3½	39	70	5.21
36	4	46	77	5.75
42	4½	53	84	6.29
48	5	60	91	6.83
(4) 54	5½	67	98	7.38
(4) 60	6	74	105	7.92

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.

- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 17 CONCRETE CATCH BASINS AND ALL PRECAST NO. 17 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

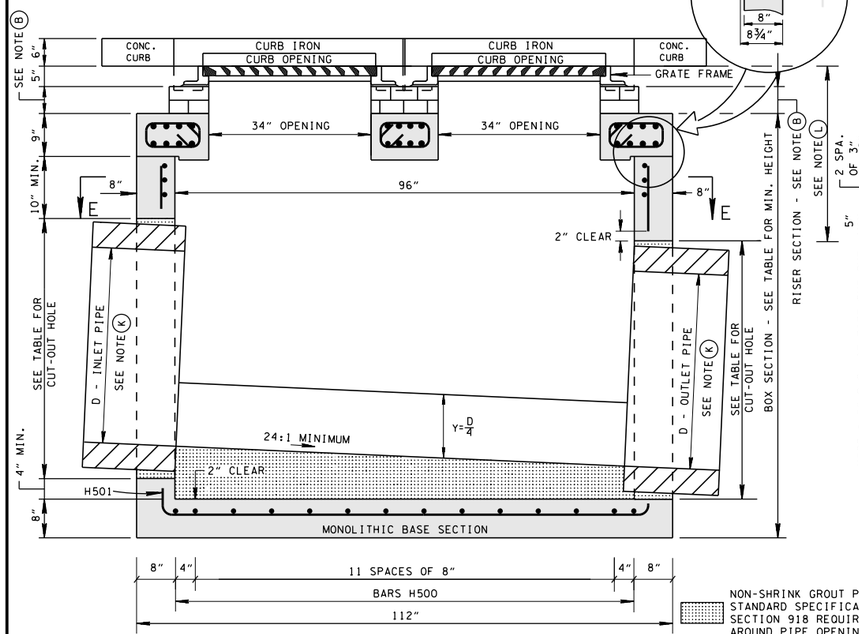
(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

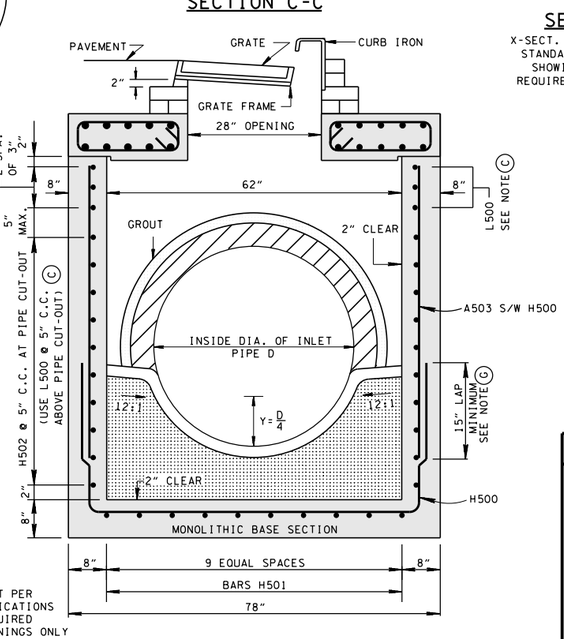
(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-17.02 CATCH BASINS, TYPE 17, > 4'-8' DEPTH THROUGH 611-17.05, CATCH BASINS, TYPE 17, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.



SECTION A-A

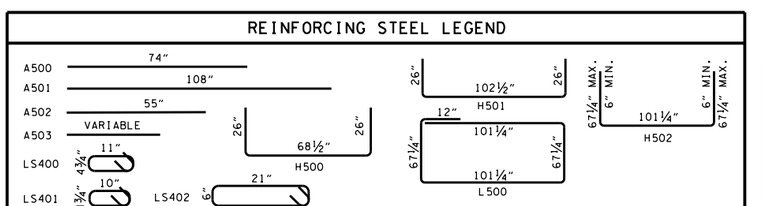


SECTION B-B

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

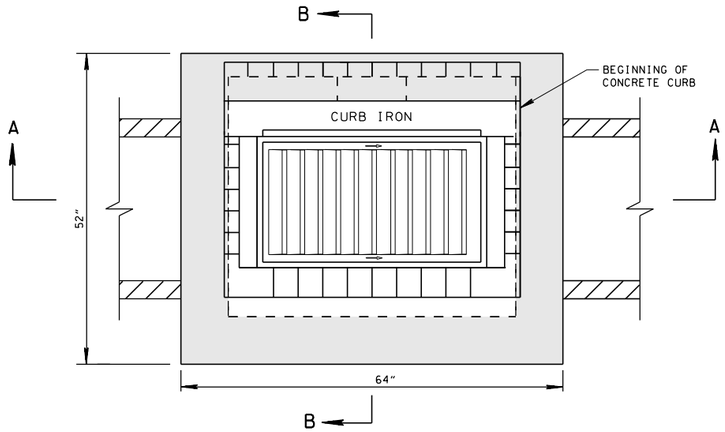
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

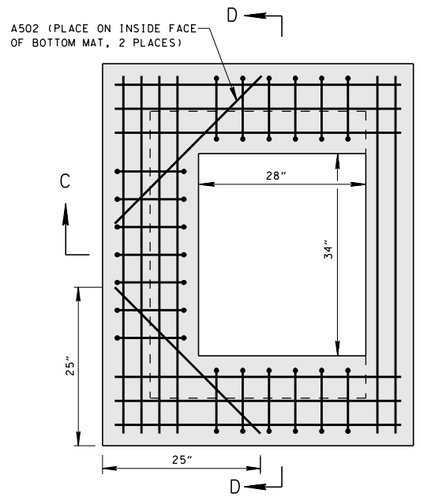
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO.17 CATCH BASIN

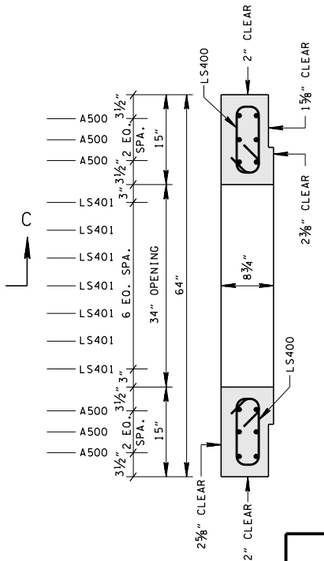
7-29-97 | D-CB-17S



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 8.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(3) 30	3½	39	65	4.79
(3) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

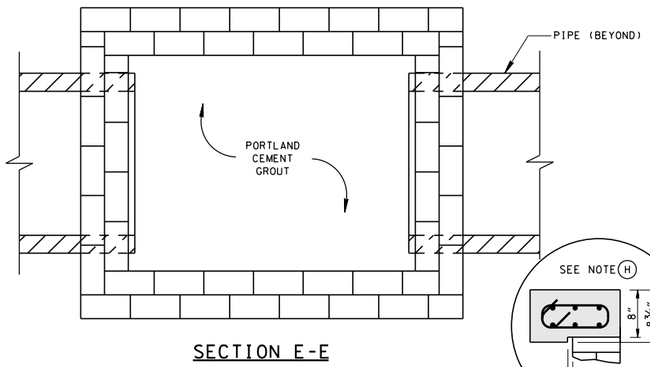
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

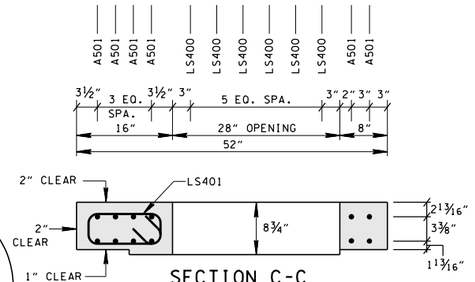
- REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (I)

  REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

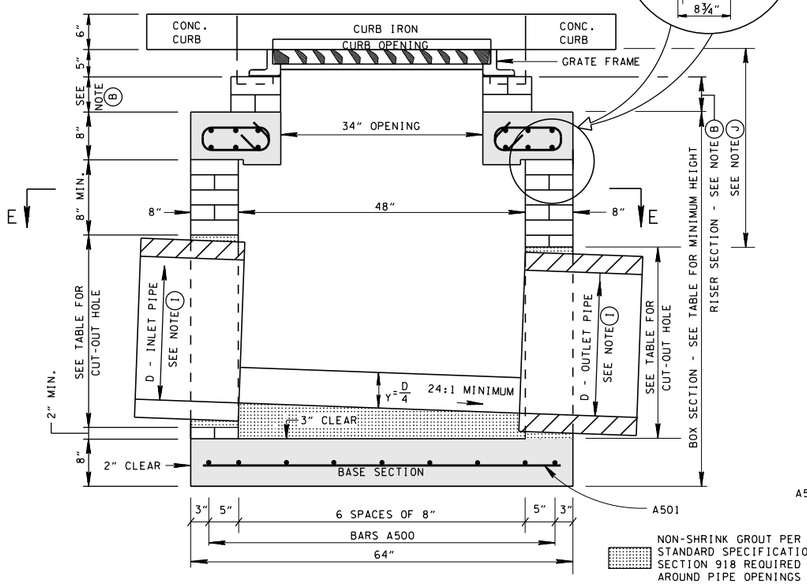
  REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



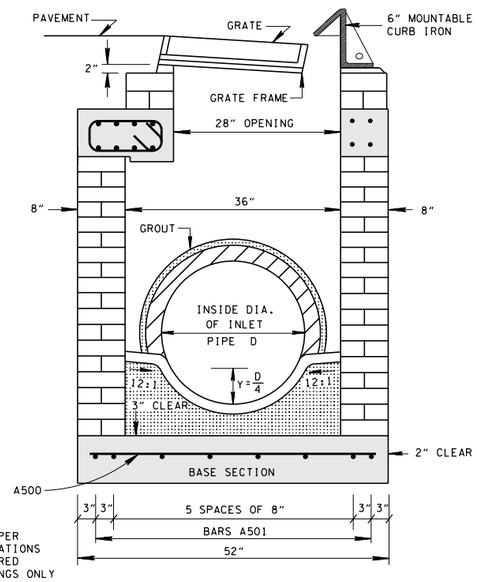
SECTION E-E



SECTION C-C



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 25 BRICK CATCH BASINS THAT ARE EIGHT FEET AND LESS IN DEPTH. SEE STANDARD DRAWINGS D-CB-25P AND D-CB-25S FOR DETAILS OF NO. 25 CONCRETE CATCH BASINS THAT ARE MORE THAN EIGHT FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

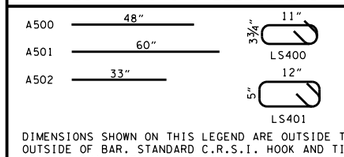
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH AND 611-25.02 CATCH BASINS, TYPE 25, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

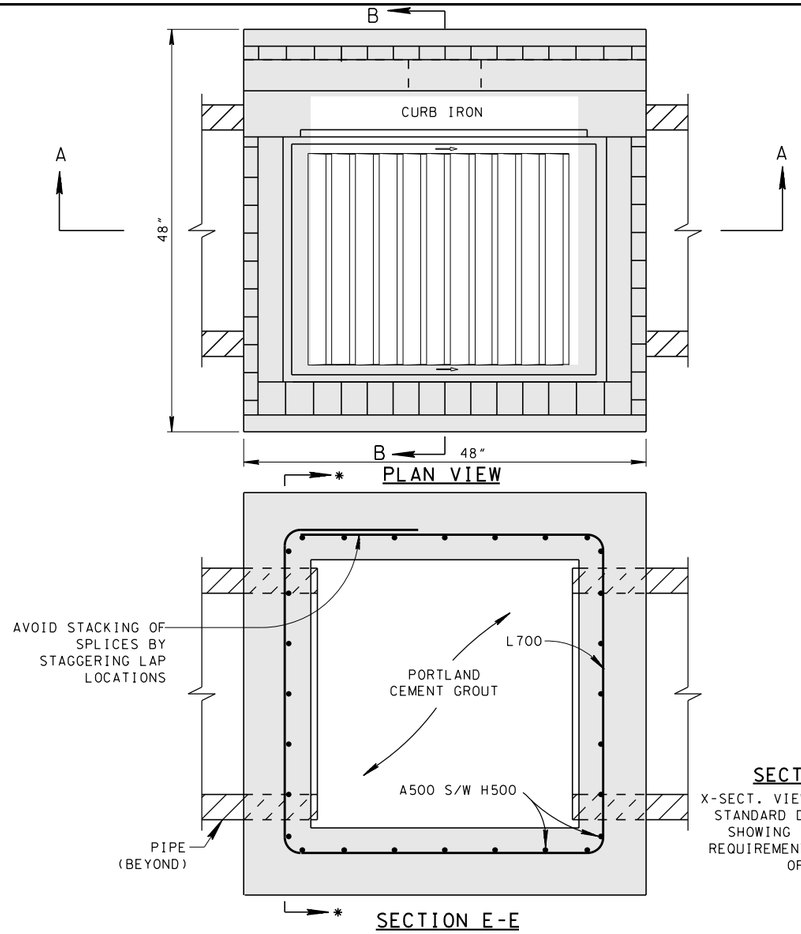
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR BRICK NO. 25 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

NOT TO SCALE | 7-29-96 | D-CB-25B



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25LP (LOW PROFILE) AND ALL PRECAST NO. 25LP (LOW PROFILE) CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 9 INCHES AS LONG AS 22 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(I) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

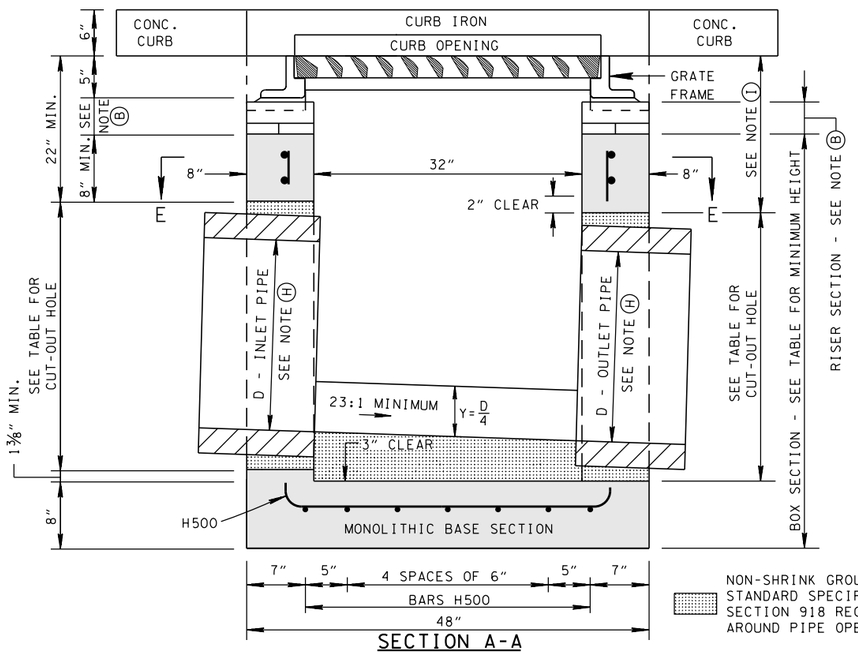
(J) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(K) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

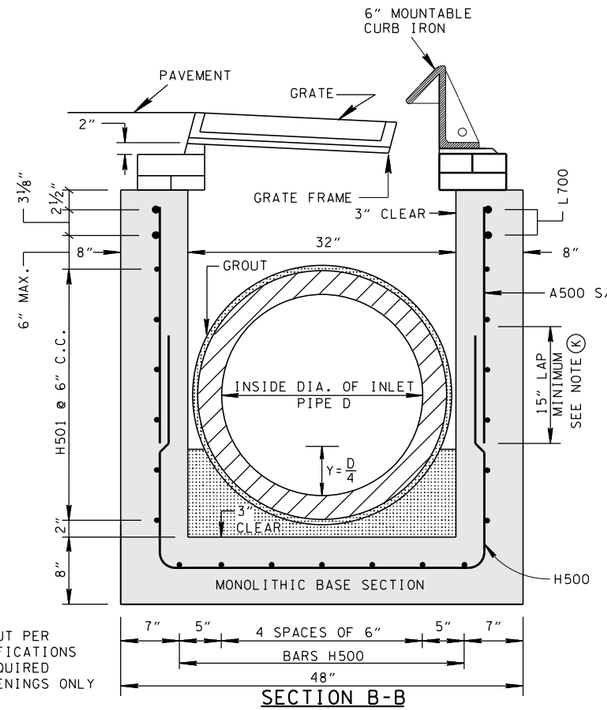
(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH AND 611-25.02, CATCH BASINS, TYPE 25, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

- REV.12-18-00: CHANGED DRAWING NO. FROM D-CB-25SA TO D-CB-25LP.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- REV. 7-29-04: CHANGED GENERAL NOTE (I)

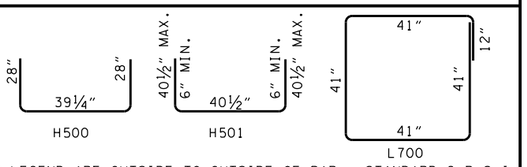
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	42⅜	3.74
24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 61".

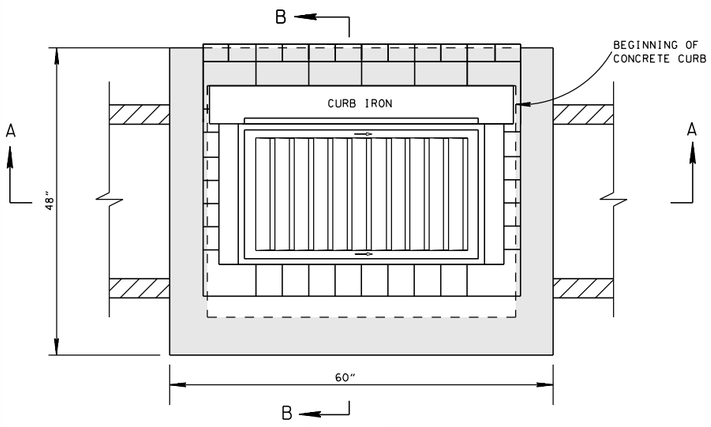
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

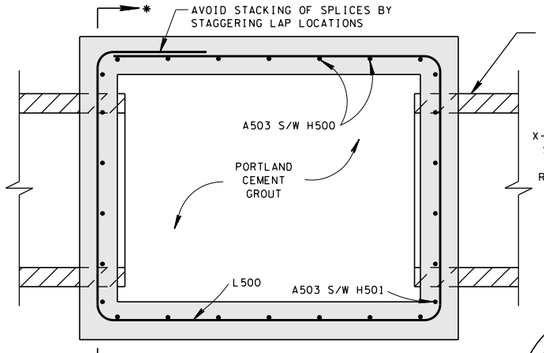
LOW PROFILE 32" x 32" SQUARE CONCRETE NO.25LP CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

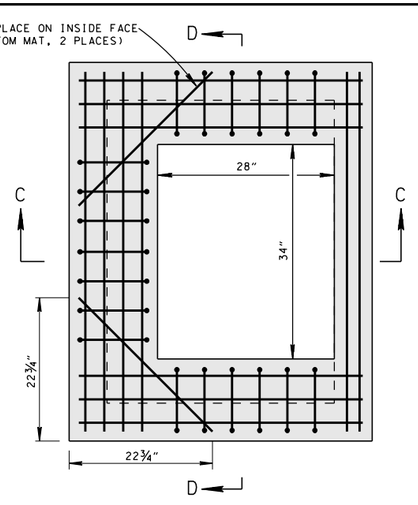
NOT TO SCALE | 5-27-99 | D-CB-25LP



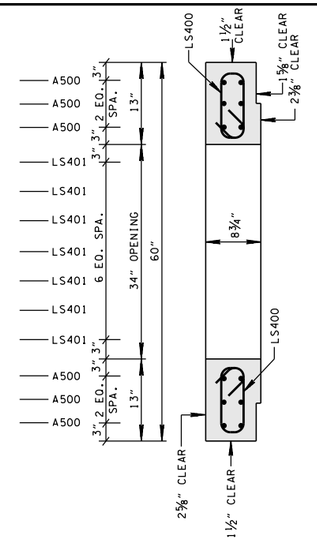
PLAN VIEW



SECTION E-E



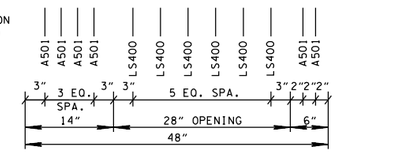
PLAN VIEW

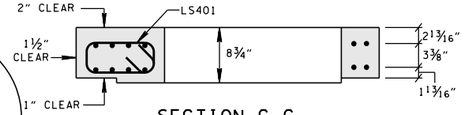


SECTION D-D

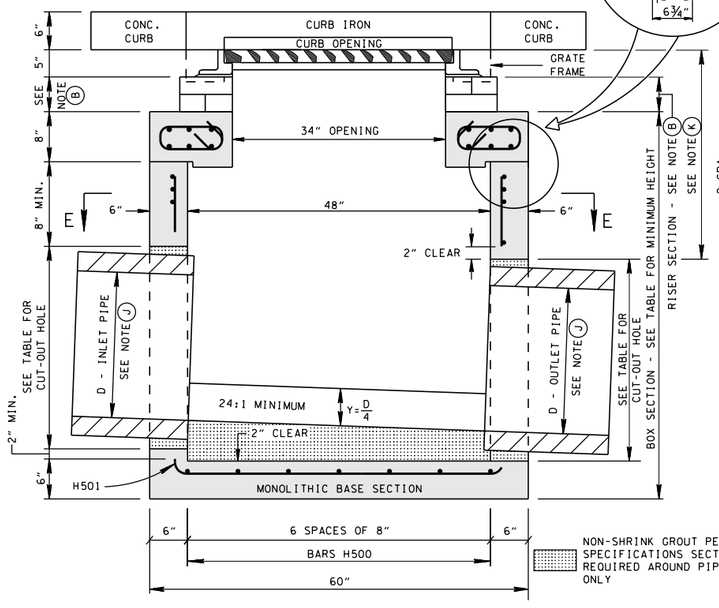
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

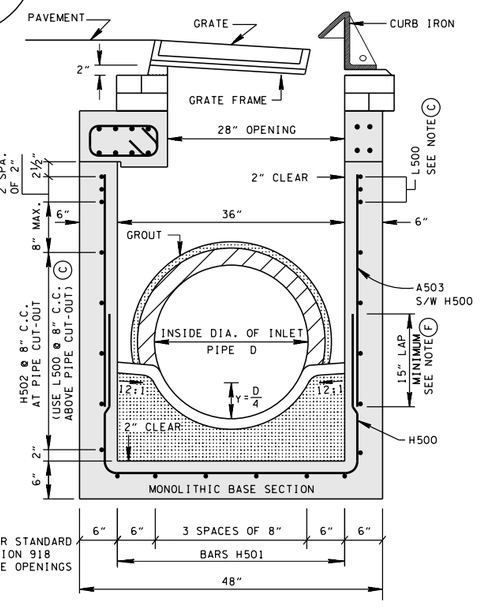




SECTION C-C



SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25
(4) 30	3½	39	63	4.79
(4) 36	4	46	70	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 25 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-25S FOR DETAILS OF CAST-IN-PLACE NO. 25 CONCRETE CATCH BASINS AND PRECAST NO. 25 CONCRETE CATCH BASINS THAT ARE GREATER TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

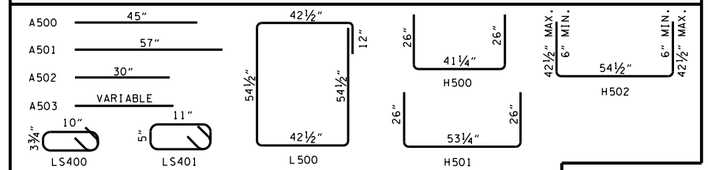
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.03, CATCH BASINS, TYPE 25, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

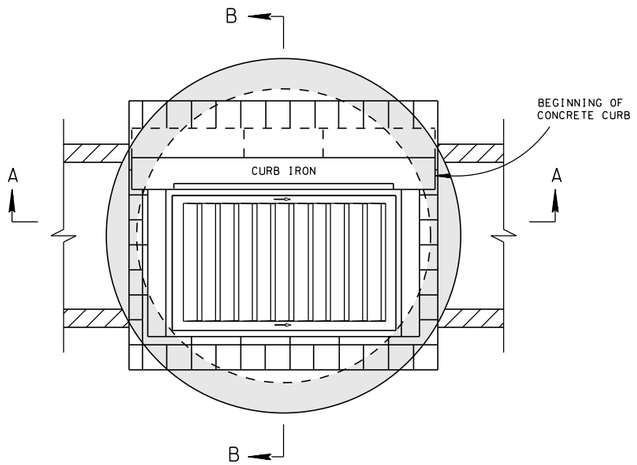
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

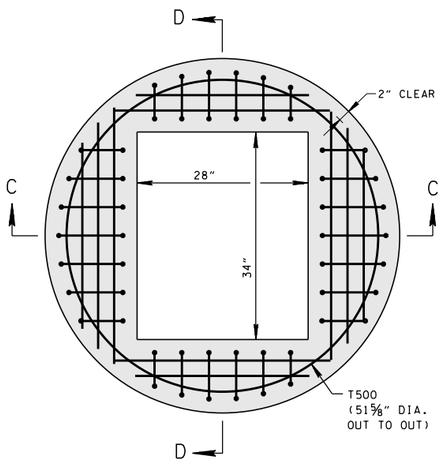
STANDARD PRECAST RECTANGULAR CONCRETE NO. 25 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

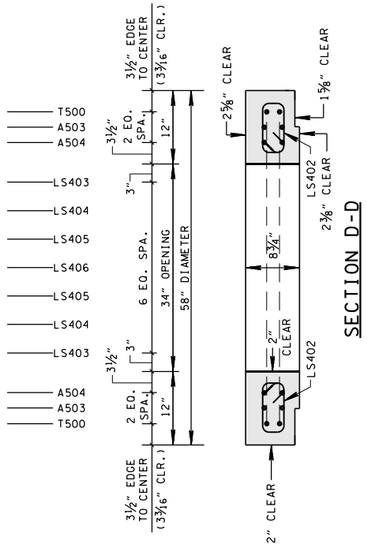
12-18-95 D-CB-25P



PLAN VIEW



LID REINFORCING



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25

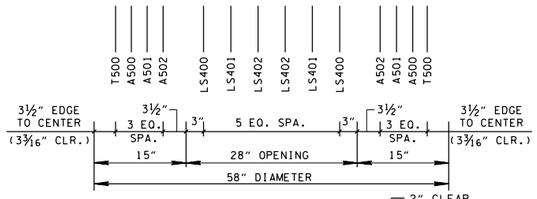
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

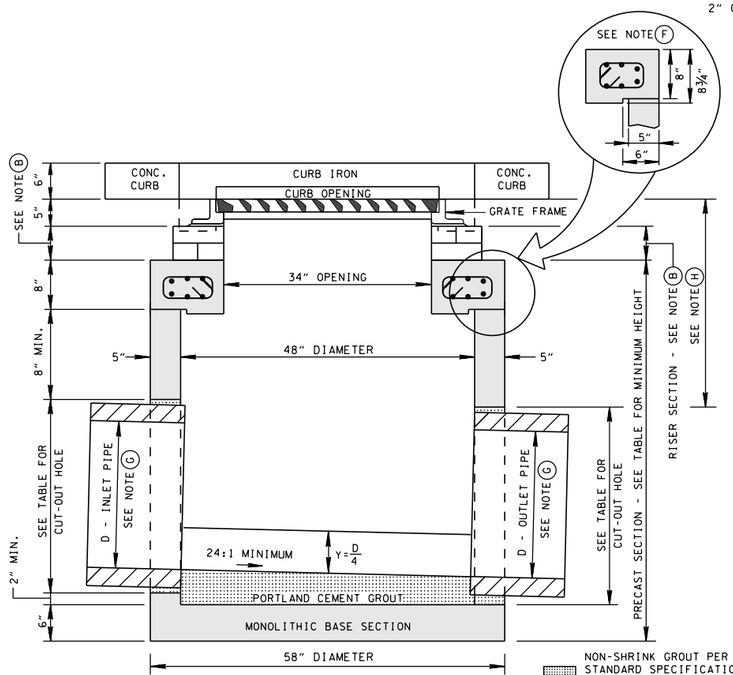
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 12-18-95: CHANGED DRAWING NO. FROM D-CB-12RC TO D-CB-25RA. CHANGED BASE THICKNESS AND VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 2-14-96: CHANGED SHEET NAME.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (F). CHANGED LABEL OF LAST FOUR GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 1-19-99: CHANGED MINMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 12-18-99: MODIFIED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I). ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

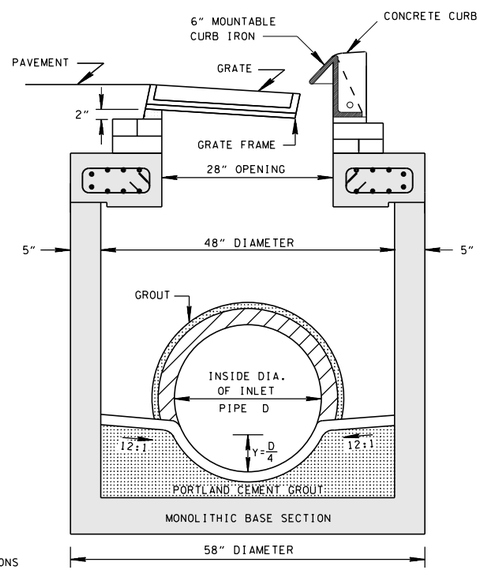
  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION C-C



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-25RB FOR DETAILS REGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.05 CATCH BASINS, TYPE 25, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

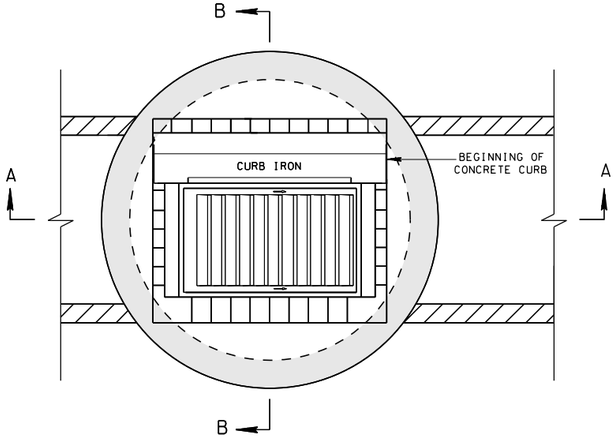
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 48" CIRCULAR NO. 25 CATCH BASIN

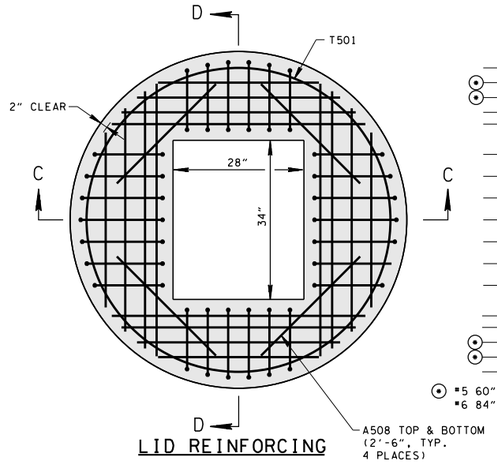
(FOR USE WITH 6" MOUNTABLE CURB)

NOT TO SCALE | 5-27-95 | D-CB-25RA

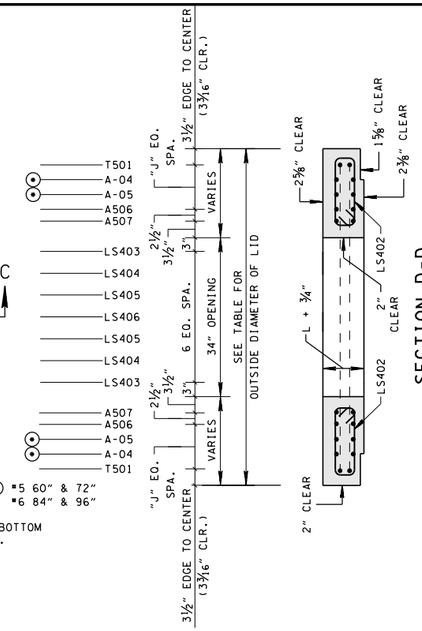
- REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (1) ADDED CATCH BASIN MAXIMUM DEPTH NOTE. CHANGED REINFORCING STEEL IN LID.
- REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



PLAN VIEW



LID REINFORCING



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
			60"	72"	84"	96"	60"	72"	84"	96"
18	2½	25	51½	53	57½	59	3.75	3.88	4.25	4.38
24	3	32	58½	60	64½	66	4.29	4.42	4.79	4.92
30	3½	39	65½	67	71½	73	4.83	4.96	5.33	5.46
36	4	46	72½	74	78½	80	5.38	5.50	5.88	6.00
42	4½	53	79½	81	85½	87	5.92	6.04	6.42	6.54
48	5	60	86½	88	92½	94	6.46	6.58	6.96	7.08
54	5½	67	93½	95	99½	101	7.00	7.13	7.50	7.63
60	6	74	100½	102	106½	108	7.54	7.67	8.04	8.17
66	6½	81	107½	109	113½	115	8.08	8.21	8.58	8.71

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

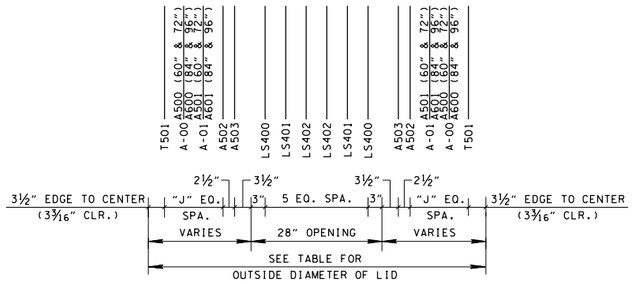
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

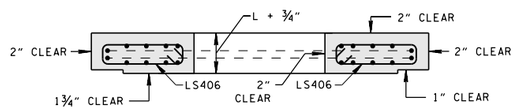
VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID

INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4
84	100	5
96	114	6

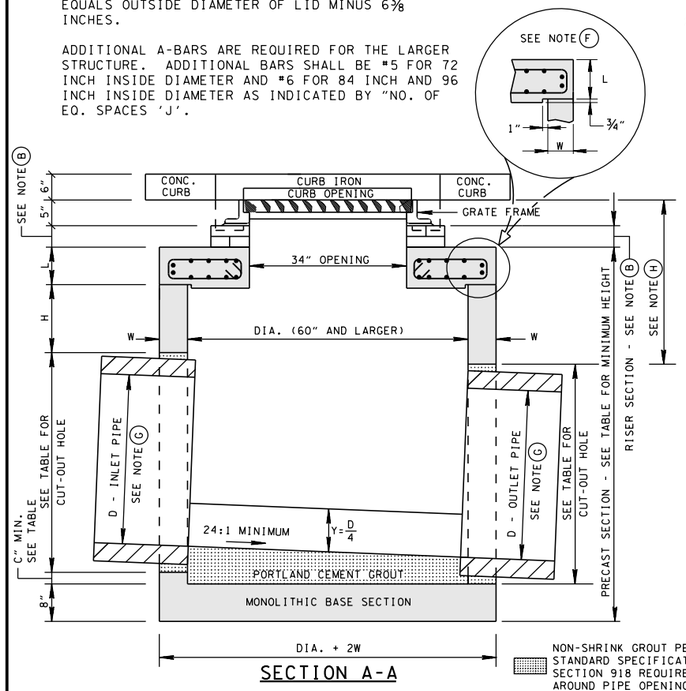
OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE. ADDITIONAL BARS SHALL BE #5 FOR 72 INCH INSIDE DIAMETER AND #6 FOR 84 INCH AND 96 INCH INSIDE DIAMETER AS INDICATED BY "NO. OF EQ. SPACES 'J'.



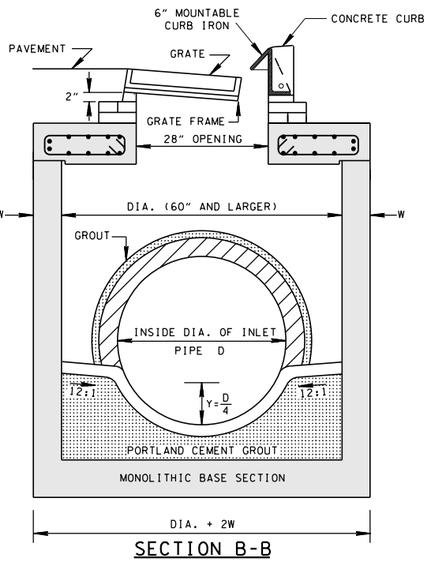


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCHES (FOR 72 INCH DIAMETER CATCH BASIN), 26 INCHES (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCH DEPTH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 26 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-12RA FOR DETAILS REGARDING 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.07, CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-25.08, CATCH BASINS, TYPE 25, ____ '- ____ ' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

CATCH BASIN DIMENSIONS

INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION	
						C (INCHES)	H (INCHES)
60	6	8	72	36	24	2.5	8
72	7	9	86	48	30	3.0	8
84	8	9	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

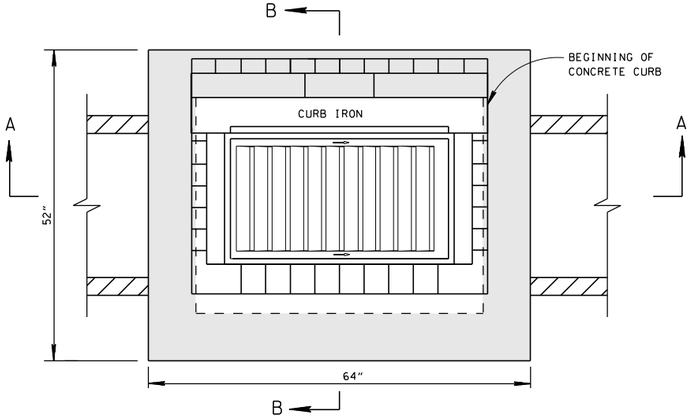
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

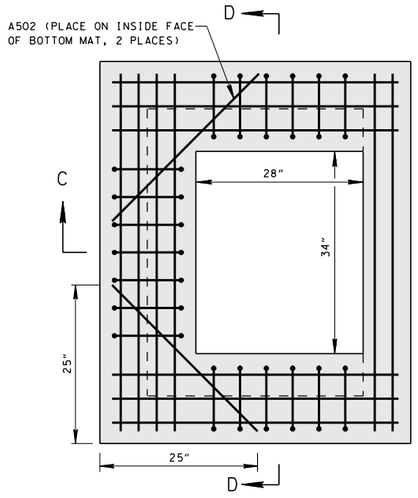
STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

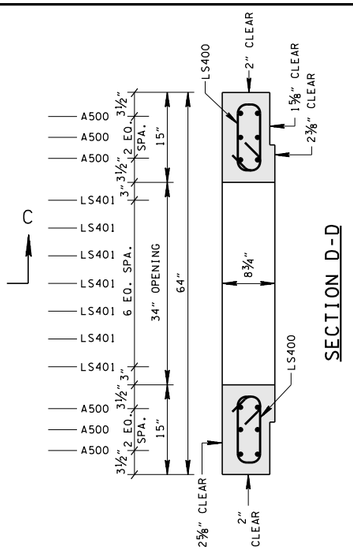
NOT TO SCALE | 12-18-93 | D-CB-25RB



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

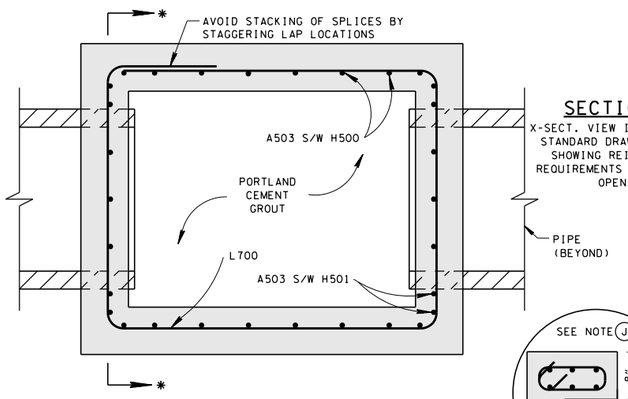
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

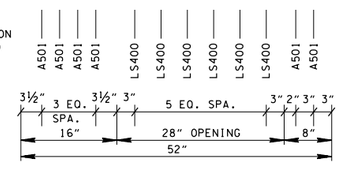
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

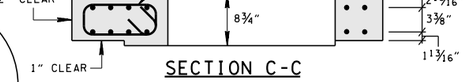


SECTION E-E

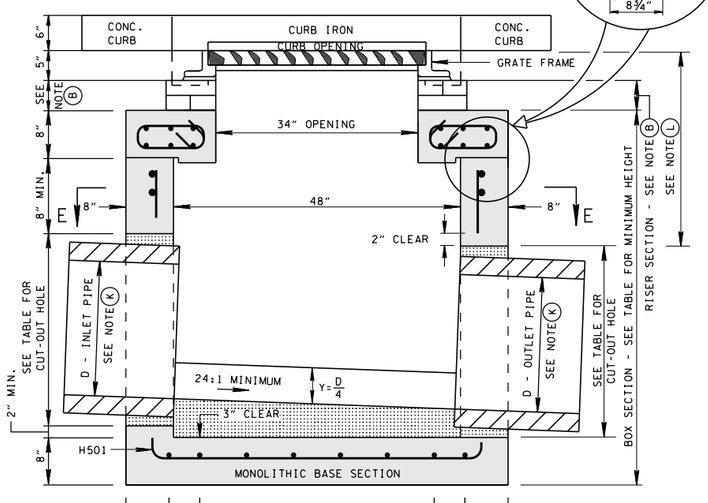
SECTION *-*

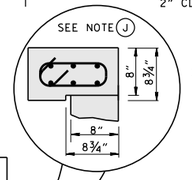
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

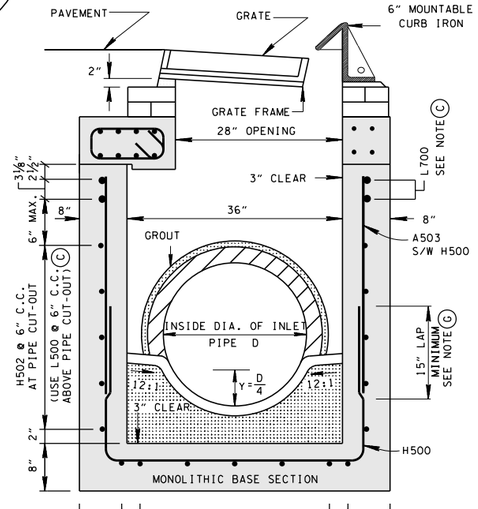


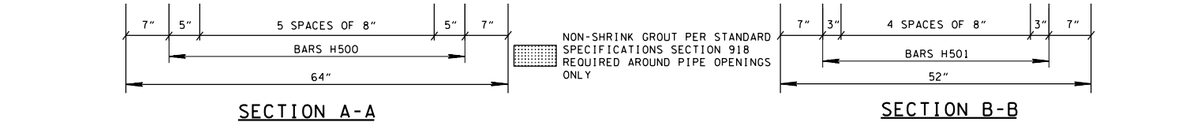


SECTION C-C









SECTION A-A

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25 CONCRETE CATCH BASINS AND ALL PRECAST NO. 25 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-25P FOR DETAILS OF PRECAST NO. 25 CONCRETE CATCH BASINS TWELVE FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

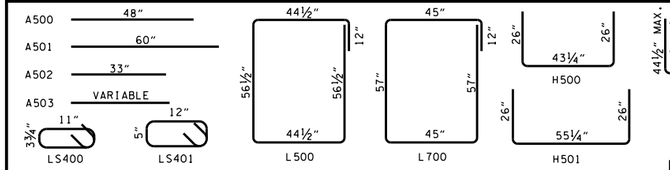
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.05 CATCH BASINS, TYPE 25, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

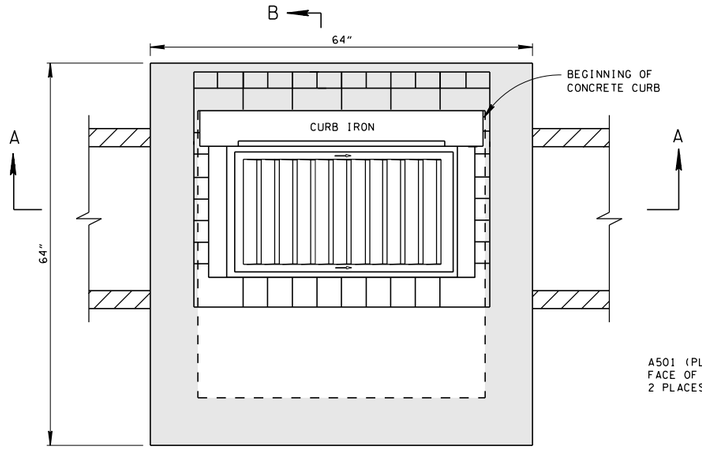
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

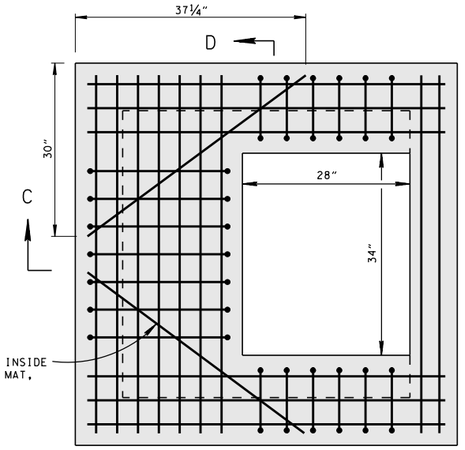
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN
(FOR USE WITH 6" MOUNTABLE CURB)

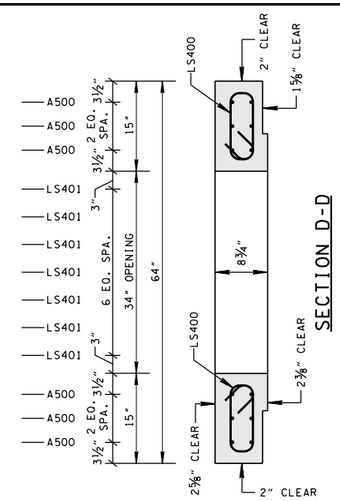
5-27-95 D-CB-25S



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
30	3½	39	65	4.79
36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 25SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

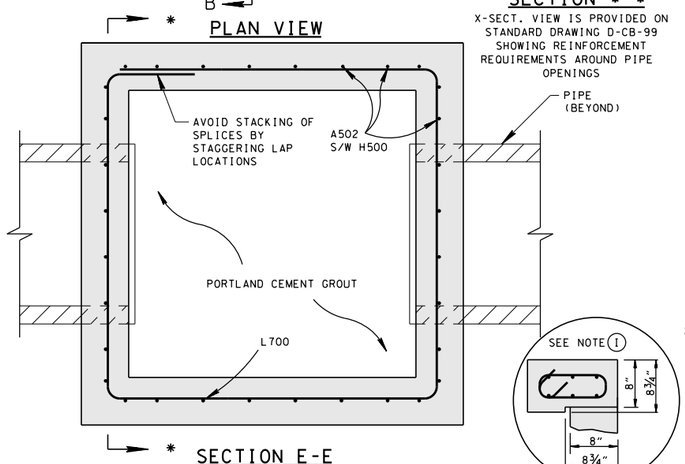
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

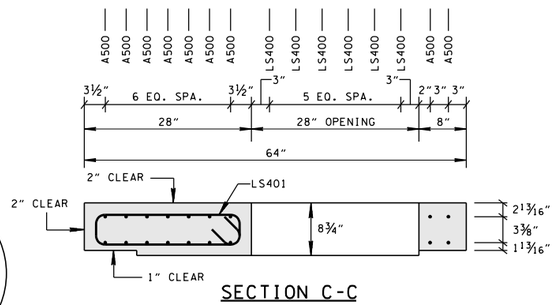
(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

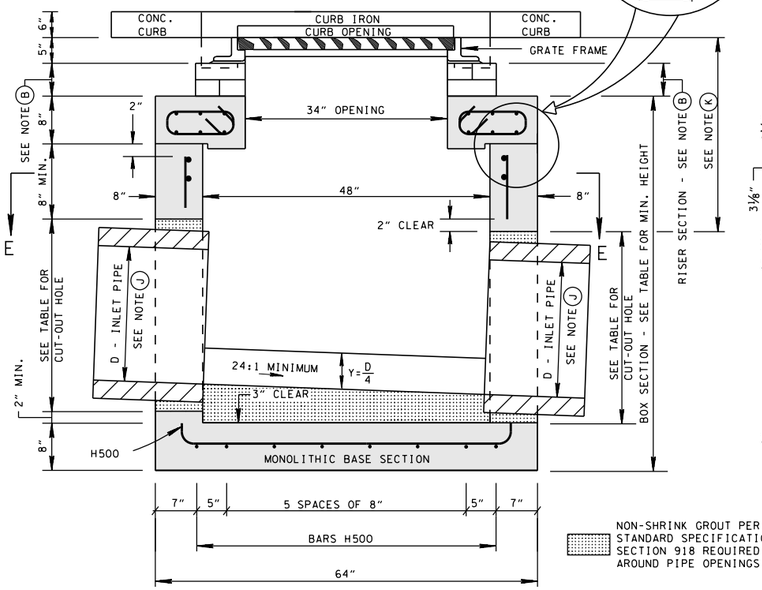
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.



SECTION *-*
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

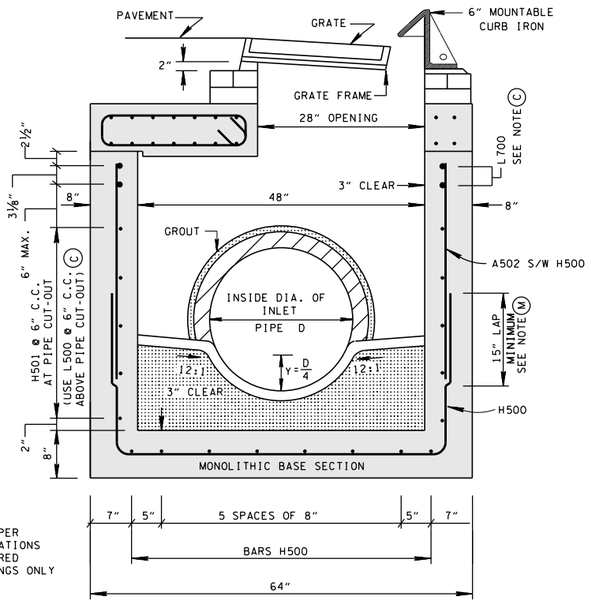


SECTION C-C



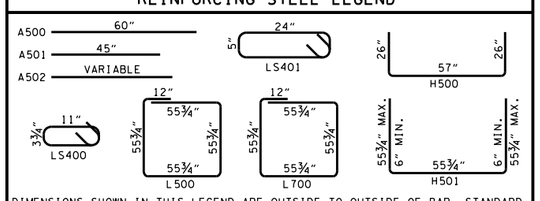
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

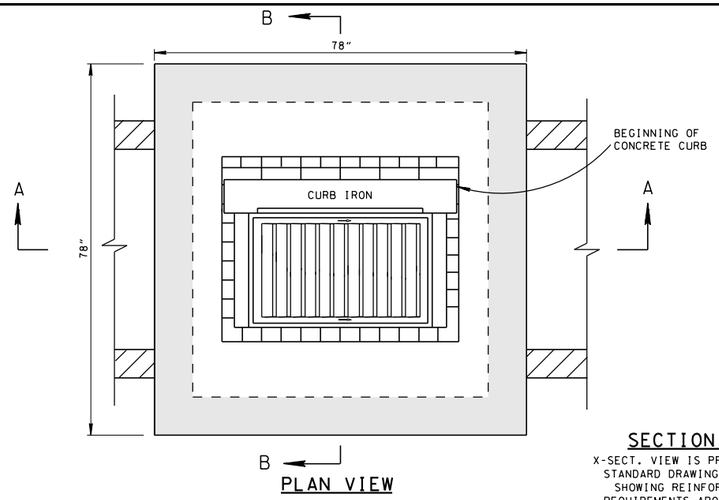
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

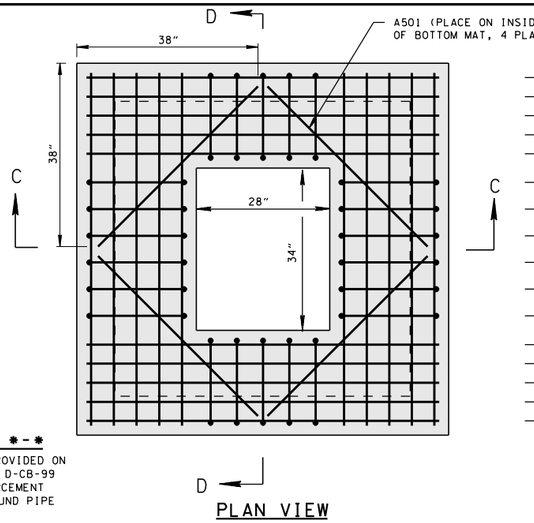
STANDARD 4' X 4' SQUARE CONCRETE NO.25 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

NOT TO SCALE | 6-30-00 | D-CB-25SB



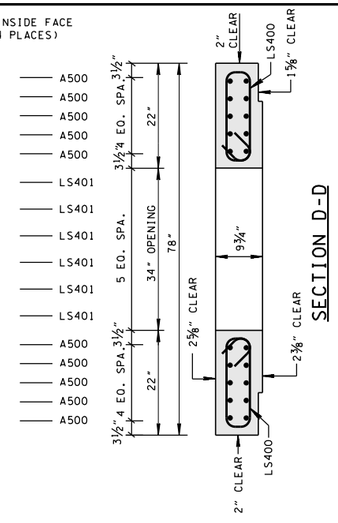
PLAN VIEW



PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	55	4.04
24	3	32	62	4.58
30	3½	39	69	5.13
36	4	46	76	5.67
42	4½	53	83	6.21
48	5	60	90	6.75

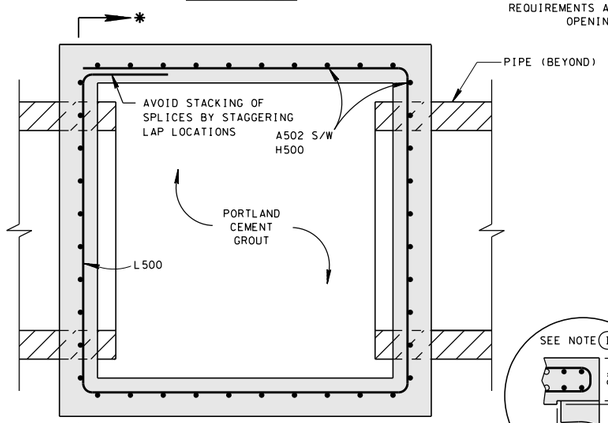
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

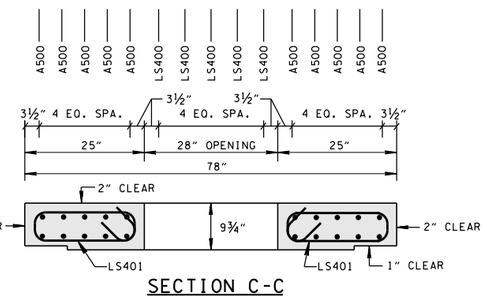
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

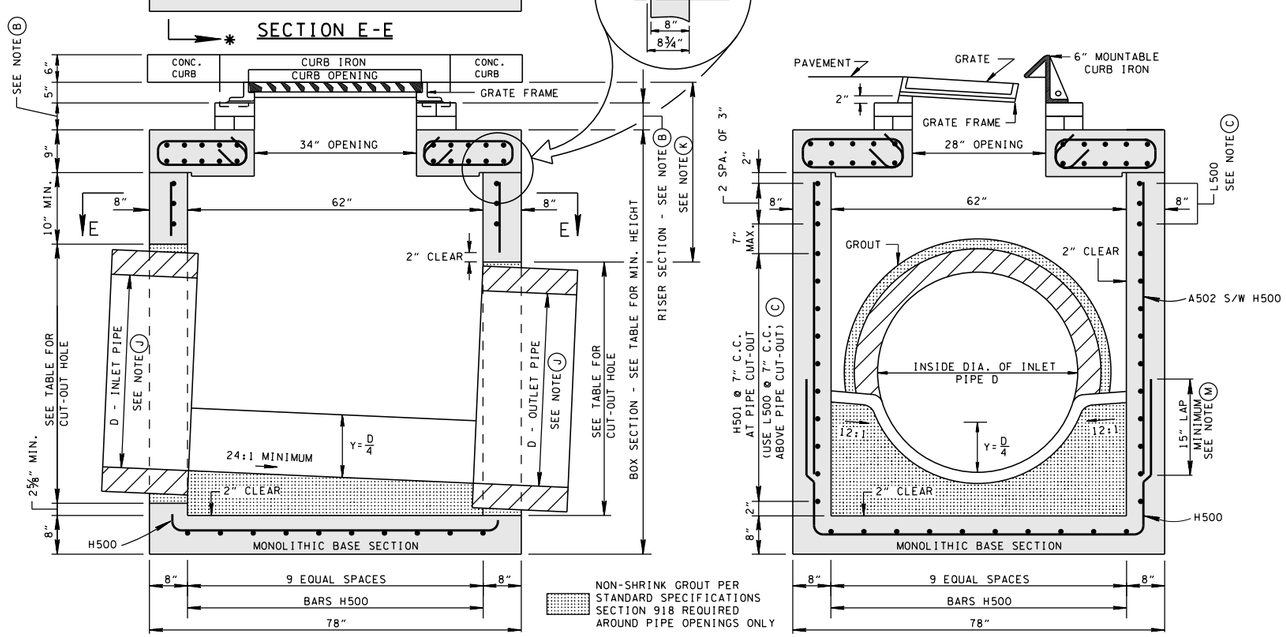
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION E-E



SECTION C-C



SECTION A-A

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 25SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

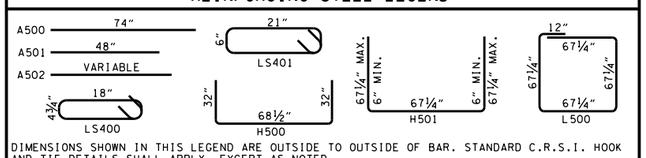
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.02 CATCH BASINS, TYPE 25, > 4'-8' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

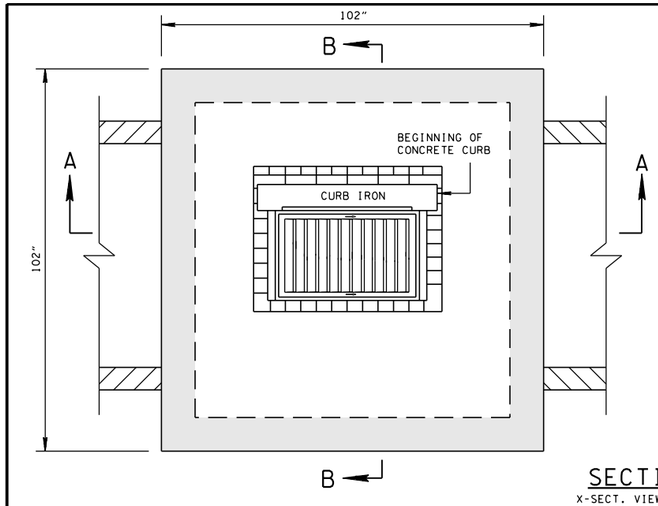
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

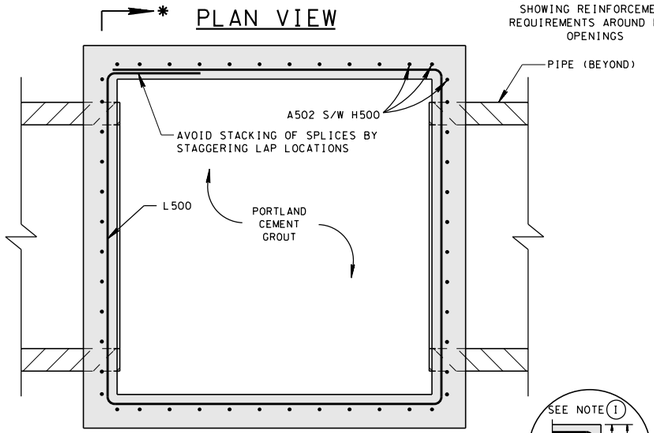
STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.25 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

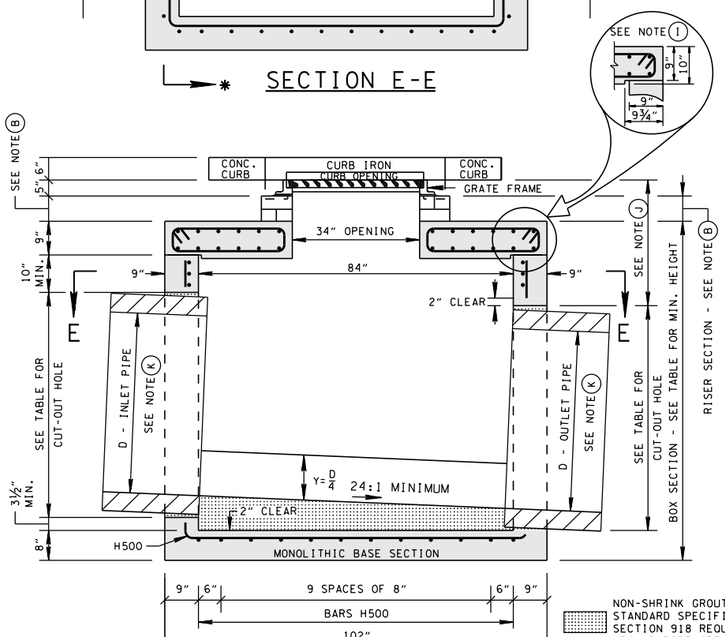
NOT TO SCALE | 6-30-00 | D-CB-25SC



PLAN VIEW



SECTION E-E

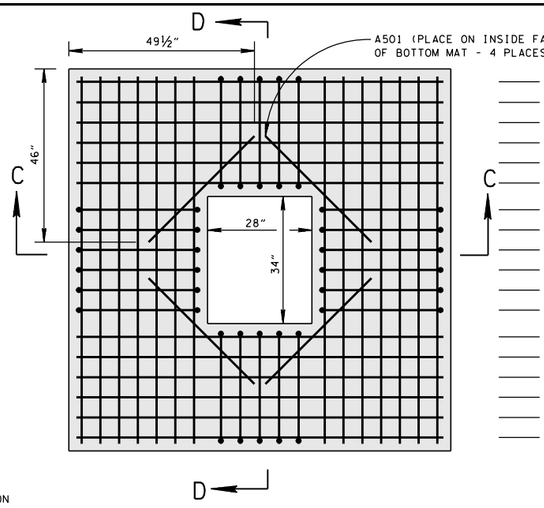


SECTION A-A

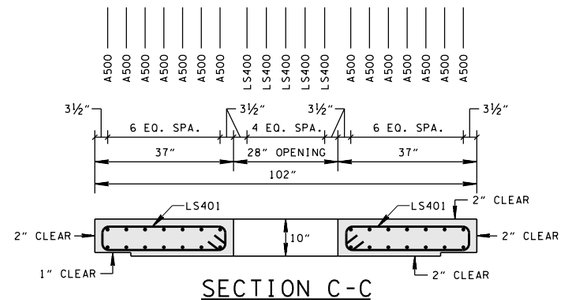
NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION *-*

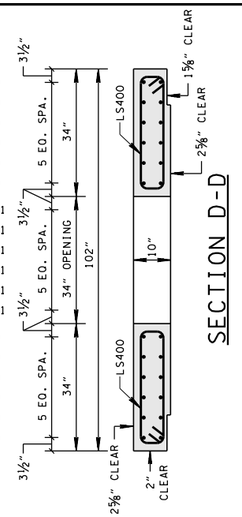
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



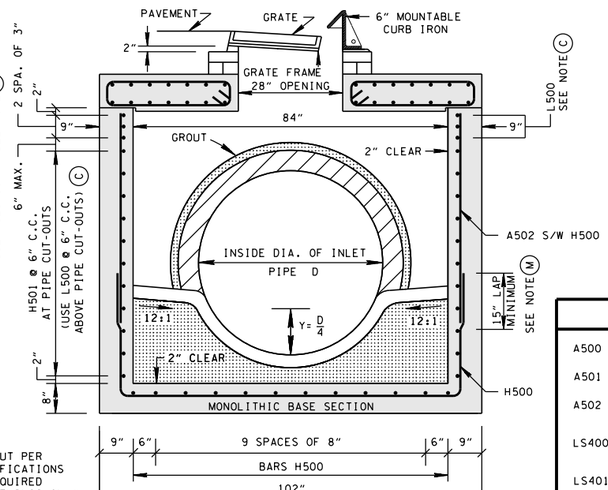
PLAN VIEW



SECTION C-C



SECTION D-D



SECTION B-B

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55½	4.08
24	3	32	62½	4.63
30	3½	39	69½	5.17
36	4	46	76½	5.71
42	4½	53	83½	6.25
48	5	60	90½	6.79
54	5½	67	97½	7.33
60	6	74	104½	7.88
66	6½	81	111½	8.42

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 25SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

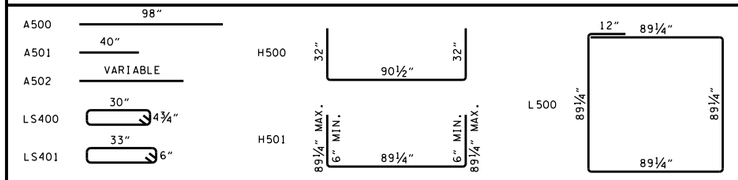
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.02 CATCH BASINS, TYPE 25, > 4'-8' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

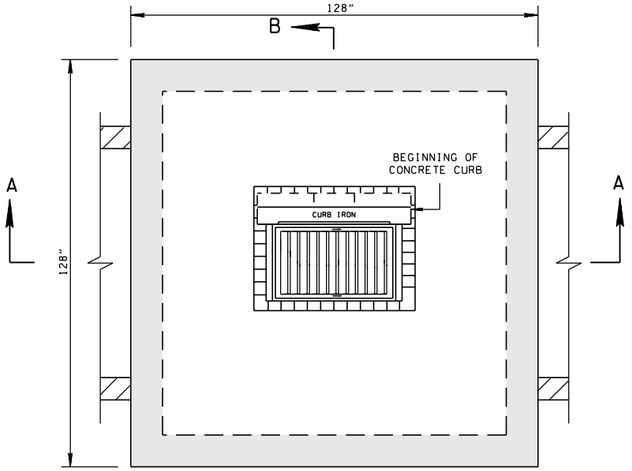
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

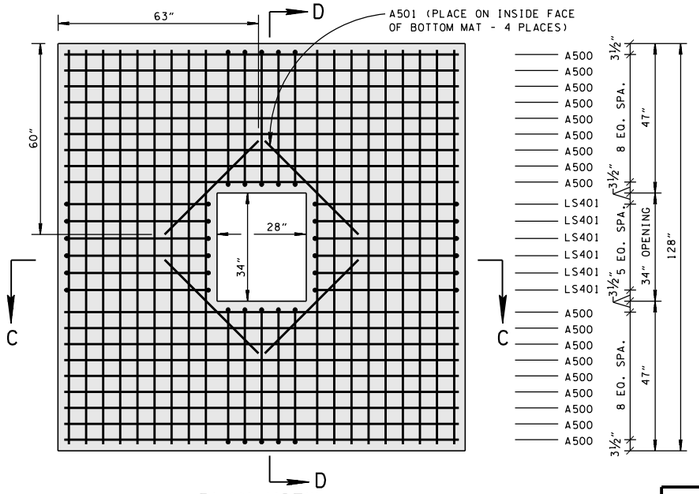
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

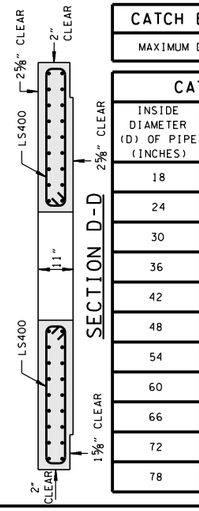
STANDARD 7' X 7' SQUARE CONCRETE NO. 25 CATCH BASIN

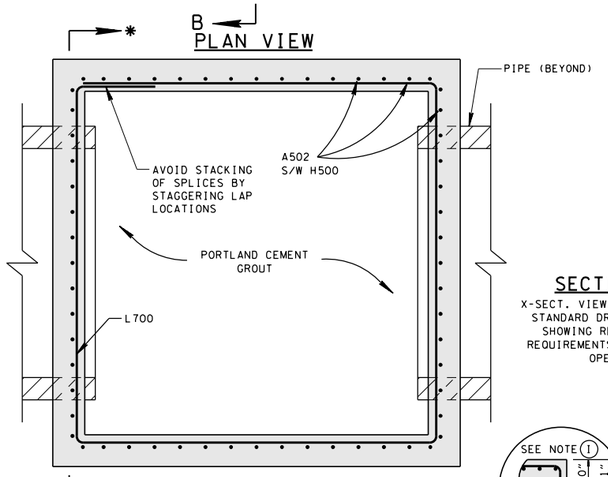
(FOR USE WITH 6" MOUNTABLE CURB)

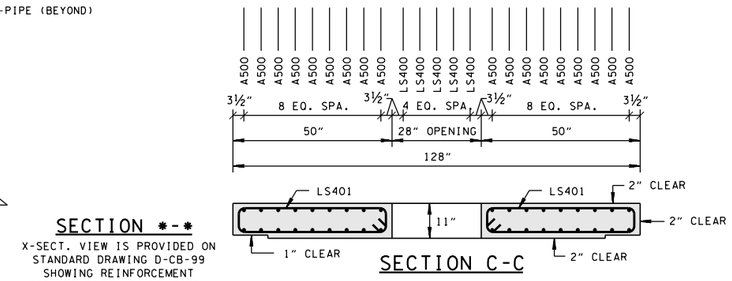
6-30-00 | D-CB-25SD





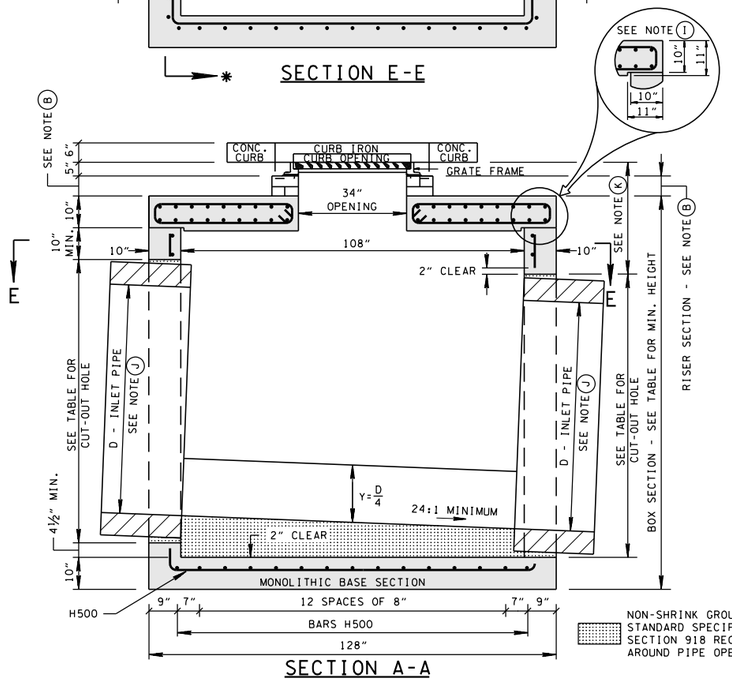




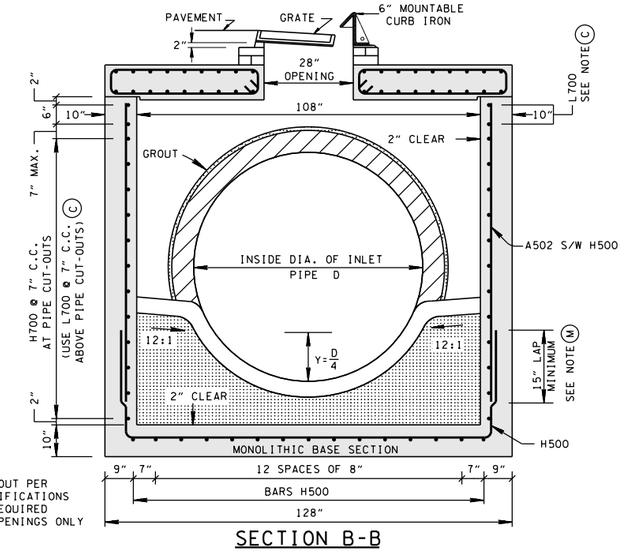


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	59½	4.25
24	3	32	66½	4.79
30	3½	39	73½	5.33
36	4	46	80½	5.88
42	4½	53	87½	6.42
48	5	60	94½	6.96
54	5½	67	101½	7.50
60	6	74	108½	8.04
66	6½	81	115½	8.58
72	7	88	122½	9.13
78	7½	95	129½	9.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 25SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 25SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 25 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

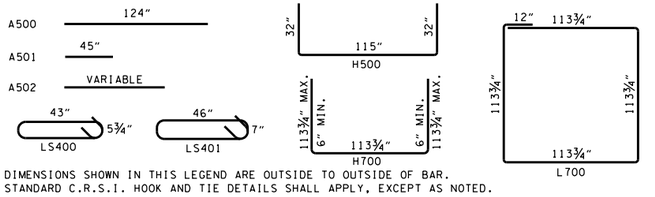
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES AND FRAMES.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.02 CATCH BASINS, TYPE 25, > 4'-8' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

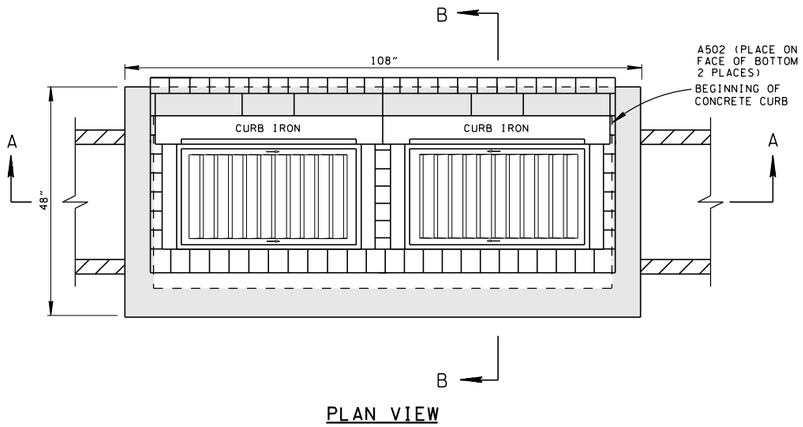
NOT TO SCALE

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

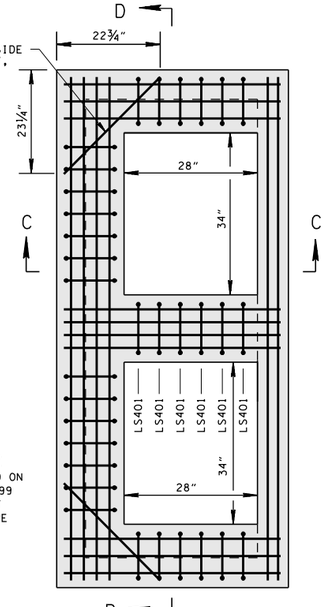
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
9' X 9' SQUARE
CONCRETE NO. 25
CATCH BASIN
(FOR USE WITH 6" MOUNTABLE CURB)

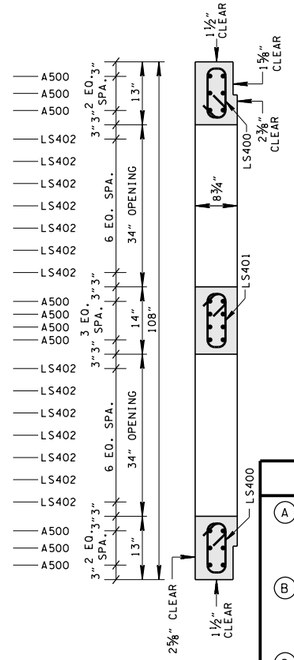
6-30-00 | D-CB-25SE



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 10.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.88
24	3	32	58	4.42
(4) 30	3½	39	65	4.96
(4) 36	4	46	72	5.50
(4) 42	4½	53	79	6.04
(4) 48	5	60	86	6.58
(4) 54	5½	67	93	7.13
(4) 60	6	74	100	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

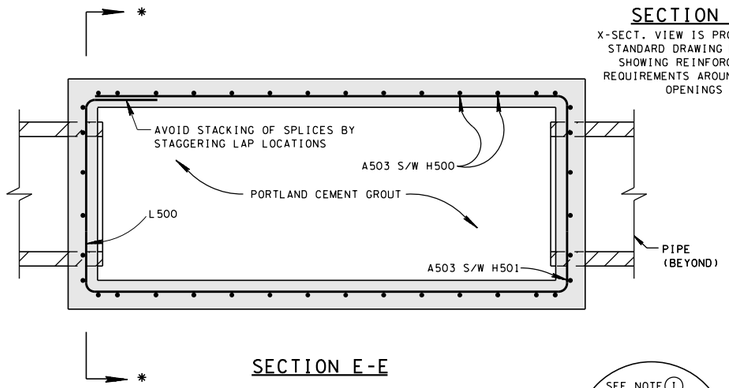
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

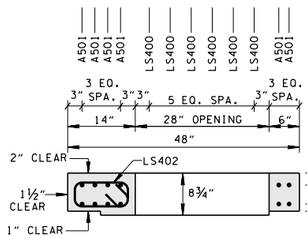
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



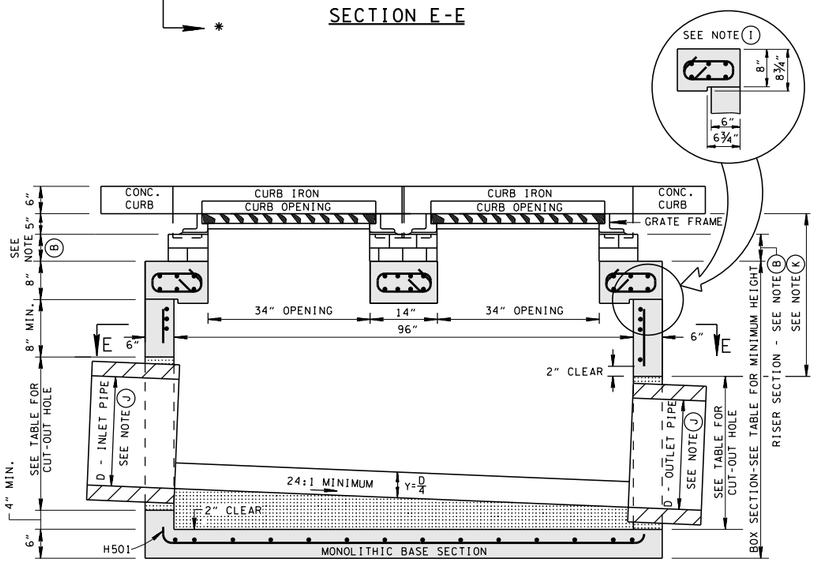
SECTION E-E

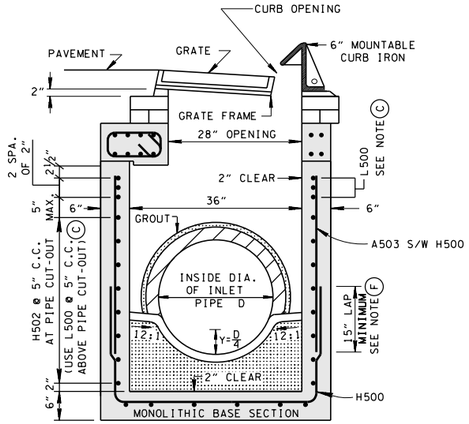
SECTION *-*

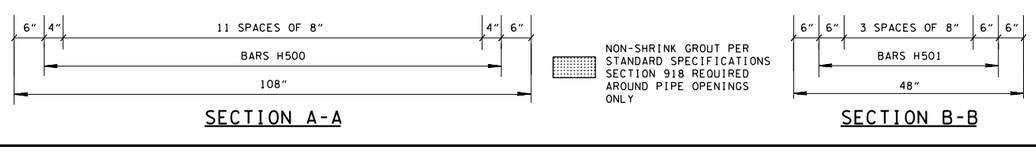
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION C-C







SECTION A-A

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 26 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TEN FEET. SEE STANDARD DRAWING D-CB-26S FOR DETAILS OF CAST-IN-PLACE NO. 26 CONCRETE CATCH BASINS AND PRECAST NO. 26 CONCRETE CATCH BASINS THAT ARE GREATER TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

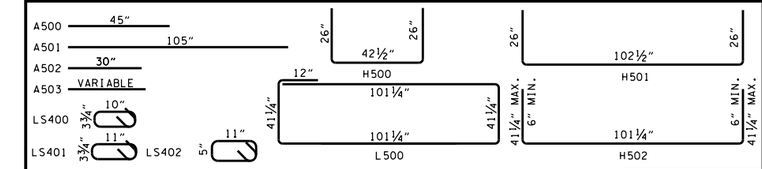
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-26.01 CATCH BASINS, TYPE 26, 0'-4' DEPTH THROUGH 611-26.03, CATCH BASINS, TYPE 26, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

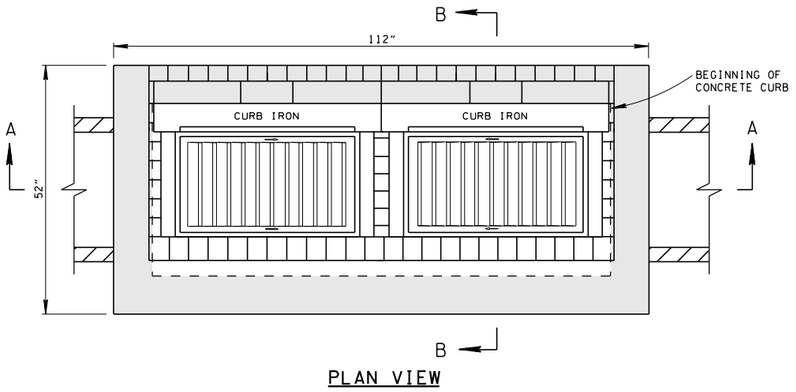
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RECTANGULAR CONCRETE NO. 26 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

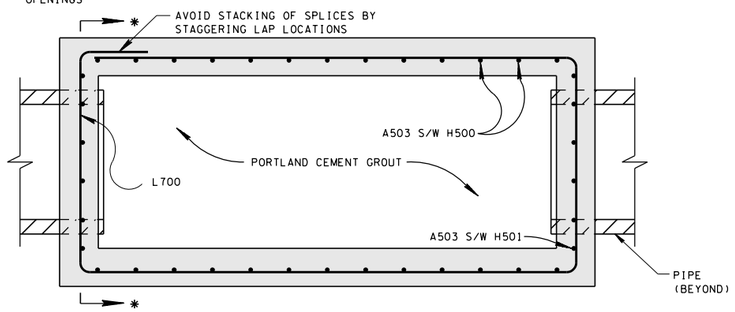
12-18-95 D-CB-26P



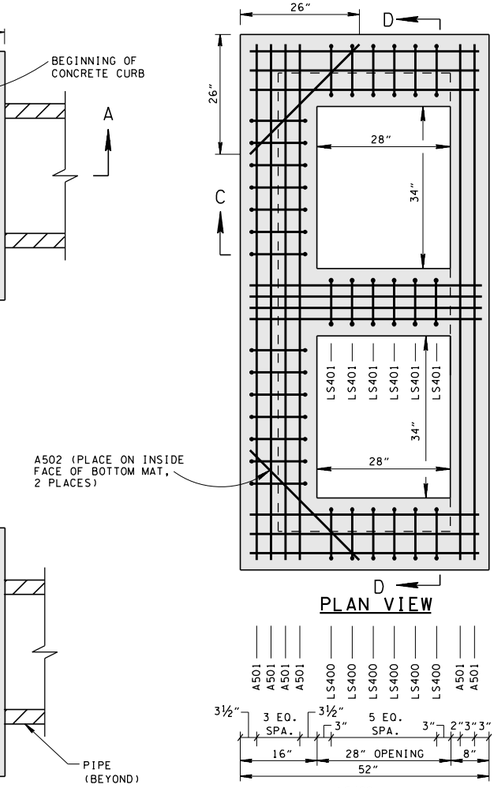
PLAN VIEW

SECTION *-*

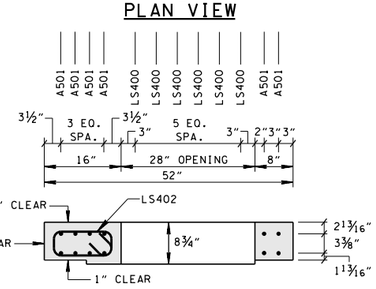
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



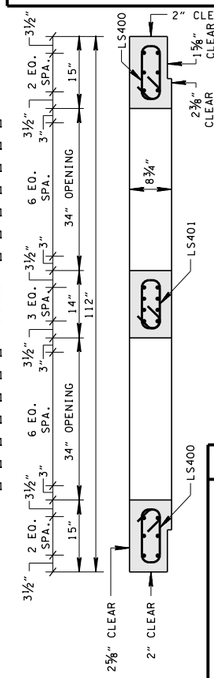
SECTION E-E



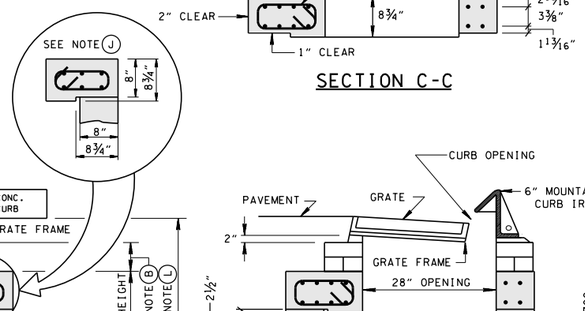
PLAN VIEW



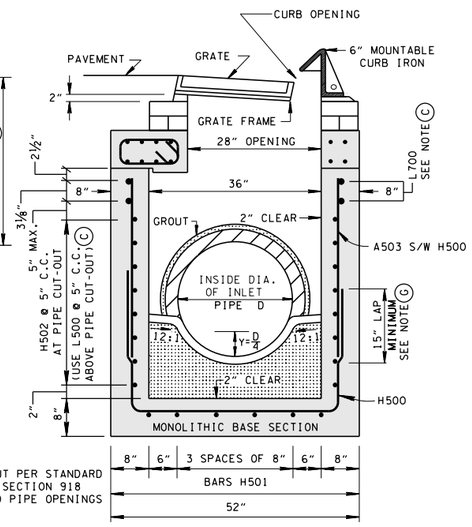
SECTION C-C



SECTION D-D



SECTION A-A



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
(4) 30	3½	39	67	4.96
(4) 36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 26 CONCRETE CATCH BASINS AND ALL PRECAST NO. 26 CONCRETE CATCH BASINS THAT ARE GREATER THAN TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-26P FOR DETAILS OF PRECAST NO. 26 CONCRETE CATCH BASINS TEN FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

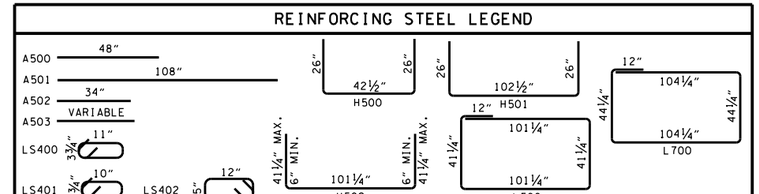
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-26.01 CATCH BASINS, TYPE 26, 0'-4' DEPTH THROUGH 611-26.05 CATCH BASINS, TYPE 26, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR CONCRETE NO. 26 CATCH BASIN

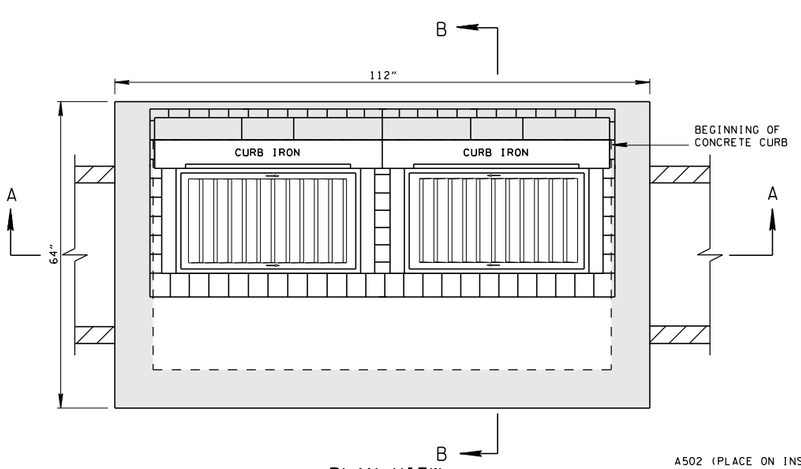
(FOR USE WITH 6" MOUNTABLE CURB)

7-29-95

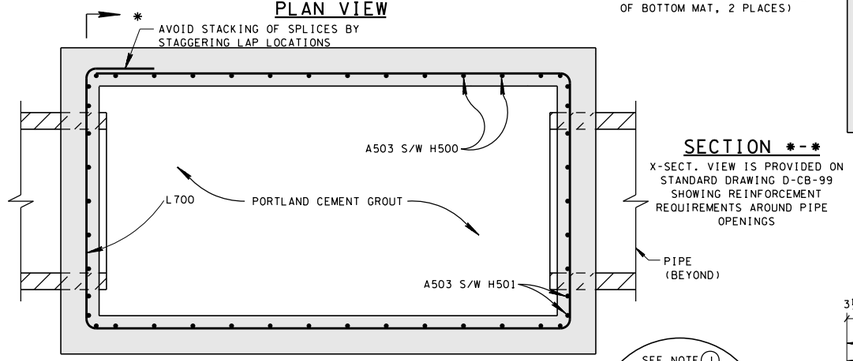
D-CB-26S

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J). ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C).

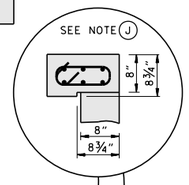
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

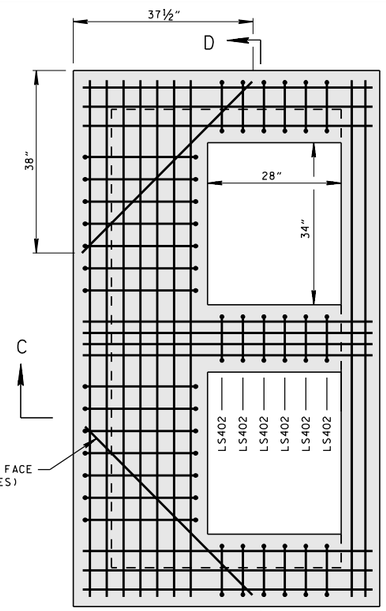


PLAN VIEW



SECTION E-E

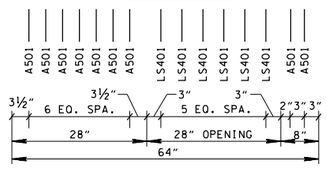




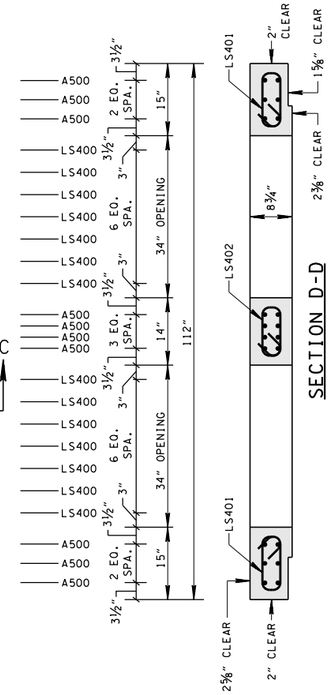
SECTION * - *

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

PLAN VIEW



SECTION C-C



GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 27 CONCRETE CATCH BASINS AND ALL PRECAST NO. 27 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

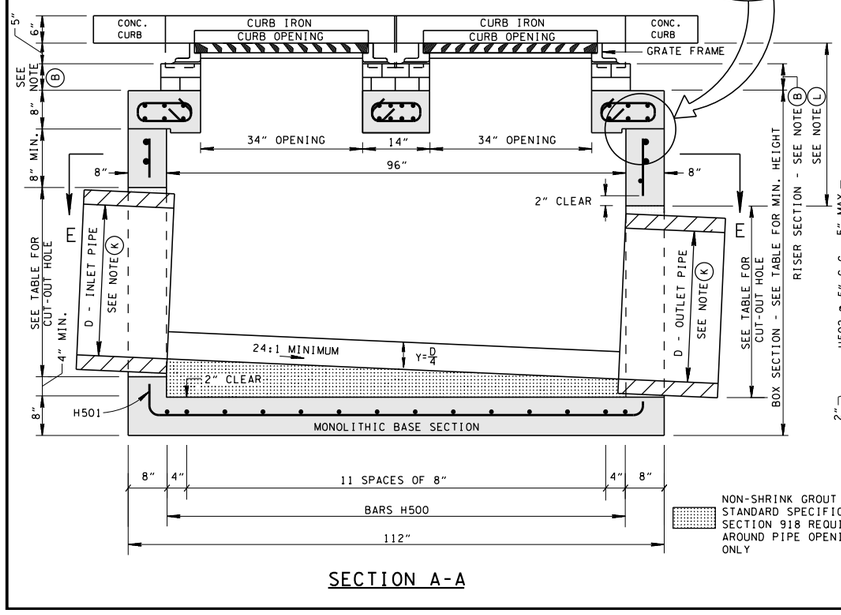
(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

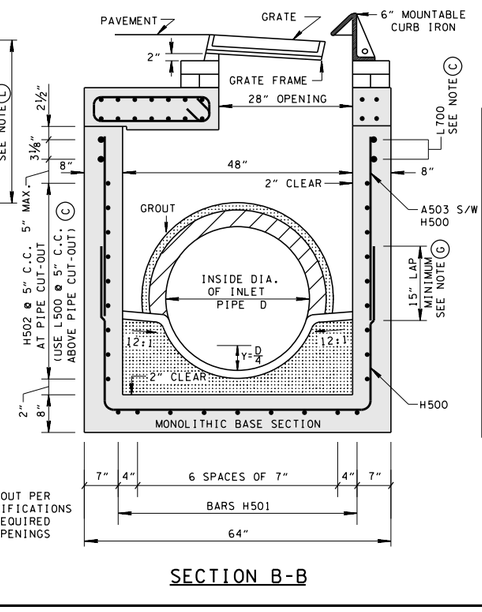
(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-27.01 CATCH BASINS, TYPE 27, 0'-4' DEPTH THROUGH 611-27.05, CATCH BASINS, TYPE 27, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.



SECTION A-A



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION B-B

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
30	3½	39	67	4.96
36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

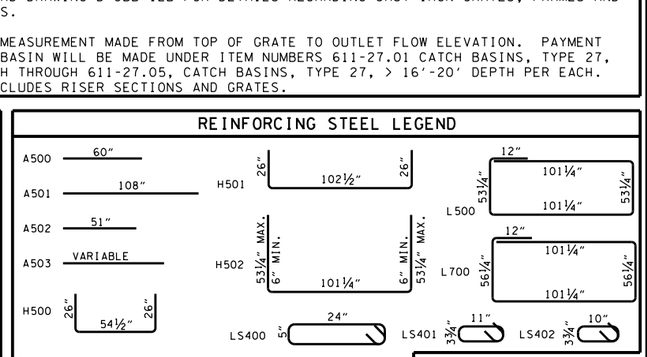
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

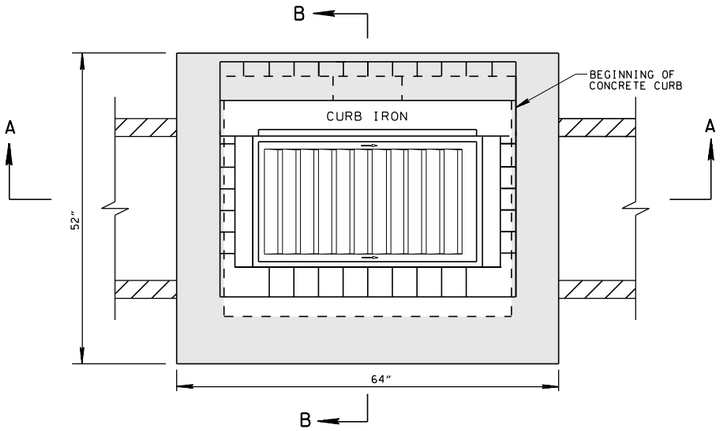
STANDARD RECTANGULAR CONCRETE NO. 27 CATCH BASIN

(FOR USE WITH 6" MOUNTABLE CURB)

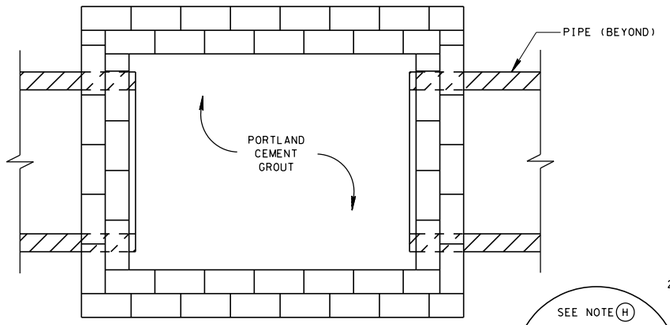
NOT TO SCALE

10-26-00

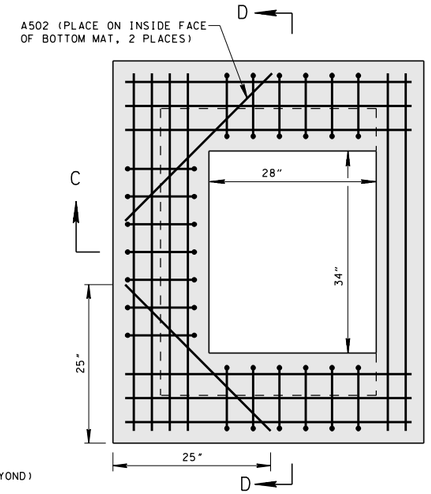
D-CB-27S



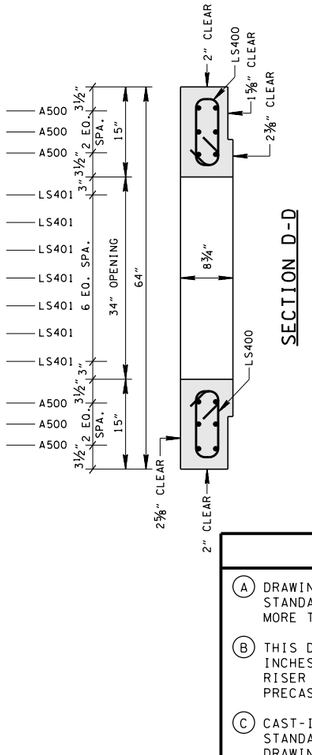
PLAN VIEW



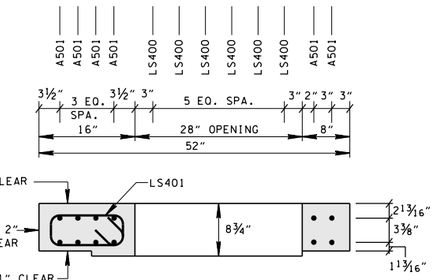
SECTION E-E

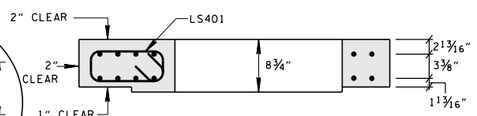


PLAN VIEW

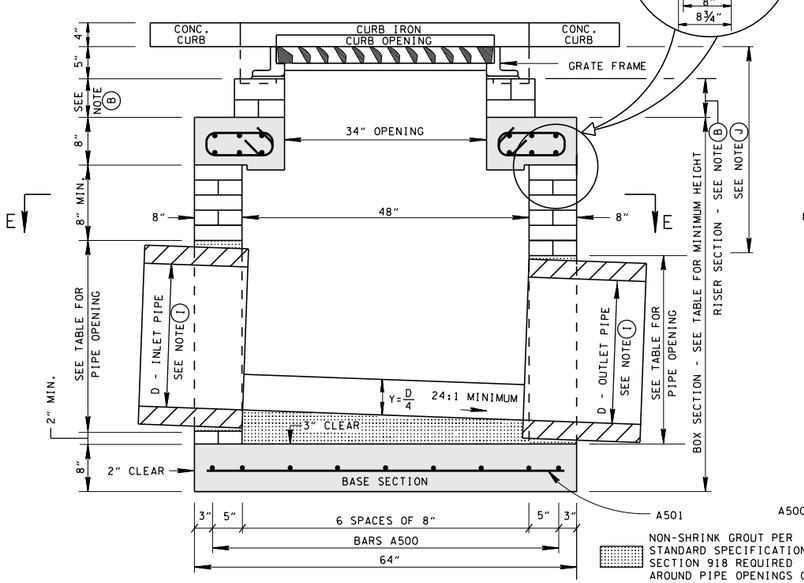


SECTION D-D

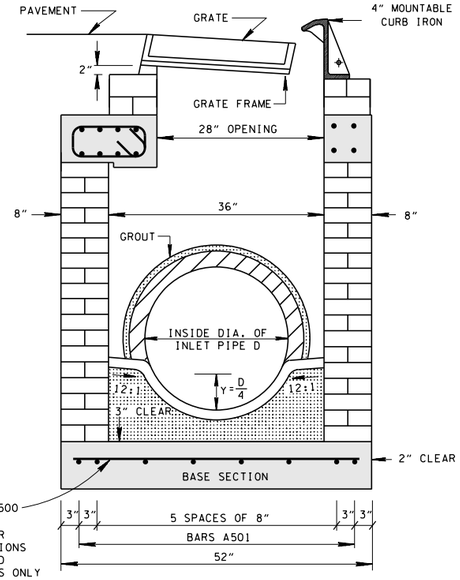




SECTION C-C



SECTION A-A



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 8.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(3) 30	3½	39	65	4.79
(3) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN TOP & BOTTOM SLABS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR NO. 28 BRICK CATCH BASINS THAT ARE EIGHT FEET AND LESS IN DEPTH. SEE STANDARD DRAWINGS D-CB-28P AND D-CB-28S FOR DETAILS OF NO. 28 CONCRETE CATCH BASINS THAT ARE MORE THAN EIGHT FEET IN DEPTH.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE USED IN BRICK CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS USED FOR LIDS AND FLOORS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

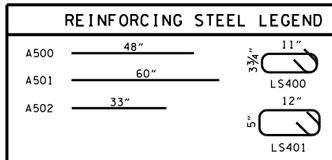
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH AND 611-28.02 CATCH BASINS, TYPE 28, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

REINFORCING STEEL LEGEND



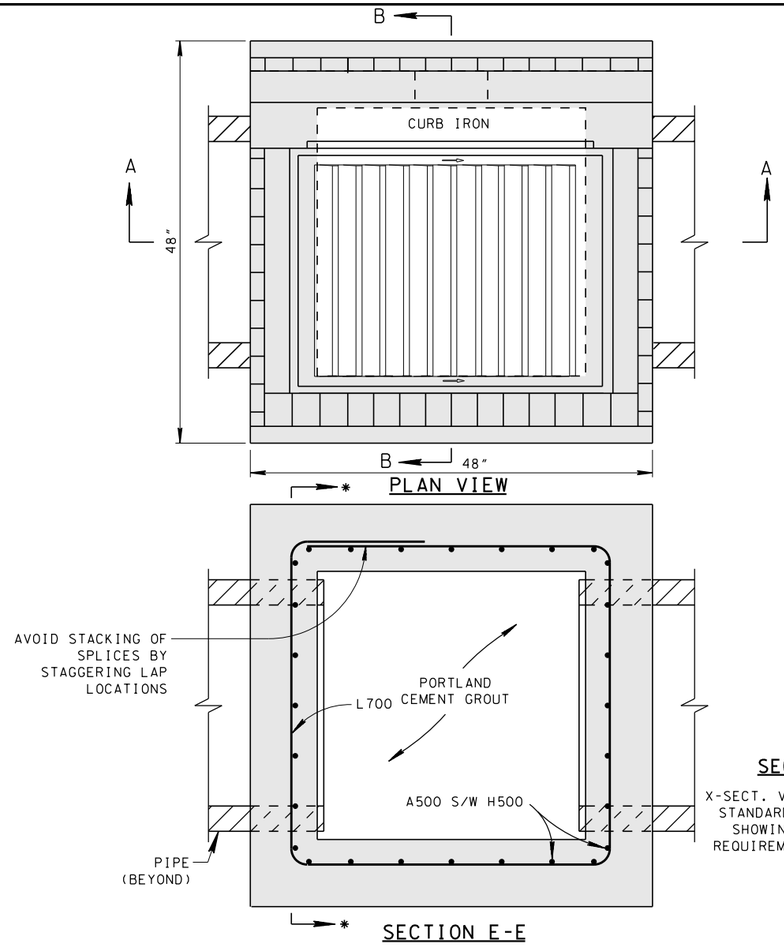
DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD RECTANGULAR BRICK NO. 28 CATCH BASIN

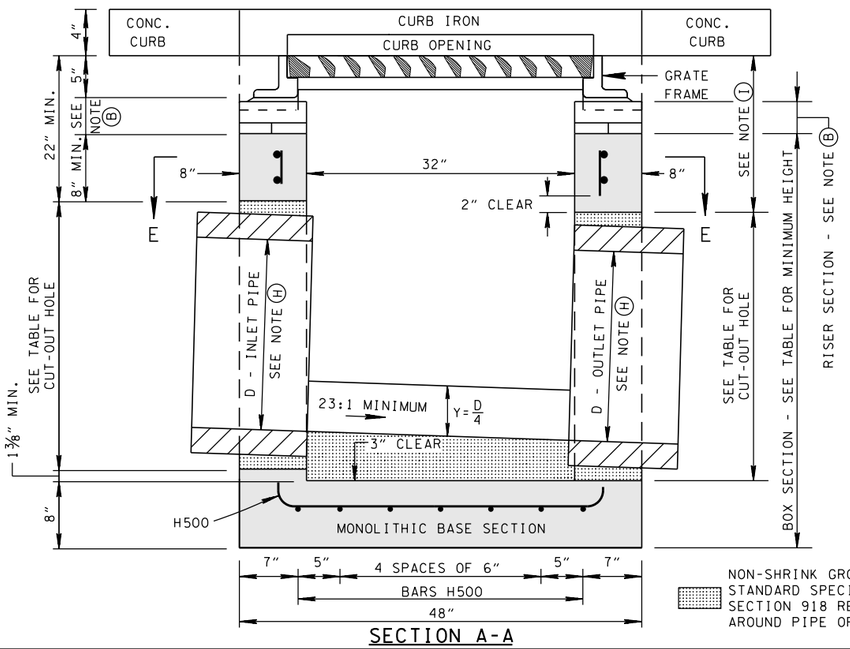
(FOR USE WITH 4" MOUNTABLE CURB)

NOT TO SCALE | 7-29-96 | D-CB-28B

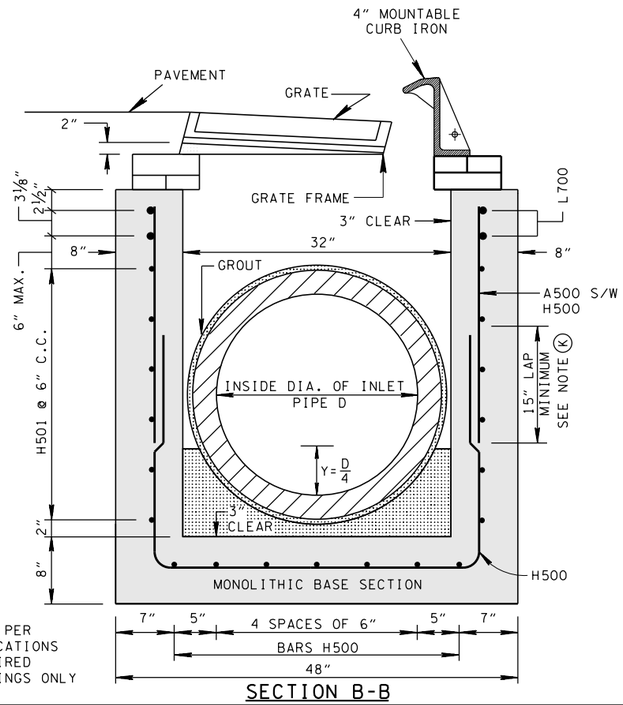


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 28LP (LOW PROFILE) AND ALL PRECAST NO. 28LP (LOW PROFILE) CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 9 INCHES AS LONG AS 22 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(I) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(J) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATE, FRAMES AND CURB INLETS.

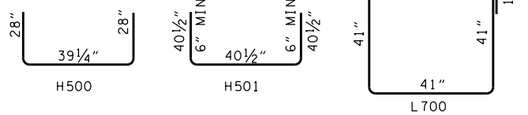
(K) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH AND 611-28.02, CATCH BASINS, TYPE 28, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

- REV.12-18-00: CHANGED DRAWING NO. FROM D-CB-28SA TO D-CB-28LP.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- REV. 7-29-04: CORRECTED GENERAL NOTE (I)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	42⅜	3.74
24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 61".

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

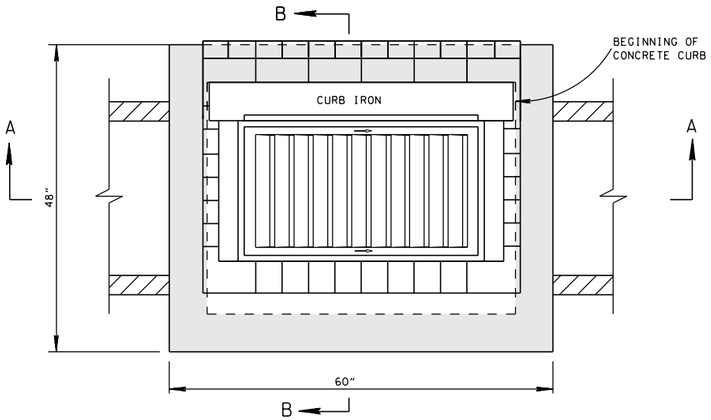
LOW PROFILE 32" x 32" SQUARE CONCRETE NO.28LP CATCH BASIN

(FOR USE WITH 4" MOUNTABLE CURB)

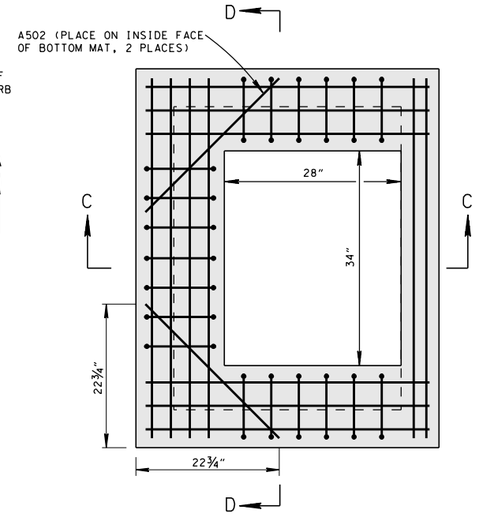
NOT TO SCALE

5-27-99

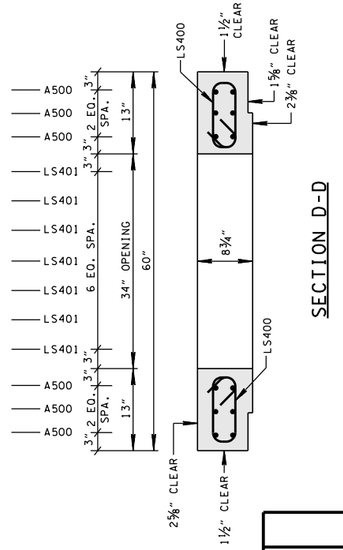
D-CB-28LP



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS

	INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	18	2½	25	49	3.71
	24	3	32	56	4.25
(4)	30	3½	39	63	4.79
(4)	36	4	46	70	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: MODIFIED DRAWING NO. D-CB-28S BY CHANGING WALL AND FLOOR THICKNESSES FROM EIGHT TO SIX INCHES FOR PRECAST CATCH BASIN BETWEEN MINIMUM DEPTH AND TWELVE FEET.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE Ⓒ CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE Ⓘ
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE Ⓑ

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 28 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-28S FOR DETAILS OF CAST-IN-PLACE NO. 28 CONCRETE CATCH BASINS AND PRECAST NO. 28 CONCRETE CATCH BASINS THAT ARE GREATER TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

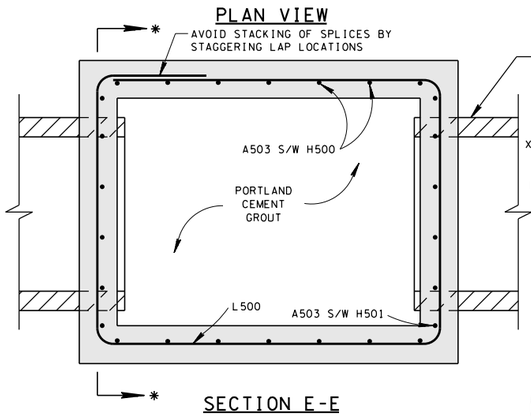
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

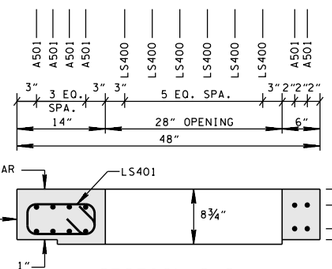
(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH THROUGH 611-28.03, CATCH BASINS, TYPE 28, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

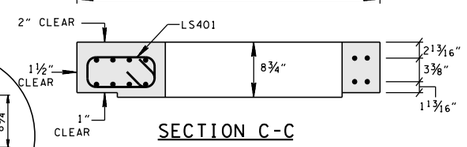


SECTION E-E

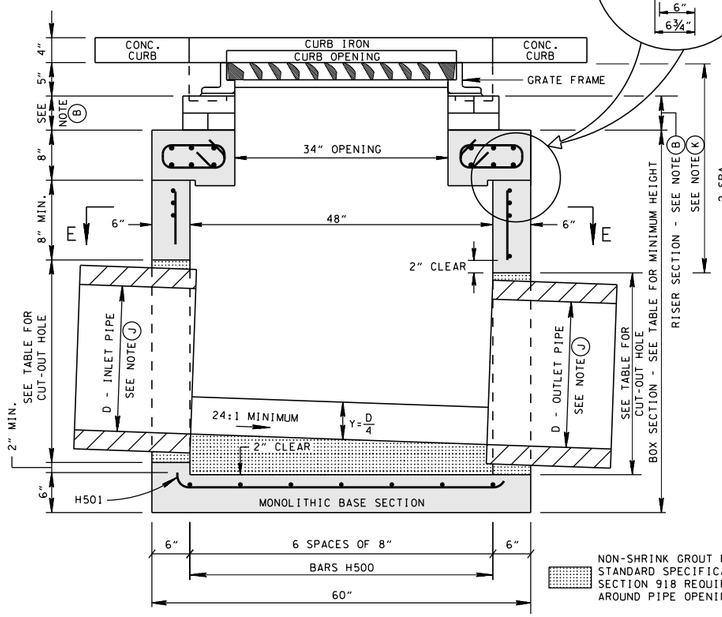
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

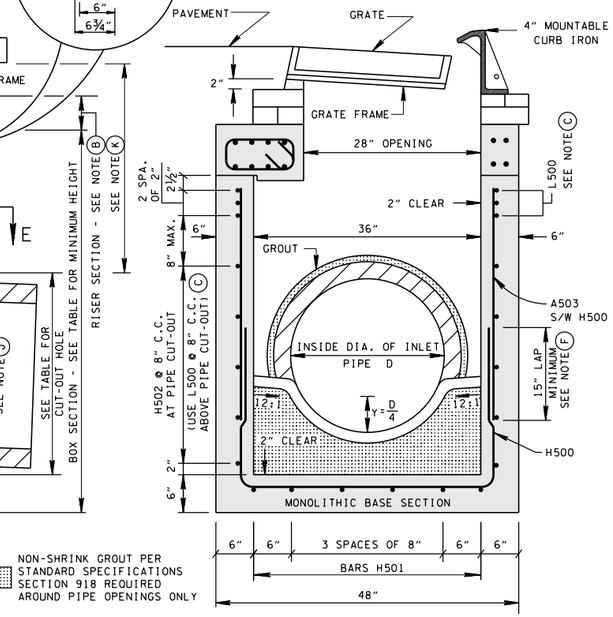




SECTION C-C



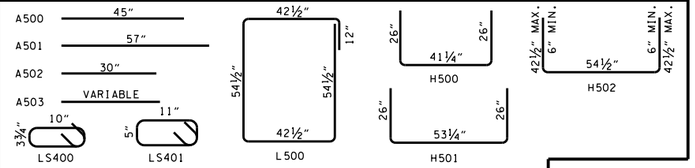
SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

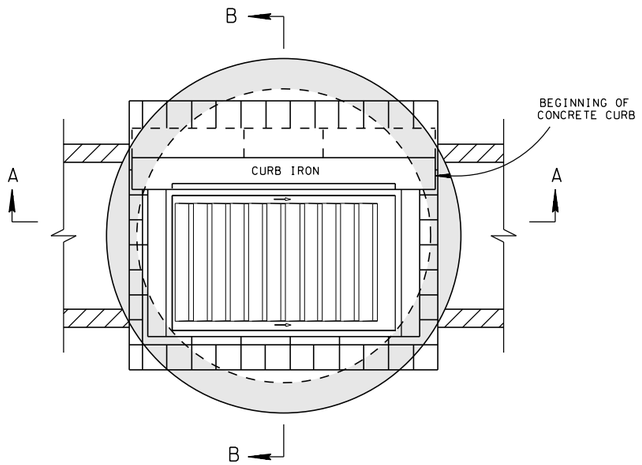
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

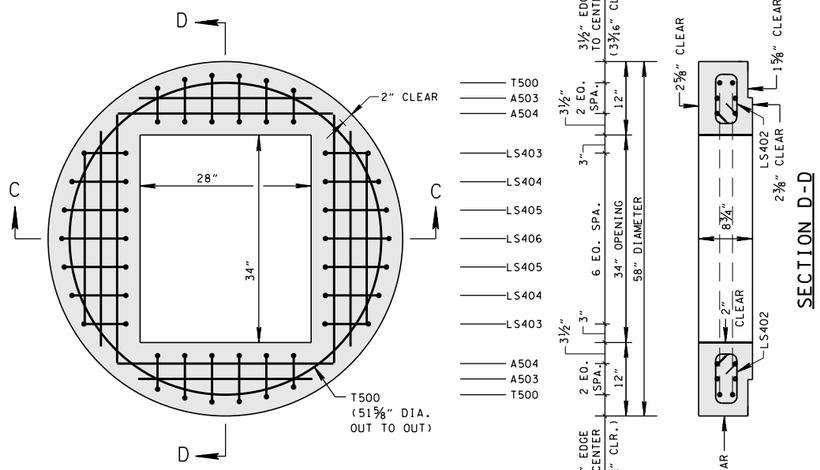
STANDARD PRECAST RECTANGULAR CONCRETE NO. 28 CATCH BASIN

(FOR USE WITH 4" MOUNTABLE CURB)

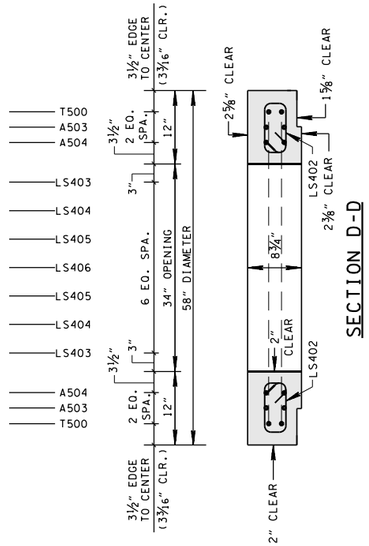
12-18-95 D-CB-28P



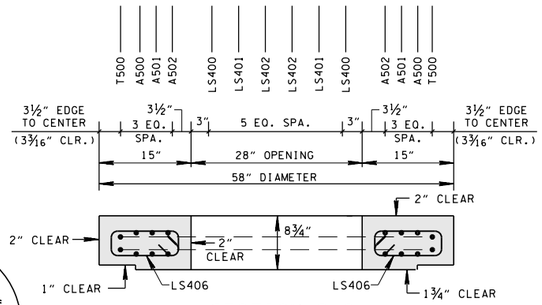
PLAN VIEW



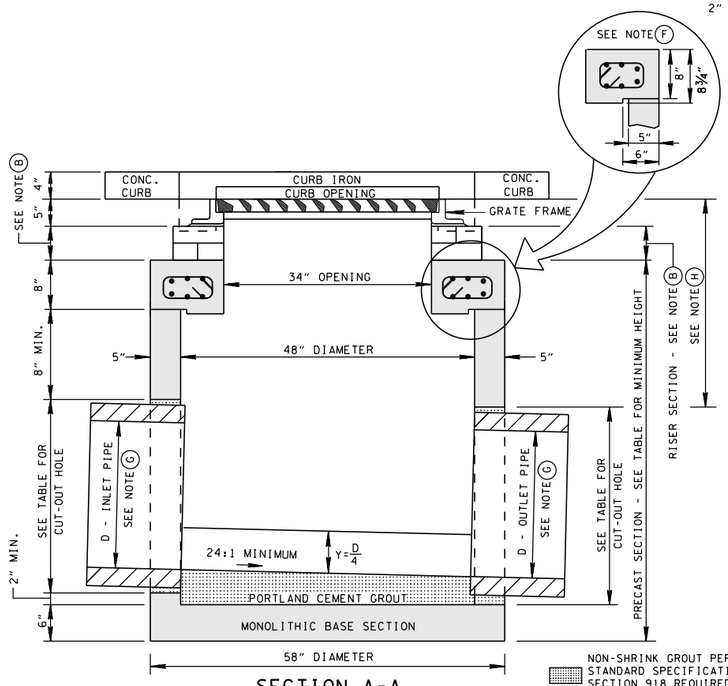
LID REINFORCING



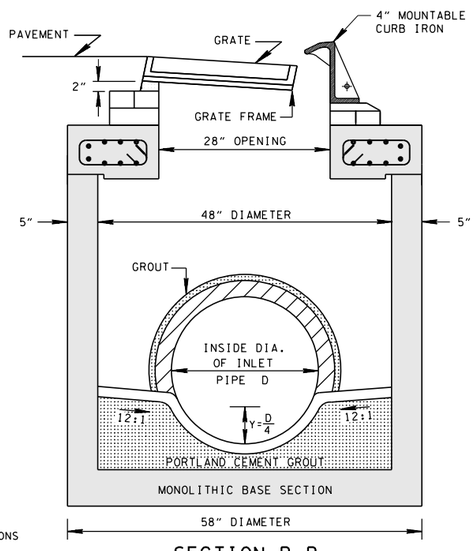
SECTION D-D



SECTION C-C



SECTION A-A



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 12-18-95: MODIFIED DRAWING NO. D-CB-25RA TO ACCEPT 4" MOUNTABLE CURB BACK.
- ☐ REV. 2-14-96: CHANGED SHEET NAME.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (F) CHANGED LABEL OF LAST FOUR GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 1-19-99: CHANGED MINMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 12-18-99: MODIFIED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 5-27-01: GENERAL NOTE (I) CHANGED PAY ITEMS IN ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-28RB FOR DETAILS REGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH THROUGH 611-28.05 CATCH BASINS, TYPE 28, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

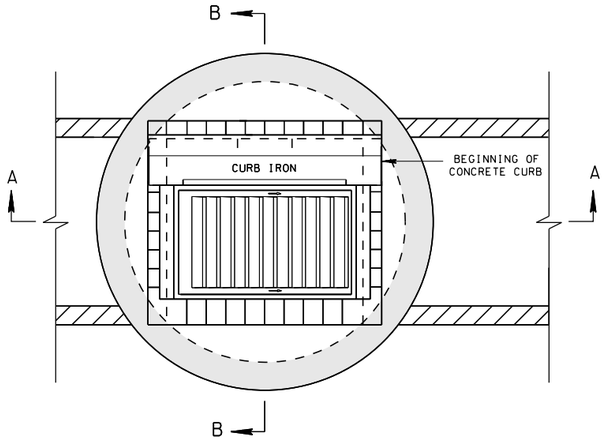
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST 48" CIRCULAR NO. 28 CATCH BASIN

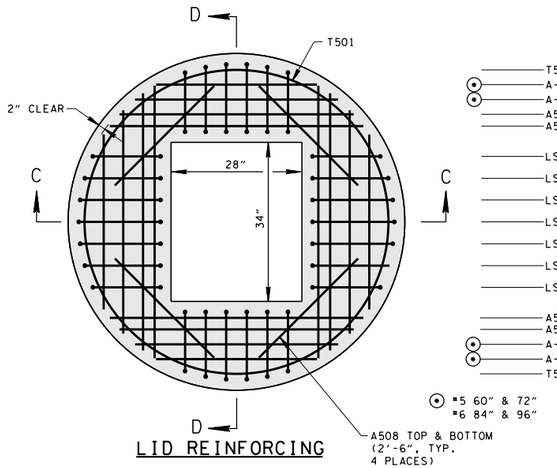
(FOR USE WITH 4" MOUNTABLE CURB)

NOT TO SCALE | 12-18-95 | D-CB-28RA

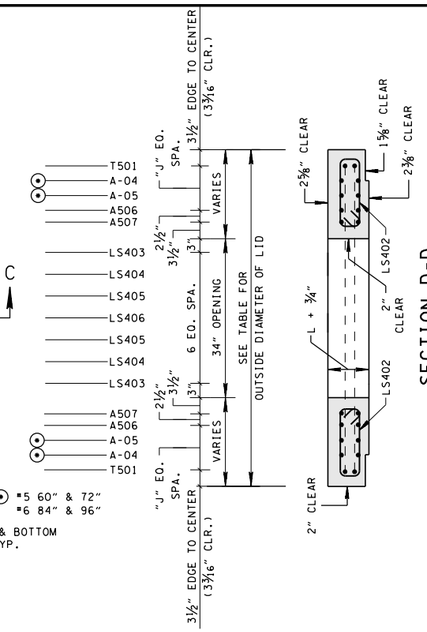
- REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I). ADDED CATCH BASIN MAXIMUM DEPTH NOTE. CHANGED REINFORCING STEEL IN LID.
- REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



PLAN VIEW



LID REINFORCING



"5 60" & 72"
"6 84" & 96"

SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
			60"	72"	84"	96"	60"	72"	84"	96"
18	2½	25	51½	53	57½	59	3.75	3.88	4.25	4.38
24	3	32	58½	60	64½	66	4.29	4.42	4.79	4.92
30	3½	39	65½	67	71½	73	4.83	4.96	5.33	5.46
36	4	46	72½	74	78½	80	5.38	5.50	5.88	6.00
42	4½	53	79½	81	85½	87	5.92	6.04	6.42	6.54
48	5	60	86½	88	92½	94	6.46	6.58	6.96	7.08
54	5½	67	93½	95	99½	101	7.00	7.13	7.50	7.63
60	6	74	100½	102	106½	108	7.54	7.67	8.04	8.17
66	6½	81	107½	109	113½	115	8.08	8.21	8.58	8.71

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

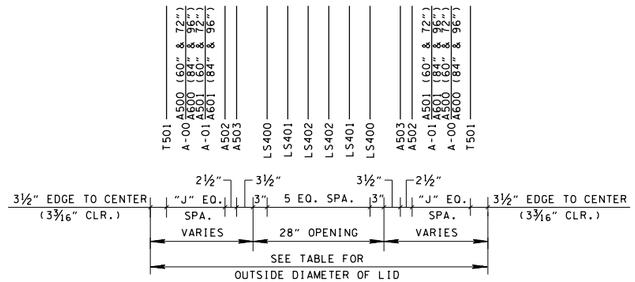
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

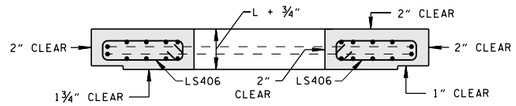
VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID

INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4
84	100	5
96	114	6

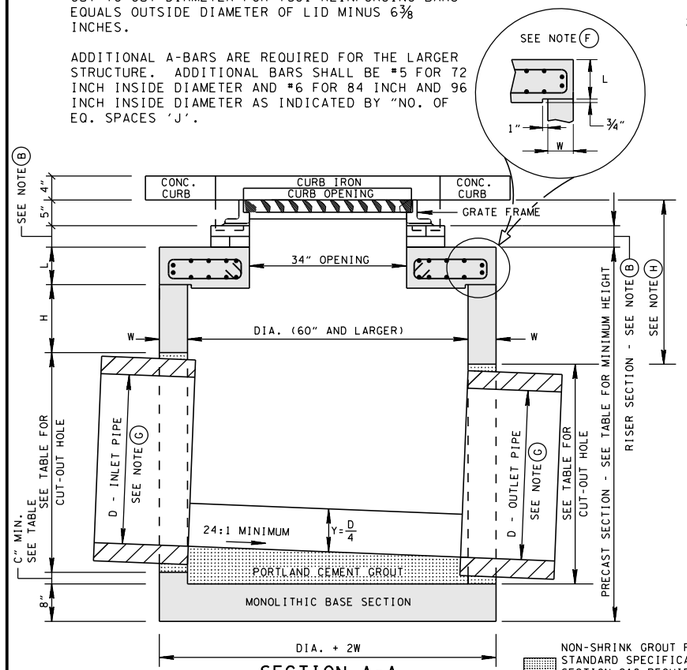
OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE. ADDITIONAL BARS SHALL BE #5 FOR 72 INCH INSIDE DIAMETER AND #6 FOR 84 INCH AND 96 INCH INSIDE DIAMETER AS INDICATED BY "NO. OF EQ. SPACES 'J'.



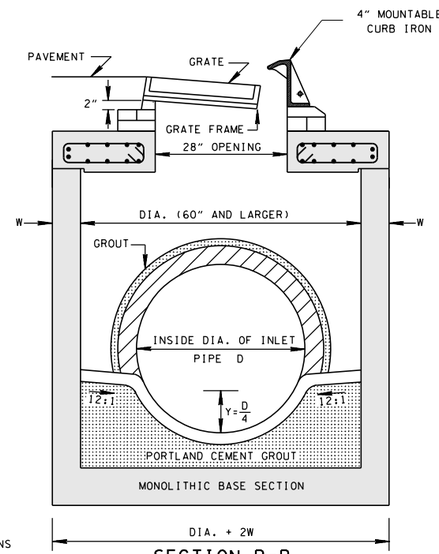


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCHES (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 26 INCHES FOR 84 INCH INSIDE DIAMTER CATCH BASIN) OR 27 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCH DEPTH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 26 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) SEE STANDARD DRAWING D-CB-28RA FOR DETAILS REGARDING 48" CIRCULAR NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB).

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH THROUGH 611-28.07, CATCH BASINS, TYPE 28, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-28.08, CATCH BASINS, TYPE 28, ____ '- ____' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

CATCH BASIN DIMENSIONS

INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION	
						C (INCHES)	H (INCHES)
60	6	8	72	36	24	2.5	8
72	7	9	86	48	30	3.0	8
84	8	9	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

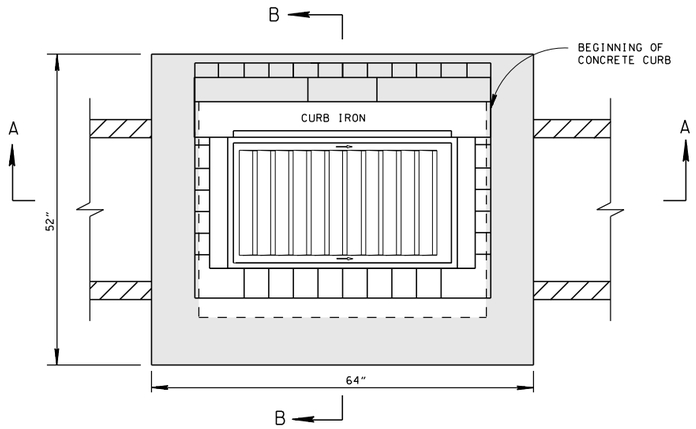
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

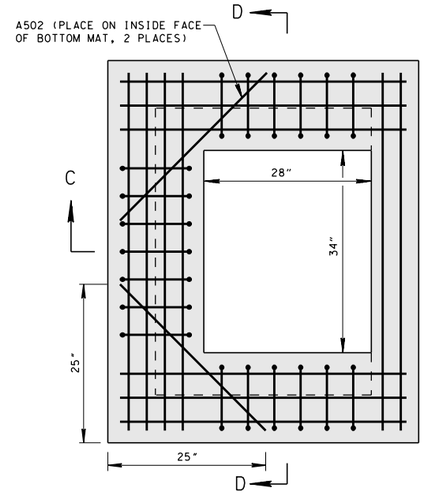
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 28 CATCH BASIN
(FOR USE WITH 4" MOUNTABLE CURB)

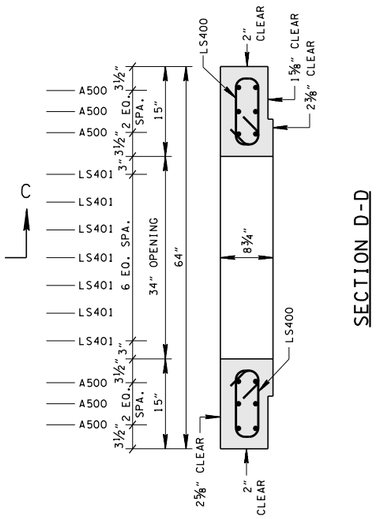
12-18-95 | D-CB-28RB



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

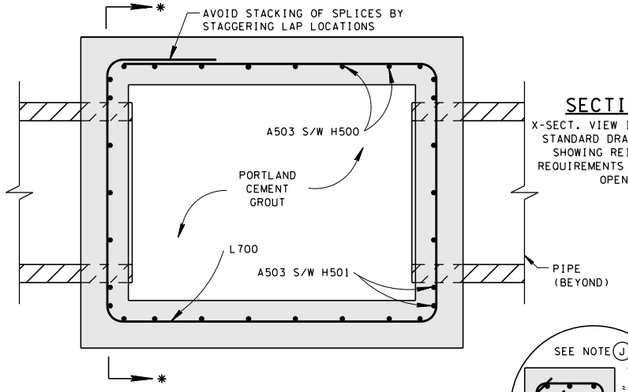
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

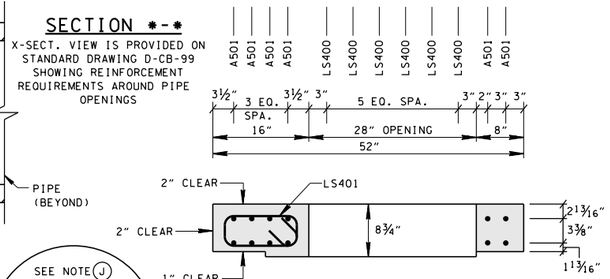
(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



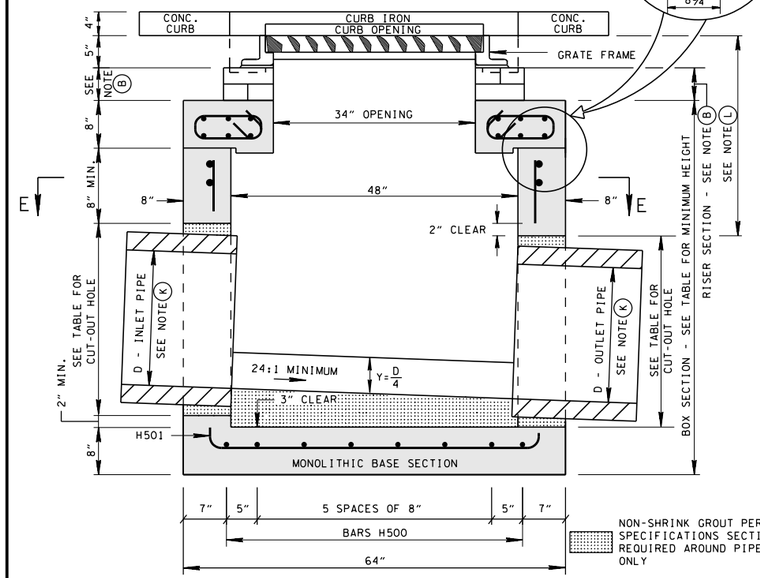
SECTION E-E



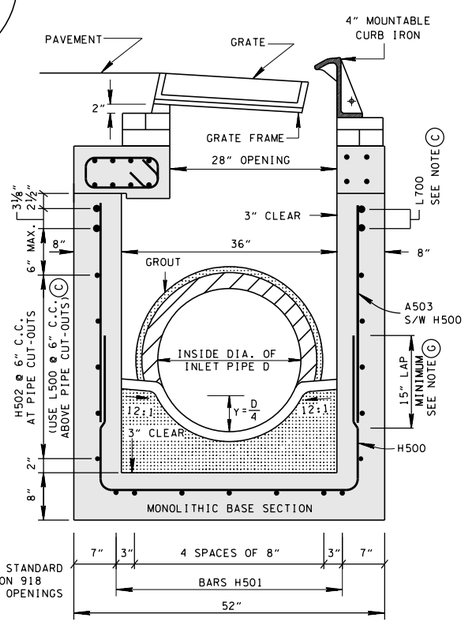
SECTION C-C

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION A-A



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 28 CONCRETE CATCH BASINS AND ALL PRECAST NO. 28 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-28P FOR DETAILS OF PRECAST NO. 28 CONCRETE CATCH BASINS TWELVE FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

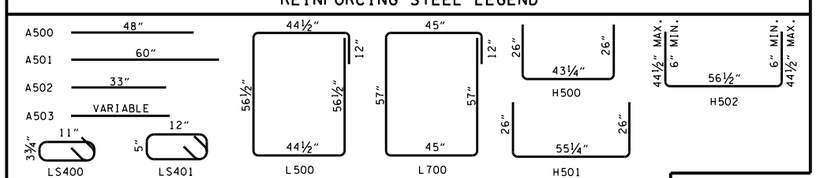
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, TYPE 28, 0'-4' DEPTH THROUGH 611-28.05 CATCH BASINS, TYPE 28, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

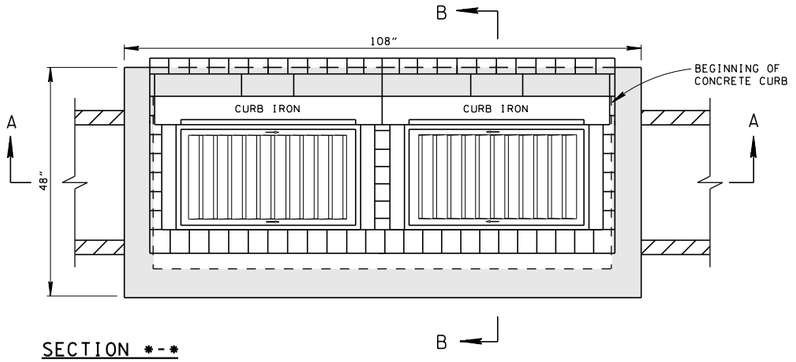
STANDARD RECTANGULAR CONCRETE NO. 28 CATCH BASIN

(FOR USE WITH 4" MOUNTABLE CURB)

NOT TO SCALE

5-27-95

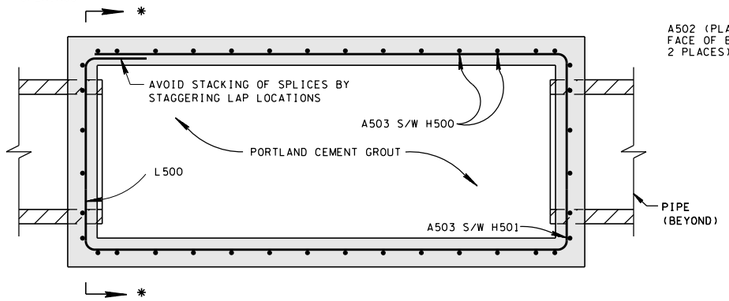
D-CB-28S



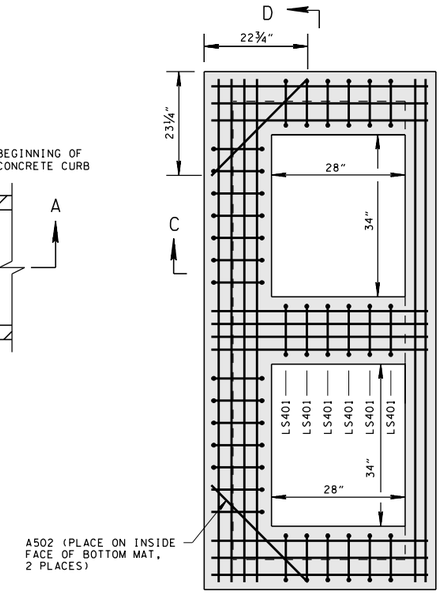
PLAN VIEW

SECTION *-*

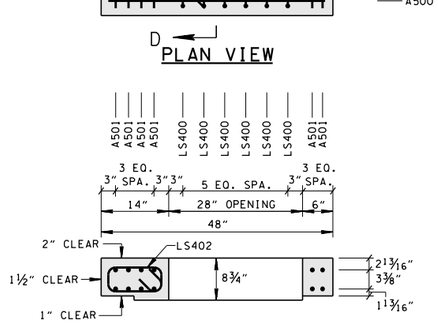
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



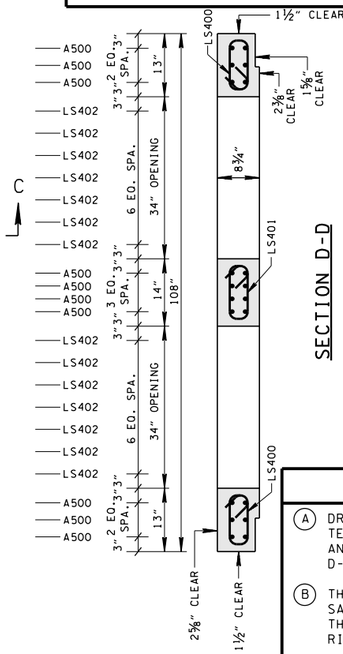
SECTION E-E



PLAN VIEW



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 10.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.88
24	3	32	58	4.42
(4) 30	3½	39	65	4.96
(4) 36	4	46	72	5.50
(4) 42	4½	53	79	6.04
(4) 48	5	60	86	6.58
(4) 54	5½	67	93	7.13
(4) 60	6	74	100	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: MODIFIED DRAWING NO. D-CB-29S BY CHANGING WALL AND FLOOR THICKNESSES FROM EIGHT TO SIX INCHES FOR PRECAST CATCH BASIN BETWEEN MINIMUM DEPTH AND TEN FEET.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (C) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 29 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TEN FEET. SEE STANDARD DRAWING D-CB-29S FOR DETAILS OF CAST-IN-PLACE NO. 29 CONCRETE CATCH BASINS AND PRECAST NO. 29 CONCRETE CATCH BASINS THAT ARE GREATER TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

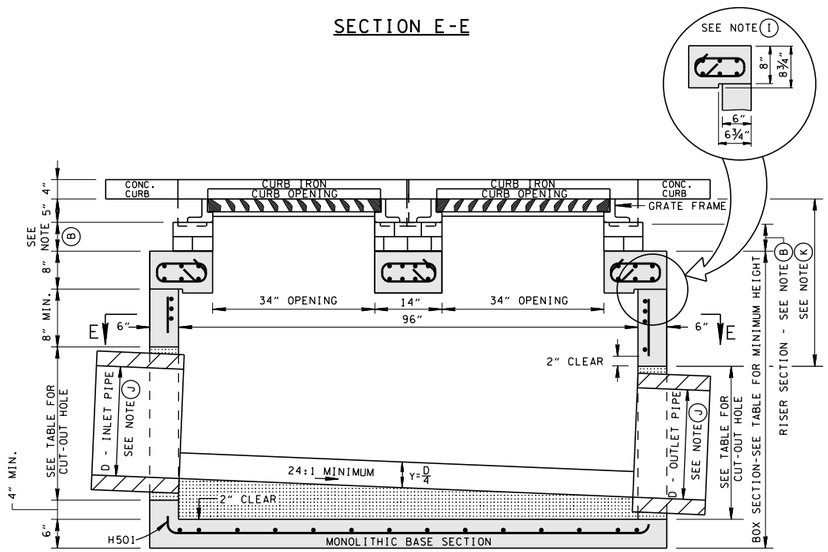
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

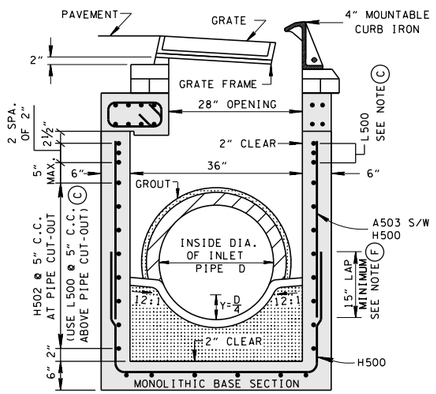
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

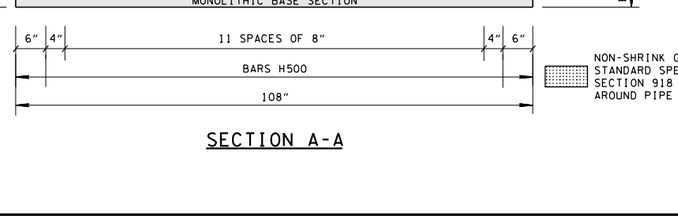
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-29.01 CATCH BASINS, TYPE 29, 0'-4' DEPTH THROUGH 611-29.03, CATCH BASINS, TYPE 29, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

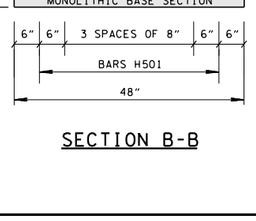






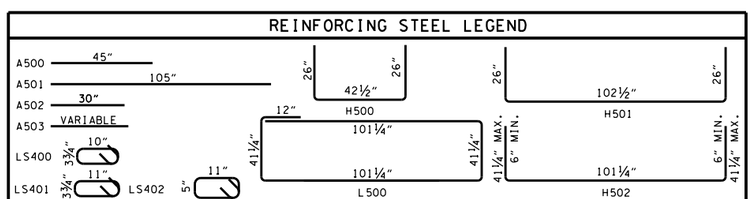
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

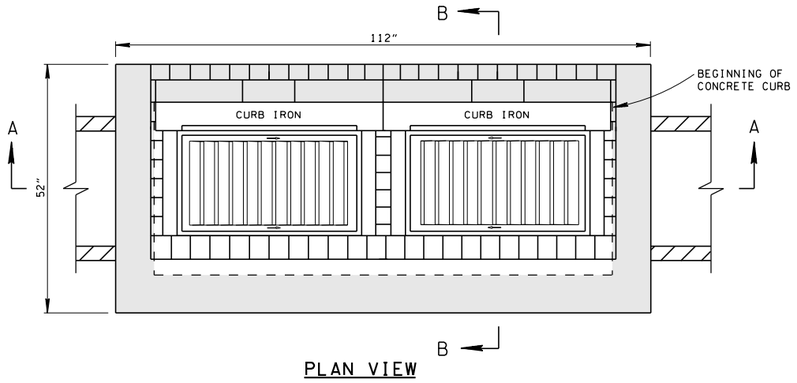
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RECTANGULAR CONCRETE NO. 29 CATCH BASIN
(FOR USE WITH 4" MOUNTABLE CURB)

12-18-95 D-CB-29P

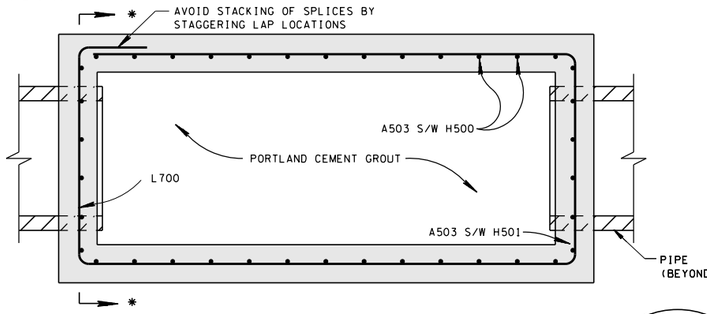


PLAN VIEW

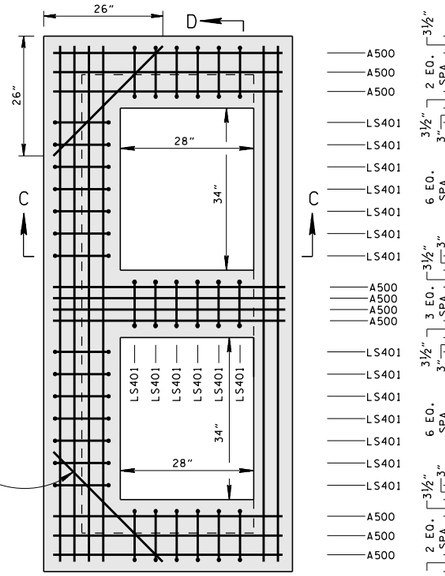
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

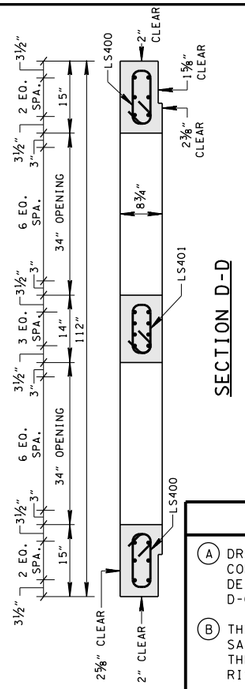
CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00′.



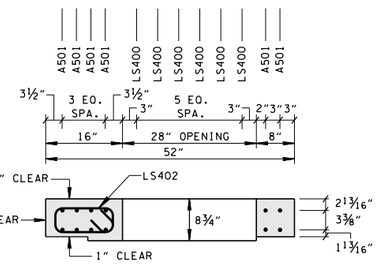
SECTION E-E



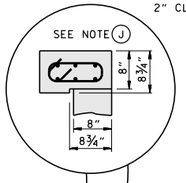
PLAN VIEW

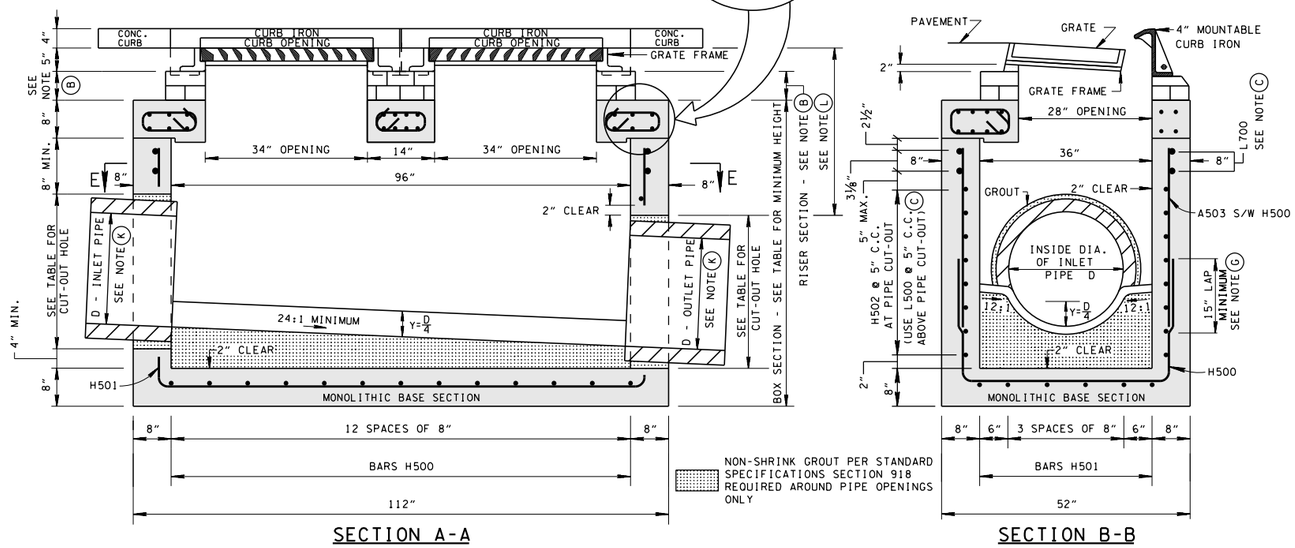


SECTION D-D



SECTION C-C





SECTION A-A

SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
(4) 30	3½	39	67	4.96
(4) 36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 29 CONCRETE CATCH BASINS AND ALL PRECAST NO. 29 CONCRETE CATCH BASINS THAT ARE GREATER THAN TEN FEET IN DEPTH. SEE STANDARD DRAWING D-CB-29P FOR DETAILS OF PRECAST NO. 29 CONCRETE CATCH BASINS TEN FEET AND LESS IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

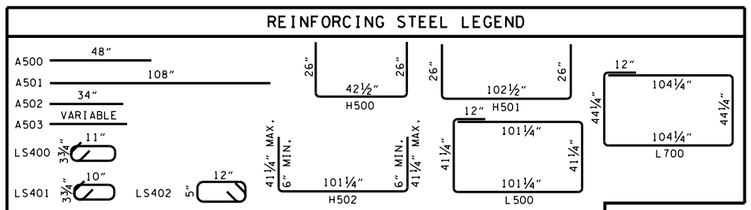
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-29.01 CATCH BASINS, TYPE 29, 0′-4′ DEPTH THROUGH 611-29.05 CATCH BASINS, TYPE 29, > 16′-20′ DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

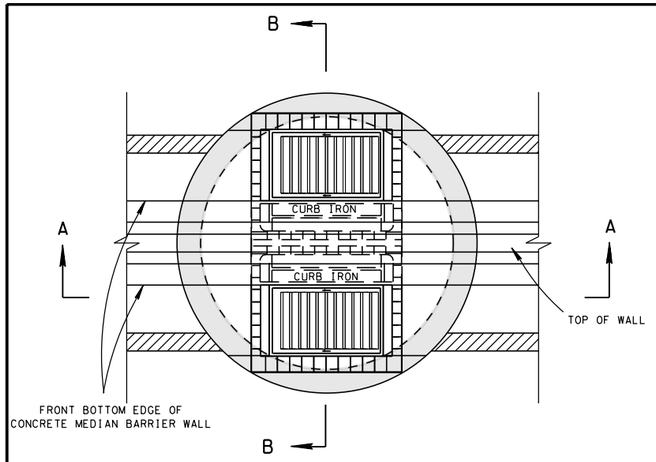
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

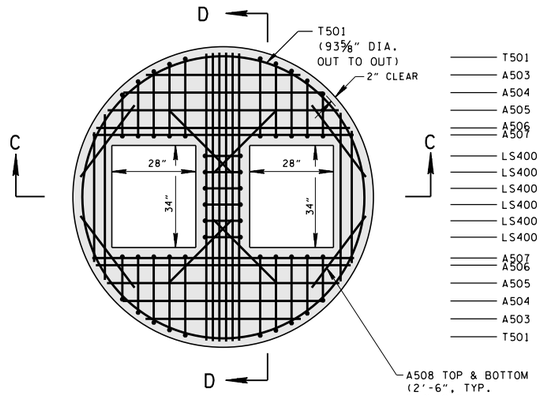
STANDARD RECTANGULAR CONCRETE NO. 29 CATCH BASIN

(FOR USE WITH 4" MOUNTABLE CURB)

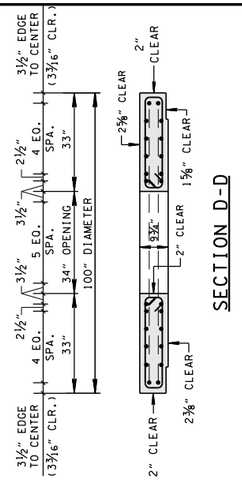
12-18-95 D-CB-29S



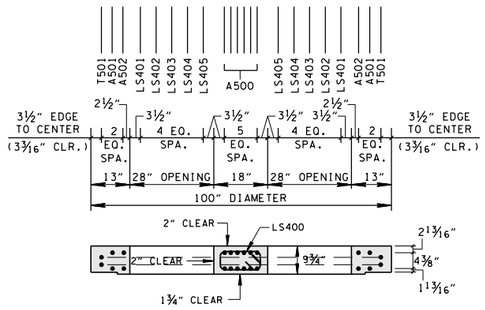
PLAN VIEW



LID REINFORCING



SECTION D-D



SECTION C-C

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMESIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	
18	2½	25	62½	4.25
24	3	32	69½	4.79
30	3½	39	76½	5.33
36	4	46	83½	5.88
42	4½	53	90½	6.42
48	5	60	97½	6.96
54	5½	67	104½	7.50
60	6	74	111½	8.04

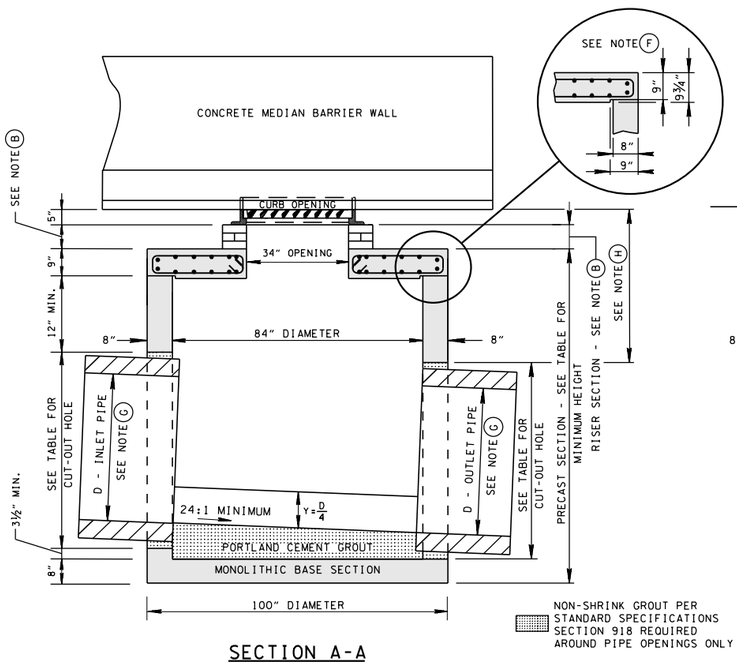
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

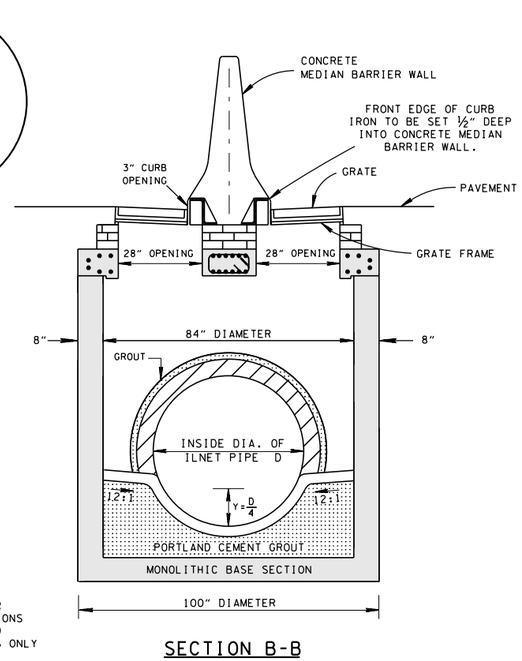
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (F) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- ☐ REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 9-5-00: IN PLAN VIEW MOVED LOCATION OF A-A TO MATCH SECTIONAL VIEW.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 10-26-03: ADDED DIMENSION TO SECTION A-A.

  REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION A-A



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-31.02 CATCH BASINS, TYPE 31, > 4'-8' DEPTH THROUGH 611-31.07, CATCH BASINS, TYPE 31, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-31.08, CATCH BASINS, TYPE 31, ___ '- ___ ' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

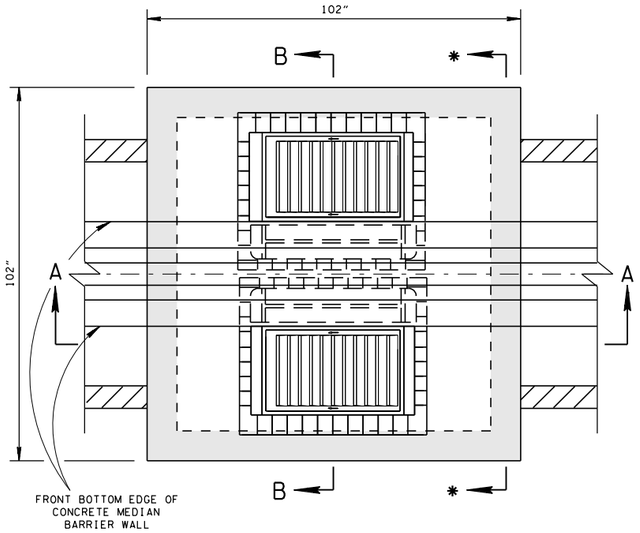
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 31 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

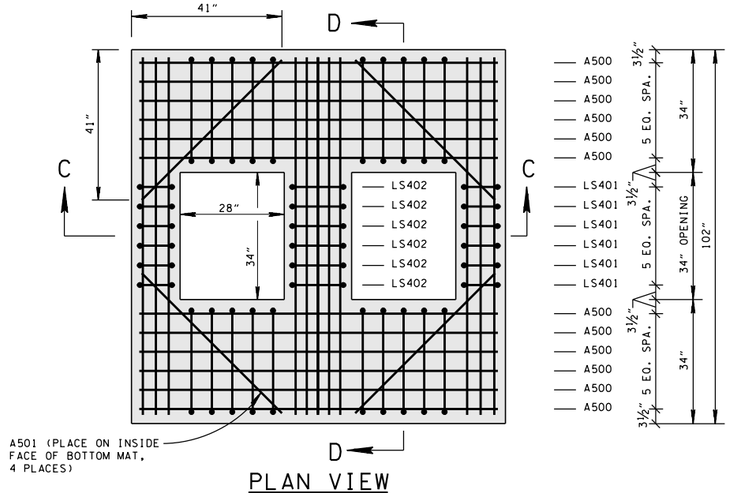
NOT TO SCALE | 7-31-86 | D-CB-31R



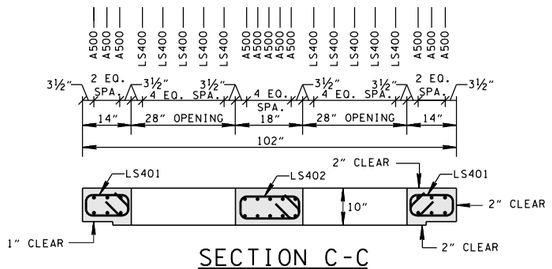
PLAN VIEW

SECTION *-*

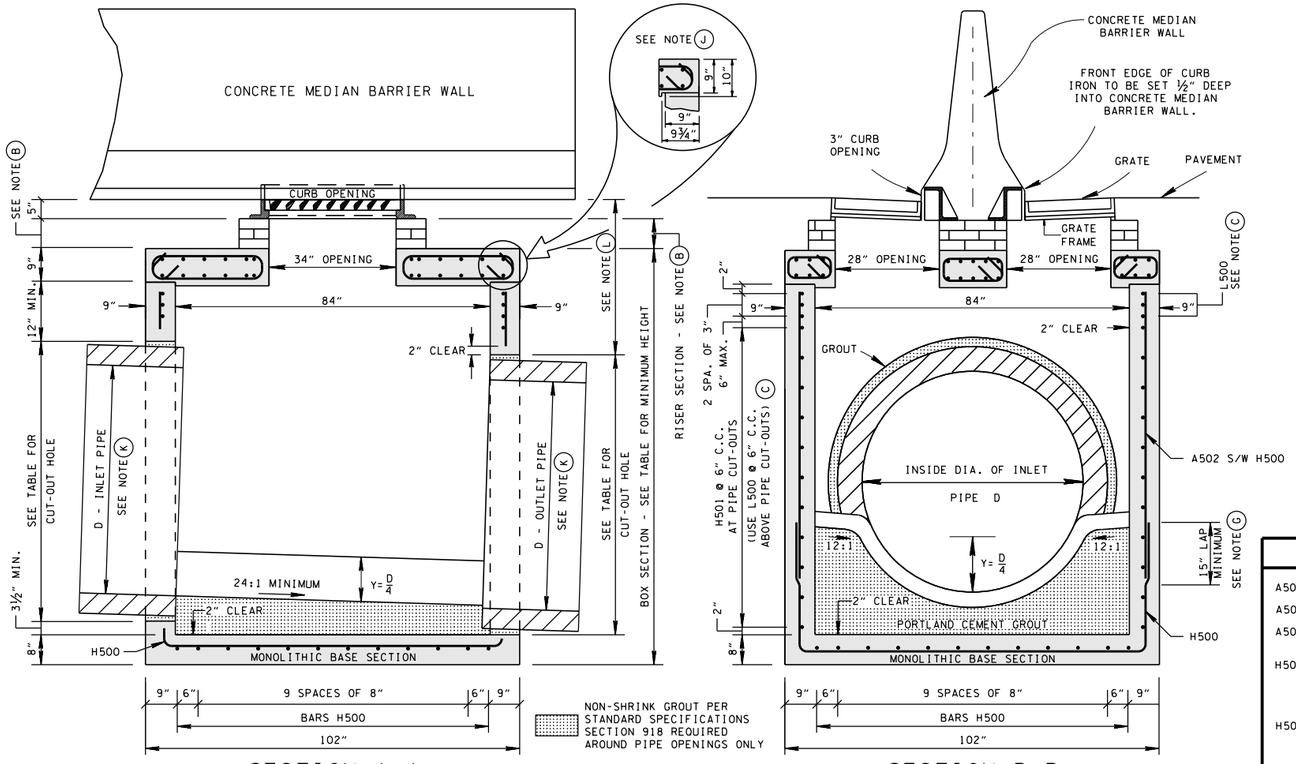
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW

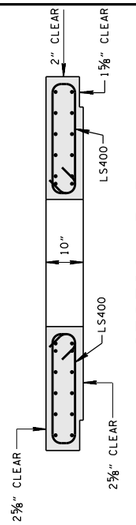


SECTION C-C



SECTION A-A

SECTION B-B



SECTION D-D

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	57½	4.25
24	3	32	64½	4.79
30	3½	39	71½	5.33
36	4	46	78½	5.88
42	4½	53	85½	6.42
48	5	60	92½	6.96
54	5½	67	99½	7.50
60	6	74	106½	8.04
66	6½	81	113½	8.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 9-5-00: IN PLAN VIEW MOVED LOCATION OF A-A TO MATCH SECTIONAL VIEW.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE. CHANGED DRAWING NO. FROM D-CB-31S TO D-CB-31SD.
- REV. 5-30-02: MODIFIED REINFORCING STEEL.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 31SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 31SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

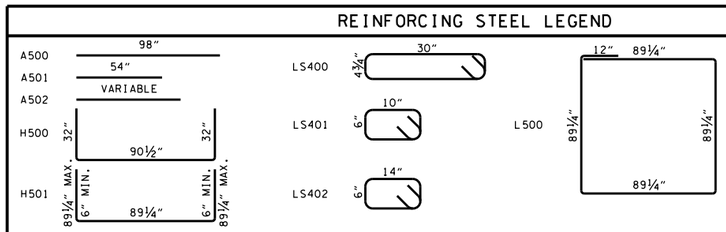
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-31.02 CATCH BASINS, TYPE 31, > 4'-8' DEPTH THROUGH 611-31.07, CATCH BASINS, TYPE 31, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

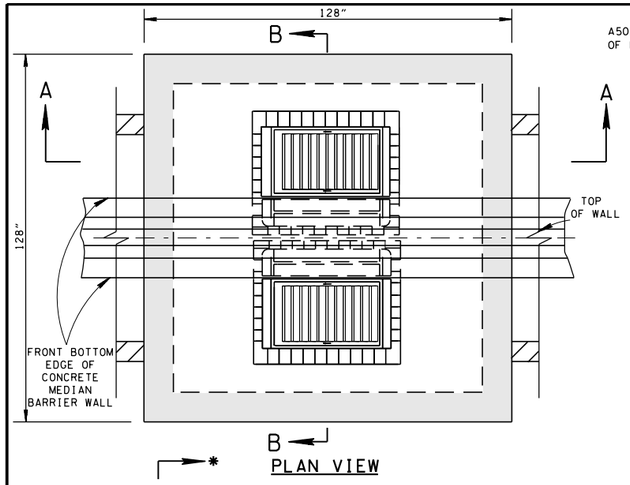
NOT TO SCALE

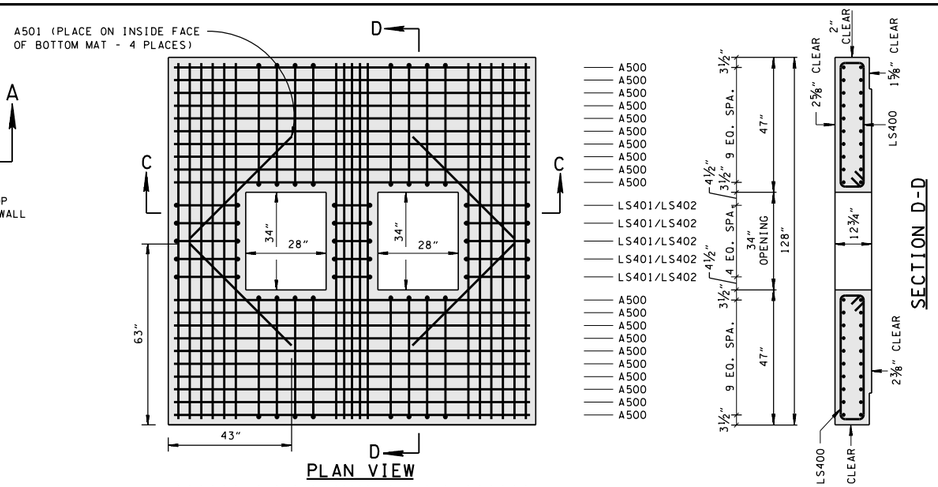
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

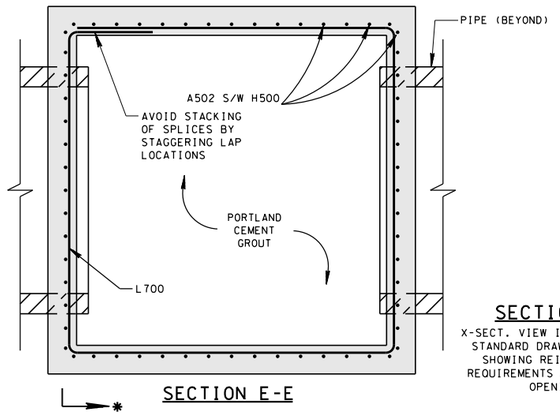
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

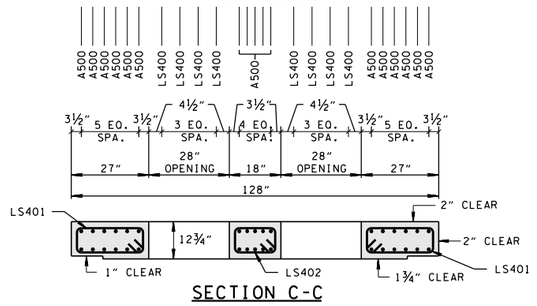
STANDARD 7' X 7' SQUARE CONCRETE NO. 31 CATCH BASIN
(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

5-27-95 D-CB-31SD



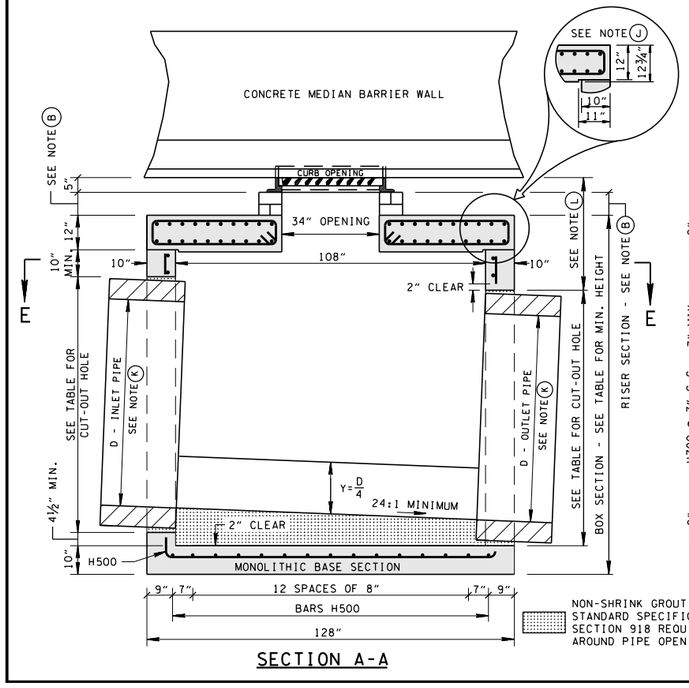




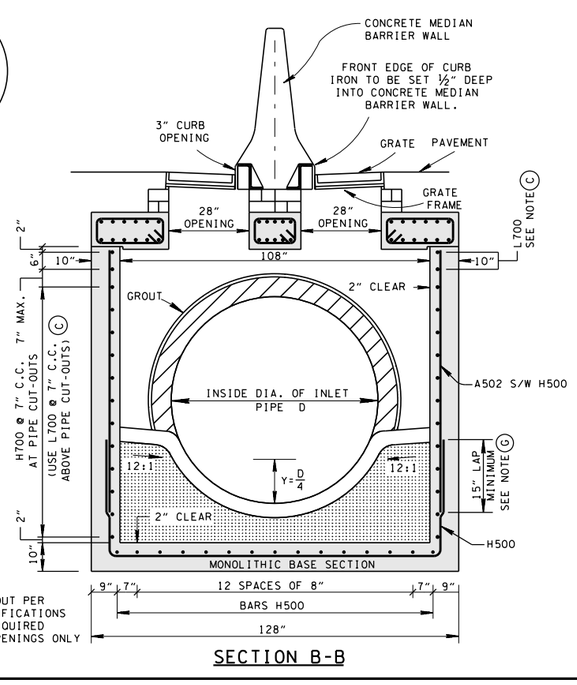


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	61½	4.42
24	3	32	68½	4.96
30	3½	39	75½	5.50
36	4	46	82½	6.04
42	4½	53	89½	6.58
48	5	60	96½	7.13
54	5½	67	103½	7.67
60	6	74	110½	8.21
66	6½	81	117½	8.75
72	7	88	124½	9.29
78	7½	95	131½	9.83

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 31SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 31SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

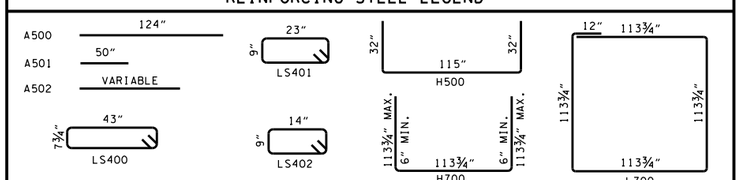
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-31.02 CATCH BASINS, TYPE 31, > 4'-8' DEPTH THROUGH 611-31.07, CATCH BASINS, TYPE 31, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

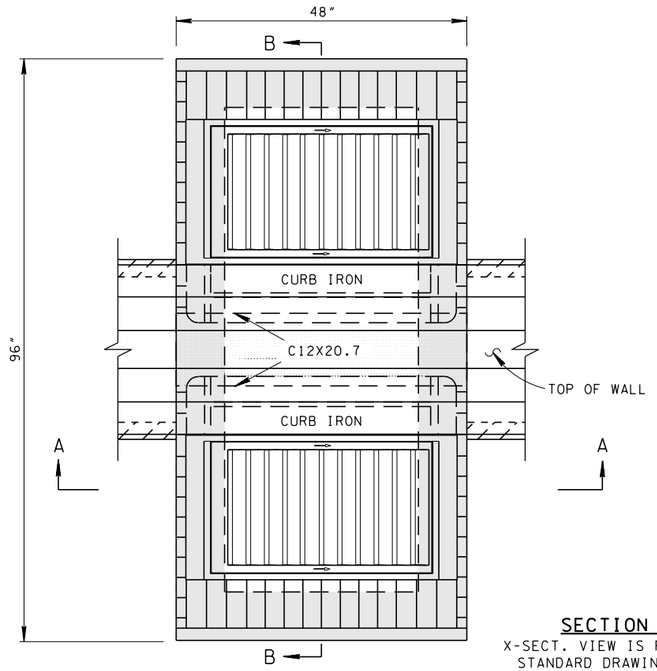
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

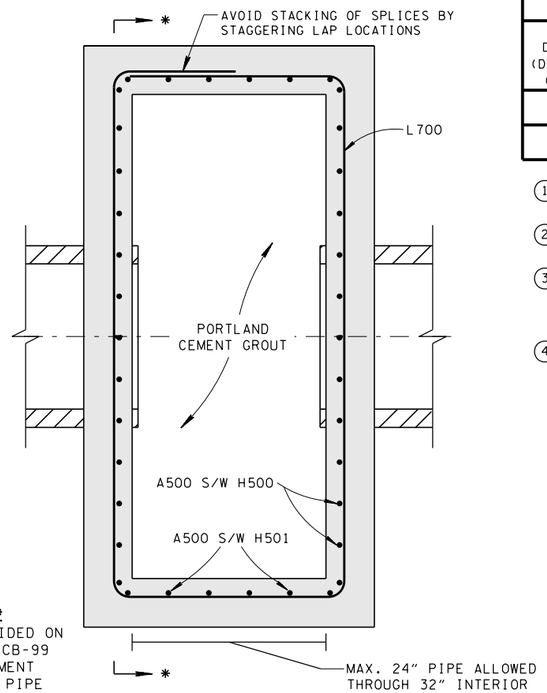
STANDARD 9' X 9' SQUARE CONCRETE NO. 31 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

NOT TO SCALE | 10-26-99 | D-CB-31SE



PLAN VIEW



SECTION E-E

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	42⅜	3.74
24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 78".

□ REV. 6-30-03: CHANGED REFERENCES TO TYPE 32 CATCH BASIN.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 32LP (LOW PROFILE) CONCRETE CATCH BASINS AND ALL PRECAST NO. 32LP (LOW PROFILE) CONCRETE CATCH BASINS.

(B) THIS DIMENSION SHALL BE FIXED AT 4.42 INCHES TO MATCH THE DEPTH OF THE 1½" STEEL PLATE AND C12X20.7 CHANNEL AND ALLOW BEARING OF THE STEEL PLATE AND CHANNEL ON THE TOP OF THE CATCH BASIN WALLS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) THE C12X20.7 CHANNEL SHALL MEET ASTM A36 SPECIFICATION. IT IS TO BE CUT 48 INCHES IN LENGTH AND INSTALLED WITH THE FLANGE DOWN ON TOP OF WALL.

(F) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

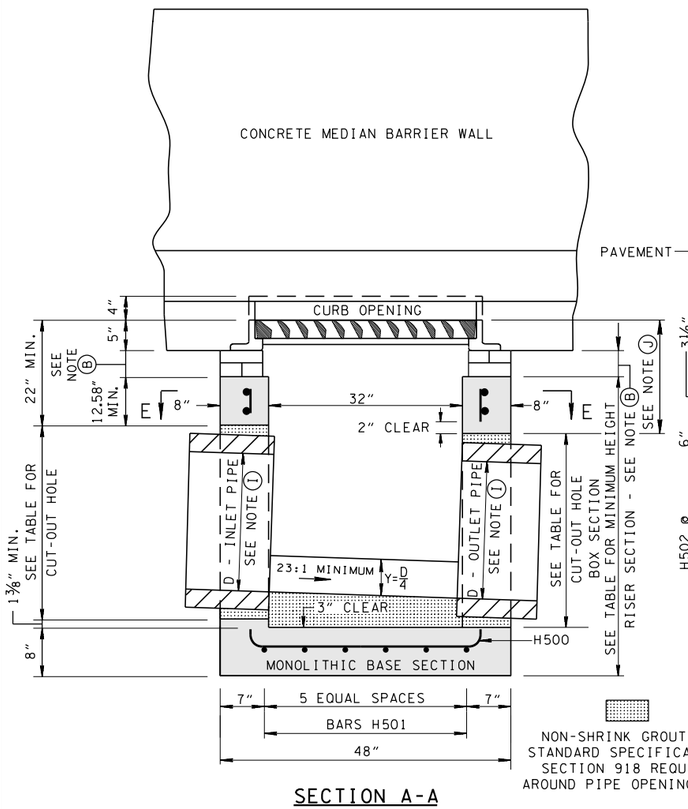
(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

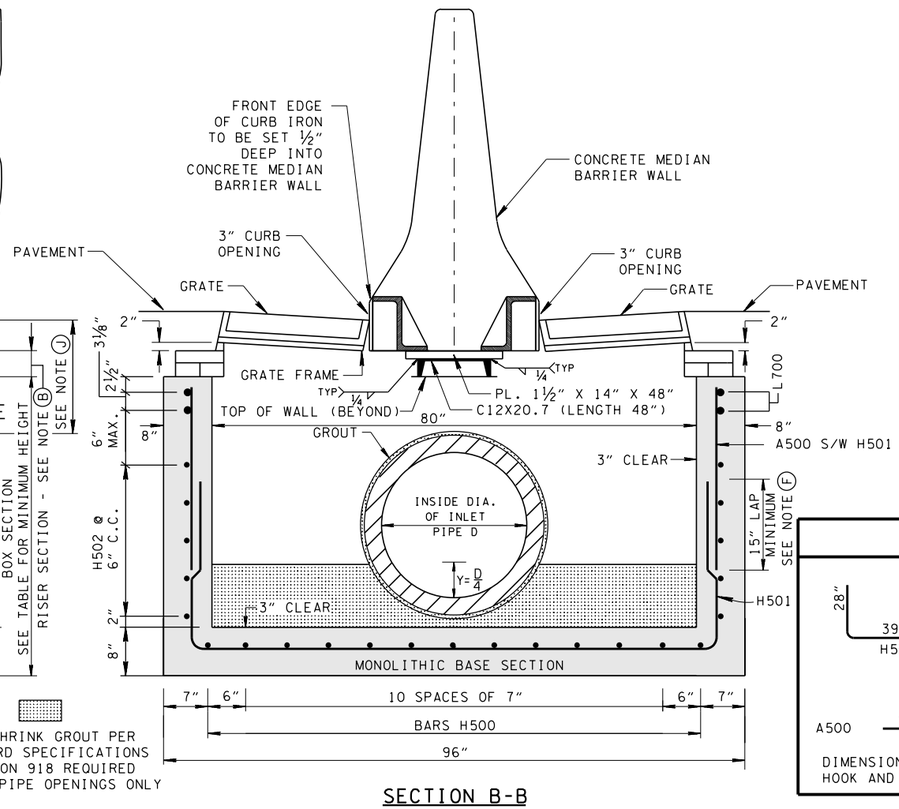
(K) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBER 611-32.02 CATCH BASINS, TYPE 32, > 4'-6' DEPTH PER EACH. PAYMENT INCLUDES GRATE.



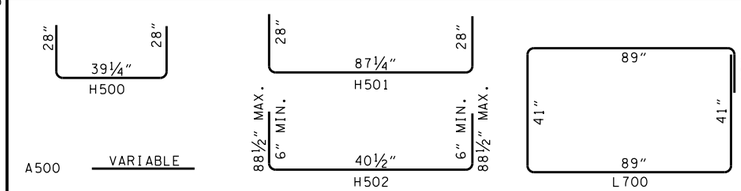
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

□ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

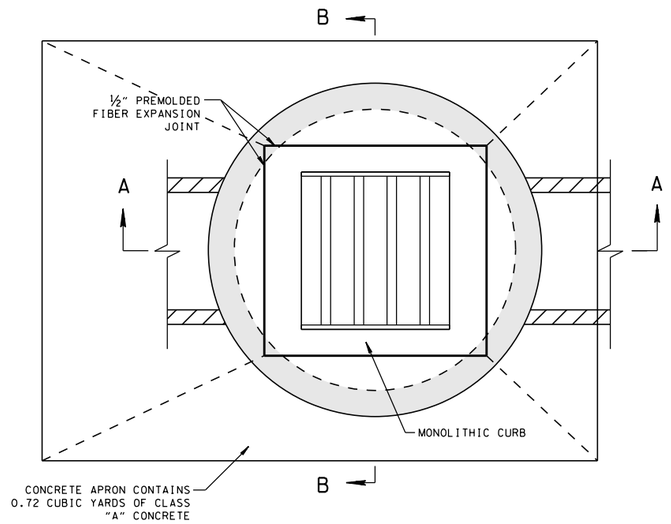
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 80" X 32" RECTANGULAR CONCRETE NO. 32 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

NOT TO SCALE

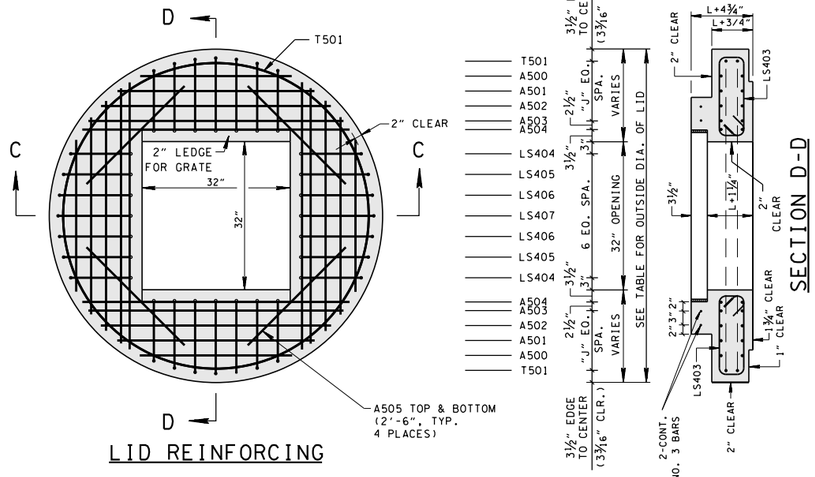
6-30-03 D-CB-32LP



PLAN VIEW

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE AS INDICATED BY "NO. OF EQ. SPACES 'J'"



LID REINFORCING

SECTION D-D

VARIABLE REINFORCING AND SPACING DIMENSIONS IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4
84	100	5
96	114	6

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

- ☐ REV. 1-19-99: ADDED CURB HEIGHT.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 9-5-04: CHANGED GROOVE DEPTH IN LID.

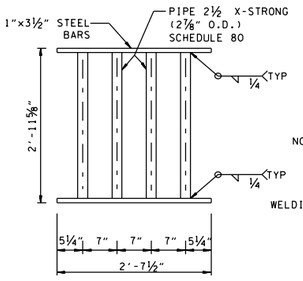
REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN DIMENSIONS							FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)							
			60"	72"	84"	96"	60"	72"	84"	96"
18	2½	25	55½	58	61½	63	3.67	3.79	4.17	4.29
24	3	32	62½	65	68½	70	4.21	4.33	4.71	4.83
30	3½	39	69½	72	75½	77	4.75	4.88	5.25	5.38
36	4	46	76½	79	82½	84	5.29	5.42	5.79	5.92
42	4½	53	83½	86	89½	91	5.83	5.96	6.33	4.46
48	5	60	90½	93	96½	98	6.38	6.50	6.88	7.00
54	5½	67	97½	100	103½	105	6.92	7.04	7.42	7.54
60	6	74	104½	107	110½	112	7.46	7.58	7.96	8.08
66	6½	81	111½	114	117½	119	8.00	8.13	8.50	8.63

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

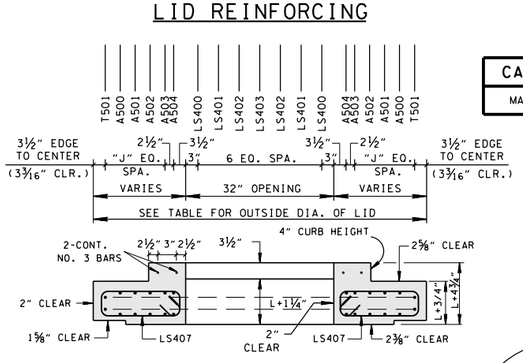


GRATE UNIT NO. 38

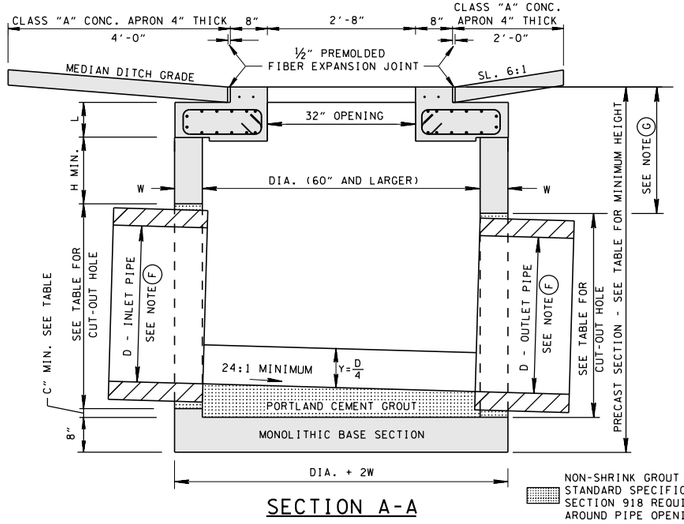
GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

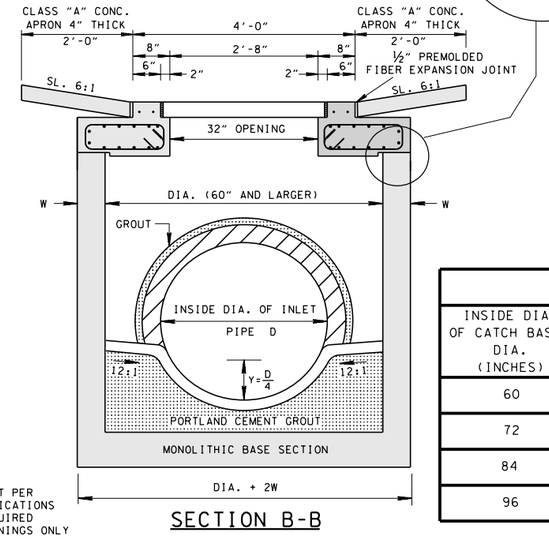


SECTION C-C

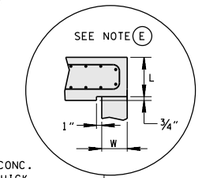


SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B



GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(C) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(D) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(F) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 20 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 21 INCH DEPTH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 25 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 26 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(H) CONCRETE JOINT MATERIAL TO BE ½" PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(I) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-38.01 CATCH BASINS, TYPE 38, 0'-4' DEPTH THROUGH 611-38.07, CATCH BASINS, TYPE 38, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-38.08, CATCH BASINS, TYPE 38, ___ '- ___ ' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CLASS "A" CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION	
						C (INCHES)	H (INCHES)
60	6	8	72	36	24	2.5	8
72	7	9	86	48	30	3.0	8
84	8	9	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

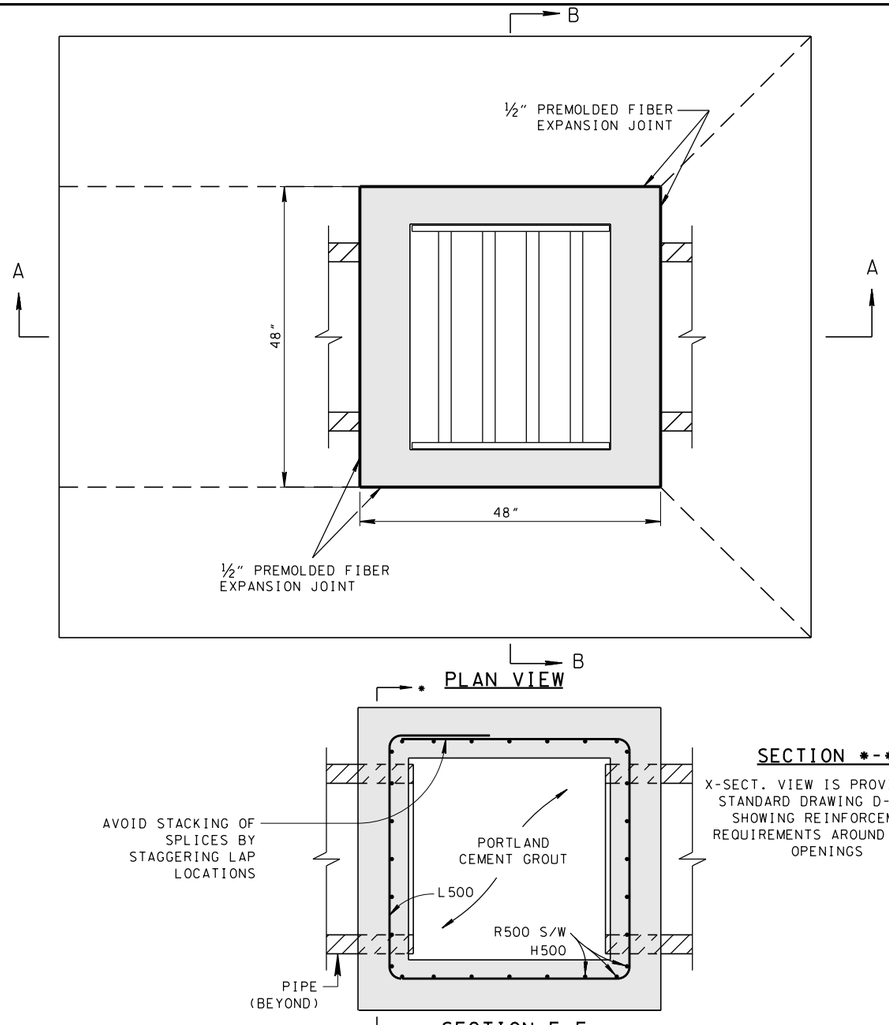
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN

NOT TO SCALE

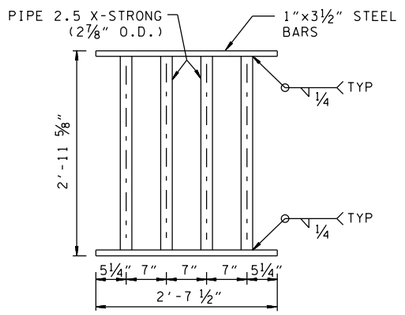
1-19-98 D-CB-38RB



PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



GRATE UNIT NO. 38

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

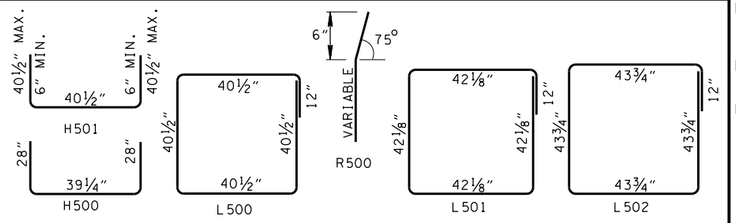
NOTE: MATERIAL FOR GRATE

SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING:

AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

- ☐ REV. 5-27-99: ADDED CATCH BASIN MAXIMUM DEPTH REQUIREMENT NOTE.
- ☐ REV. 5-30-01: MODIFIED DIMENSIONS IN SECTION A-A AND CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 6-10-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 38S AND ALL PRECAST NO. 38S CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(C) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(D) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(E) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(F) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

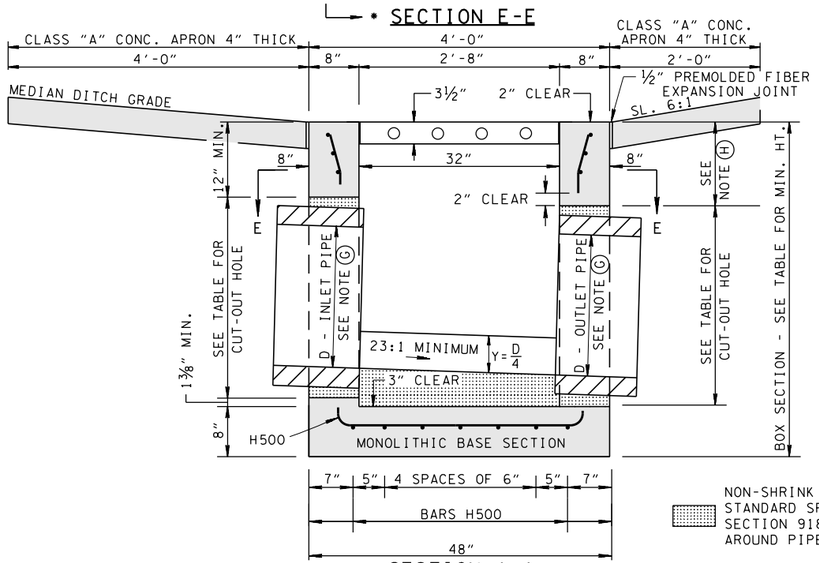
(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 12 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 501 OF STANDARD SPECIFICATIONS.

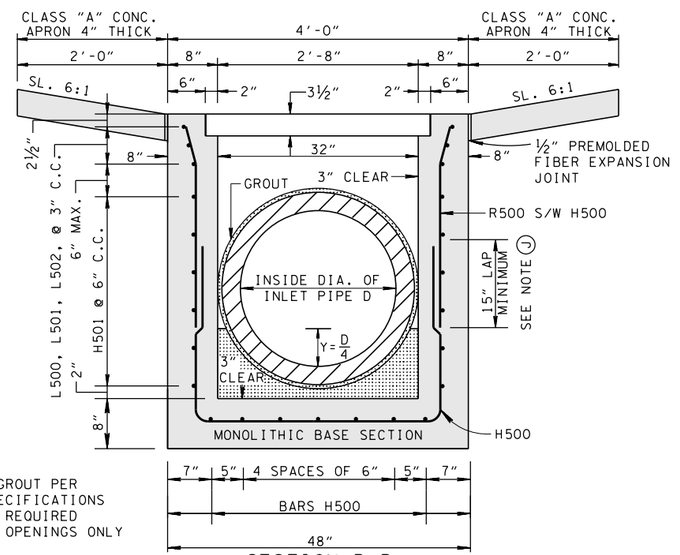
(J) THE CONTRACTOR MAY ELIMINATE THE R500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS AND BENDING THE TOP 6 INCHES AT 75° SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-38.01 CATCH BASINS, TYPE 38, 0'-4' DEPTH AND 611-38.02, CATCH BASINS, TYPE 38, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	47	2.96
24	3	32	54	3.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

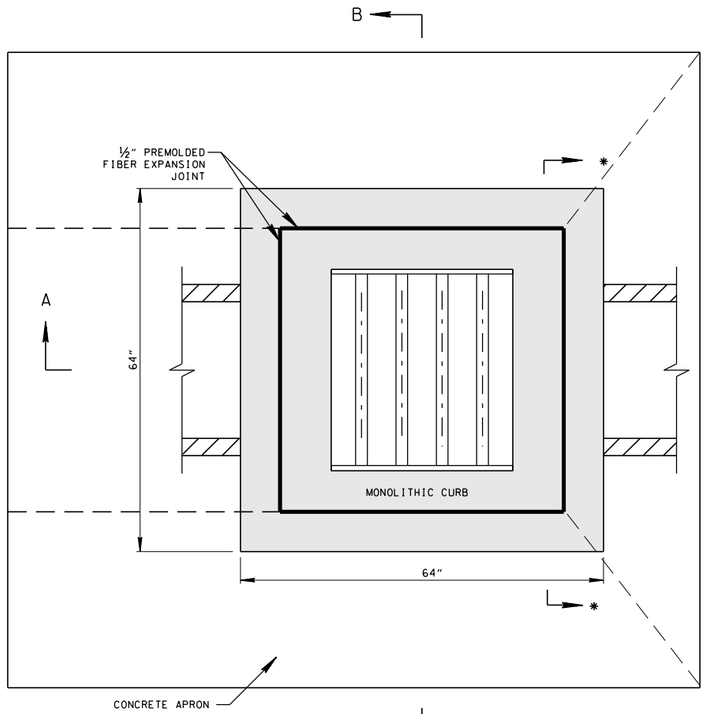
(4) THE BOX SECTION HEIGHT SHALL NOT EXCEED 66".

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

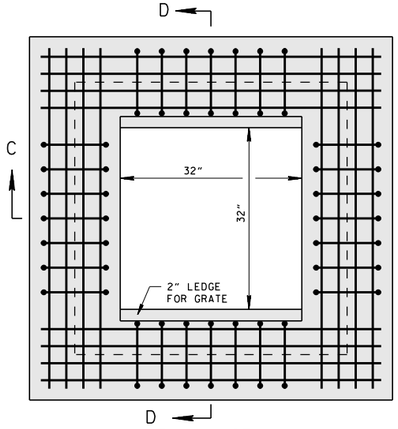
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 32" x 32" SQUARE CONCRETE NO.38 CATCH BASIN

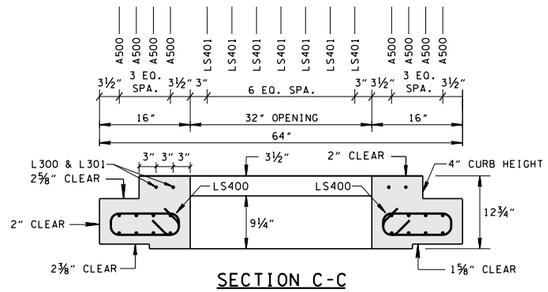
NOT TO SCALE | 1-19-98 | D-CB-38S



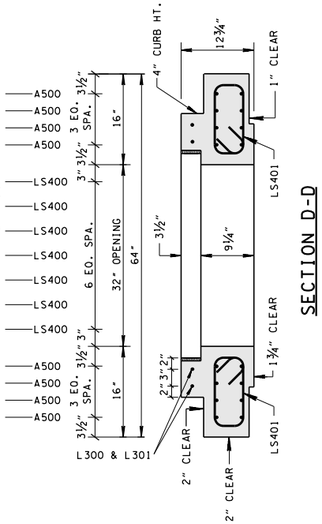
PLAN VIEW



PLAN VIEW



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	3.63
24	3	32	62	4.17
30	3½	39	69	4.71
36	4	46	76	5.25

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

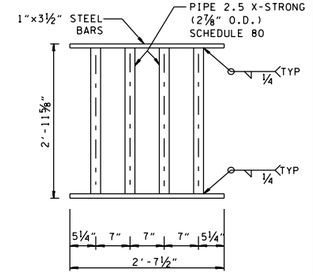
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 9-11-02: MODIFIED LID DETAIL.

☐ REV. 9-5-04: CHANGED GROOVE DEPTH IN LID.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

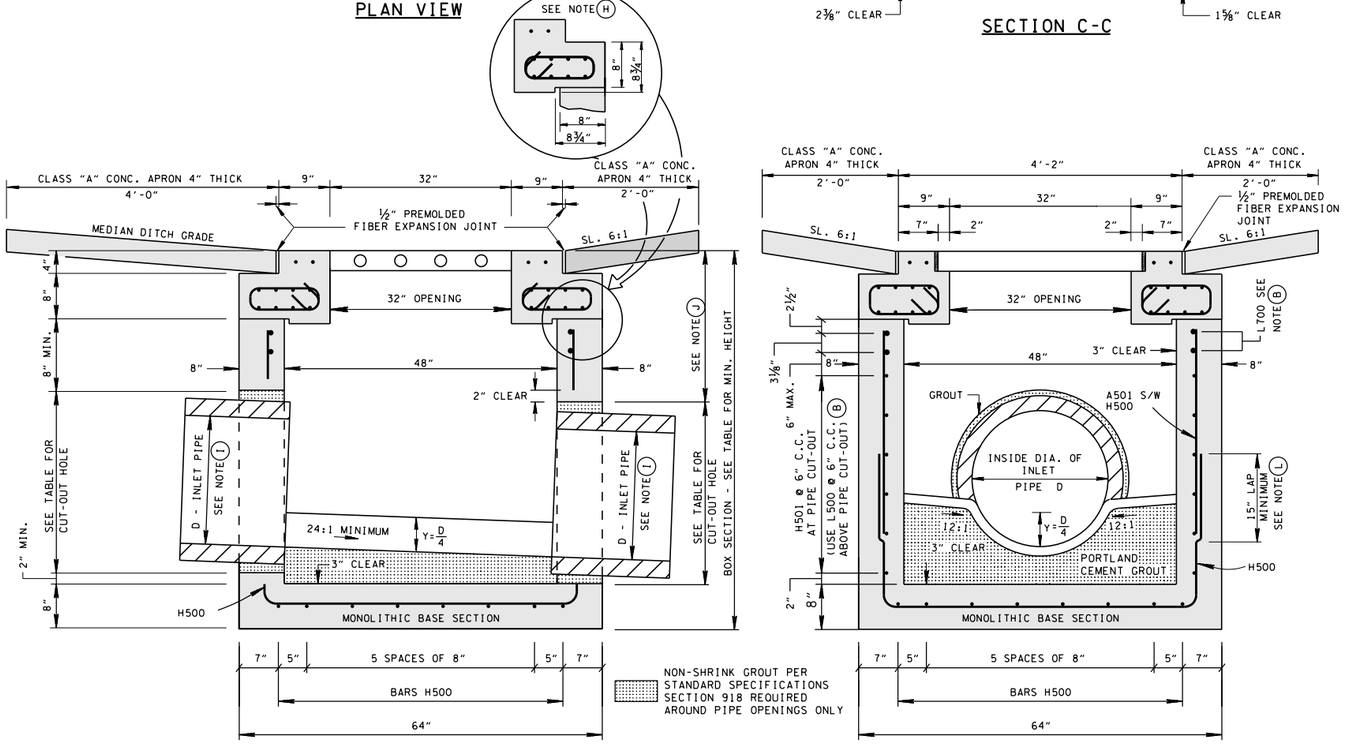


GRATE UNIT NO. 38

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)



SECTION A-A

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 38SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 38SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

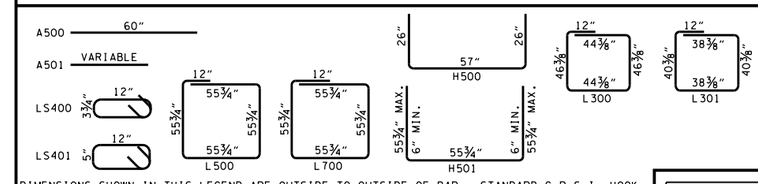
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 20 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-38.01 CATCH BASINS, TYPE 38, 0'-4' DEPTH THROUGH 611-38.07 CATCH BASINS, TYPE 38, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

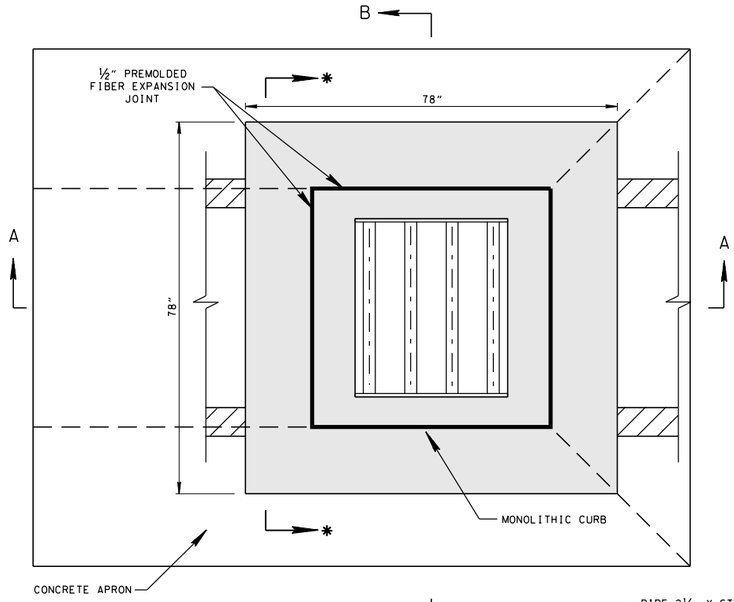
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

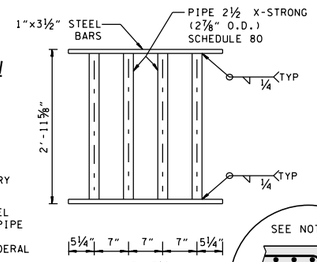
STANDARD 4' X 4' SQUARE CONCRETE NO.38 CATCH BASIN

5-27-99 D-CB-38SB



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



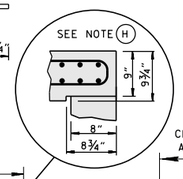
PLAN VIEW

GRATE UNIT NO. 38

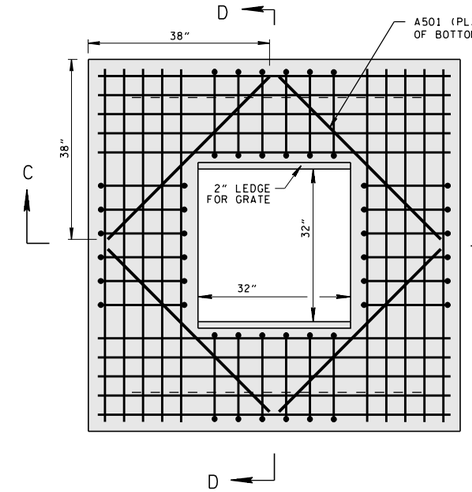
GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

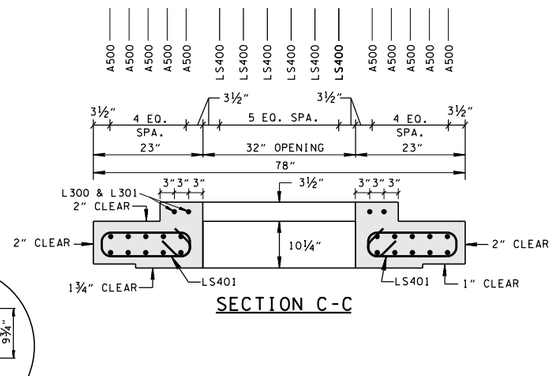
WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)



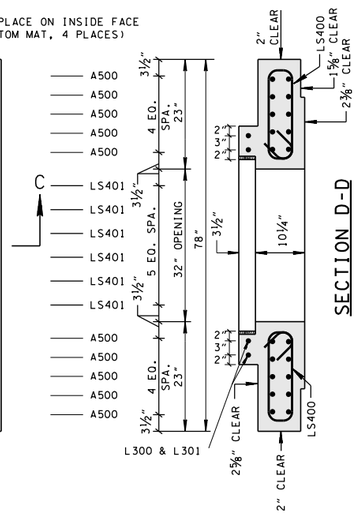
SECTION A-A



PLAN VIEW



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	59	3.96
24	3	32	66	4.50
30	3½	39	73	5.04
36	4	46	80	5.58
42	4½	53	87	6.13
48	5	60	94	6.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

□ REV. 9-5-04: CHANGED GROOVE DEPTH IN LID.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 38SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 38SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

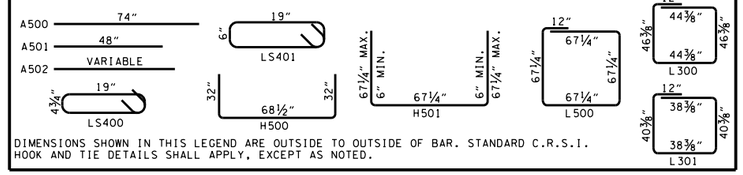
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-38.01 CATCH BASINS, TYPE 38, 0'-4' DEPTH THROUGH 611-38.07 CATCH BASINS, TYPE 38, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



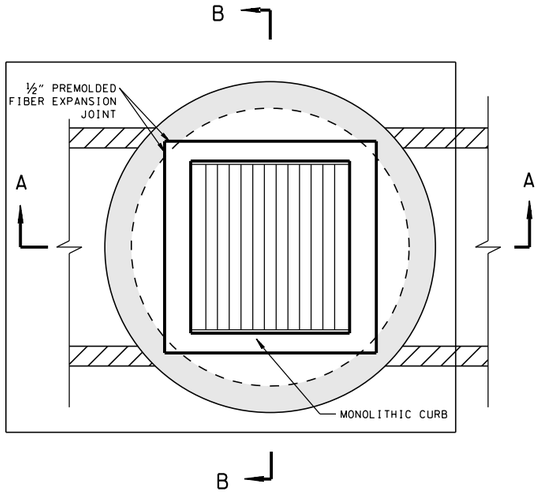
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

□ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

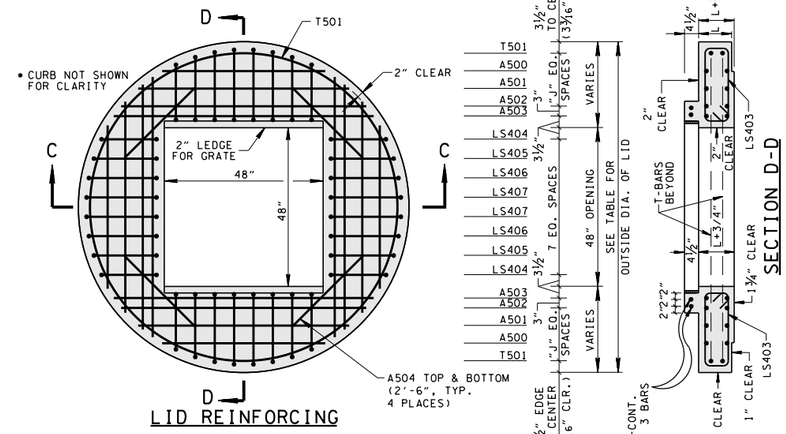
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.38 CATCH BASIN

NOT TO SCALE | 9-11-02 | D-CB-38SC



PLAN VIEW

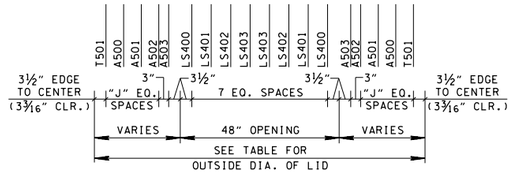


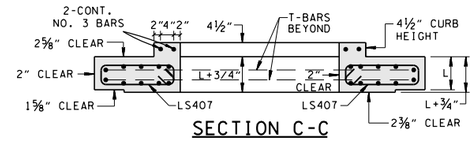
LID REINFORCING

VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
84	100	3
96	114	4

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUAL OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE AS INDICATED BY "NO. OF EQ. SPACES 'J'"





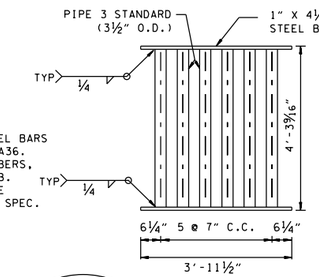
SECTION C-C

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

GRATE UNIT NO. 39

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.



CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS						
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)		FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
			84"	96"	84"	96"
18	2½	25	63	64½	4.29	4.42
24	3	32	70	71½	4.83	4.96
30	3½	39	77	78½	5.38	5.50
36	4	46	84	85½	5.92	6.04
42	4½	53	91	92½	6.46	6.58
48	5	60	98	99½	7.00	7.13
54	5½	67	105	106½	7.54	7.67
60	6	74	112	113½	8.08	8.21
66	6½	81	119	120½	8.63	8.75

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

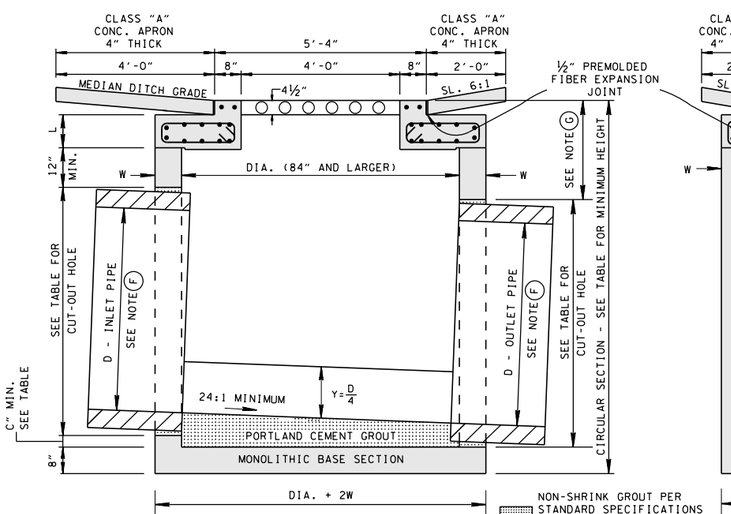
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 11-25-98: CHANGED LABELING ON PLAN VIEW OF GRATE UNIT AND SIZE OF STEEL BARS IN GRATE UNIT.

☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.

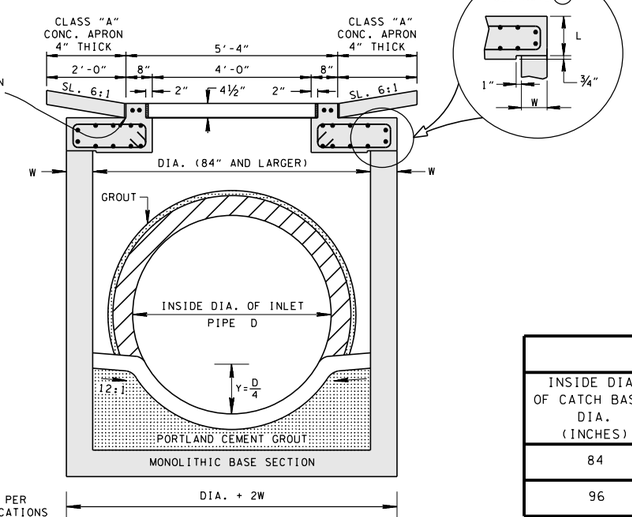
☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(C) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(D) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(F) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26½ INCH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27½ INCH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(H) CONCRETE JOINT MATERIAL TO BE ½" PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(I) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-39.02 CATCH BASINS, TYPE 39, > 4'-8' DEPTH THROUGH 611-39.07, CATCH BASINS, TYPE 39, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-39.08, CATCH BASINS, TYPE 39, ___'- ___' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CLASS "A" CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

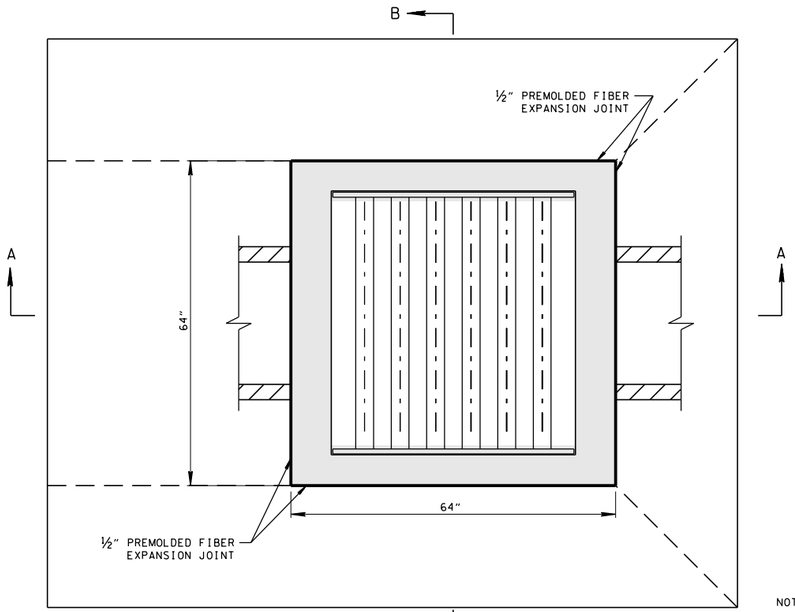
CATCH BASIN DIMENSIONS						
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN INSIDE DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION C (INCHES)
84	8	10	100	60	36	3.5
96	9	11	114	66	42	4.0

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

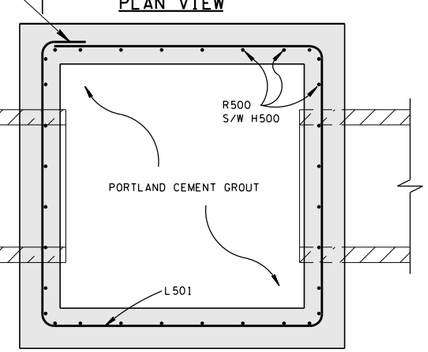
STANDARD PRECAST CIRCULAR NO. 39 CATCH BASIN

NOT TO SCALE | 10-26-98 | D-CB-39RB



AVOID STACKING OF SPLICES BY STAGGERING LAP LOCATIONS

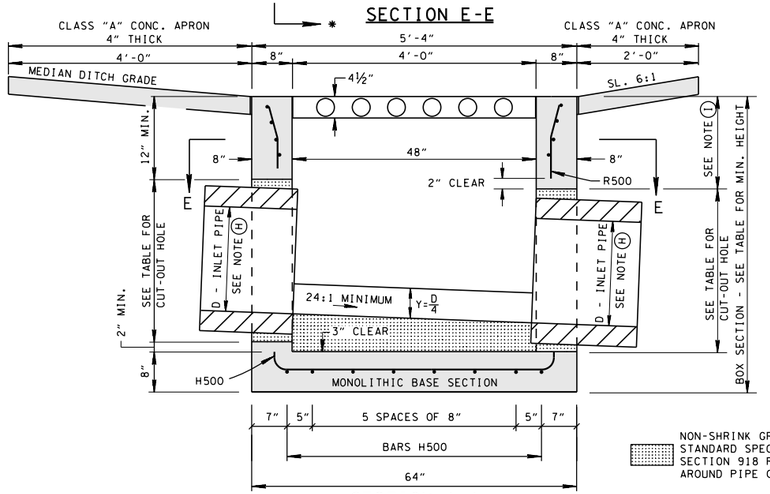
PLAN VIEW



SECTION ✱-✱

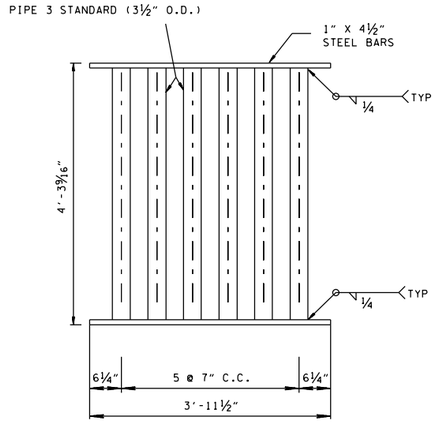
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

SECTION E-E



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



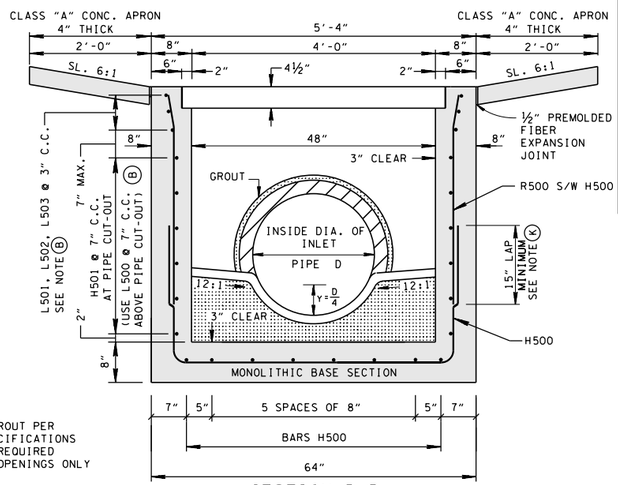
GRATE UNIT NO. 39

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

SECTION B-B



CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN MINIMUM HEIGHTS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	47	2.96
24	3	32	54	3.50
30	3½	39	61	4.04
36	4	46	68	4.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 39 CONCRETE CATCH BASINS AND ALL PRECAST NO. 39 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

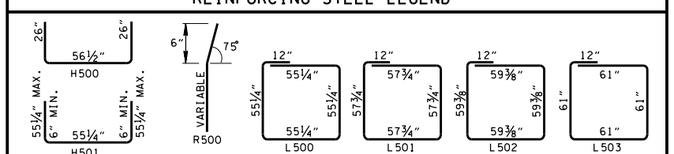
(I) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 12 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(J) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(K) THE CONTRACTOR MAY ELIMINATE THE R500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS AND BENDING THE TOP 6 INCHES AT 75° SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-39.01 CATCH BASINS, TYPE 39, 0'-4' DEPTH THROUGH 611-39.07 CATCH BASINS, TYPE 39, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

REV.10-26-98: CHANGED STEEL BARS ON GRATE UNIT FROM 1" X 4¼" TO 1" X 4½".

☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

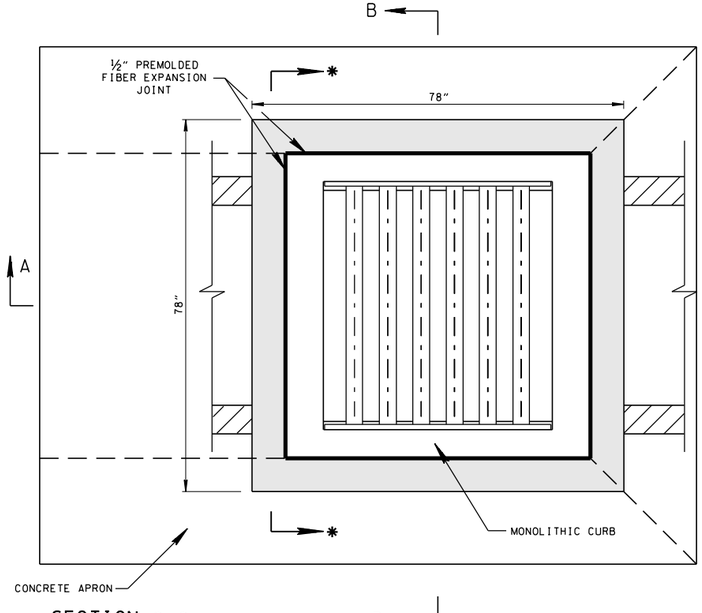
STANDARD 4' X 4' SQUARE CONCRETE NO.39 CATCH BASIN

NOT TO SCALE

1-19-98

D-CB-39S

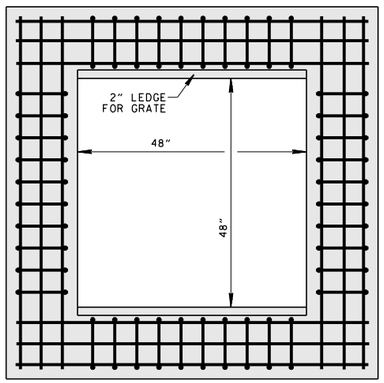
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



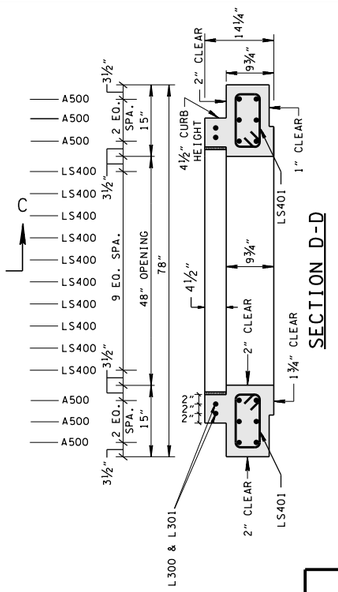
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

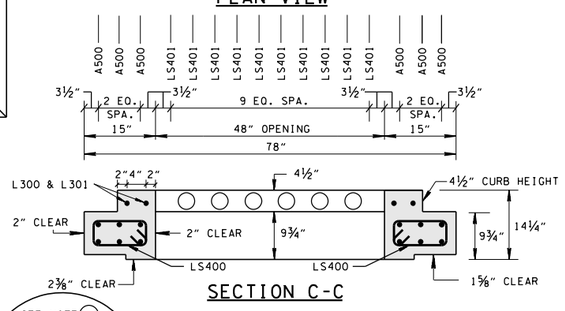
PLAN VIEW



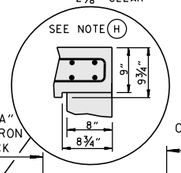
PLAN VIEW

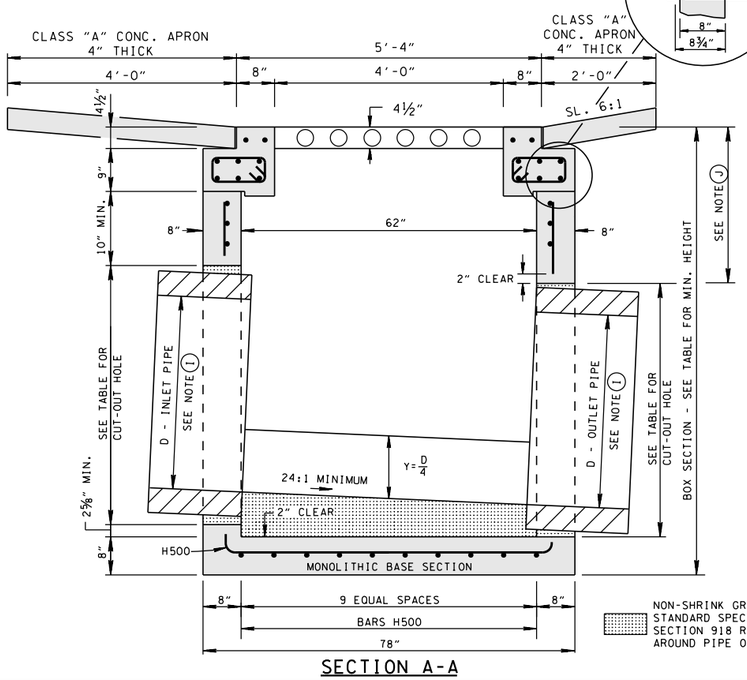


SECTION D-D

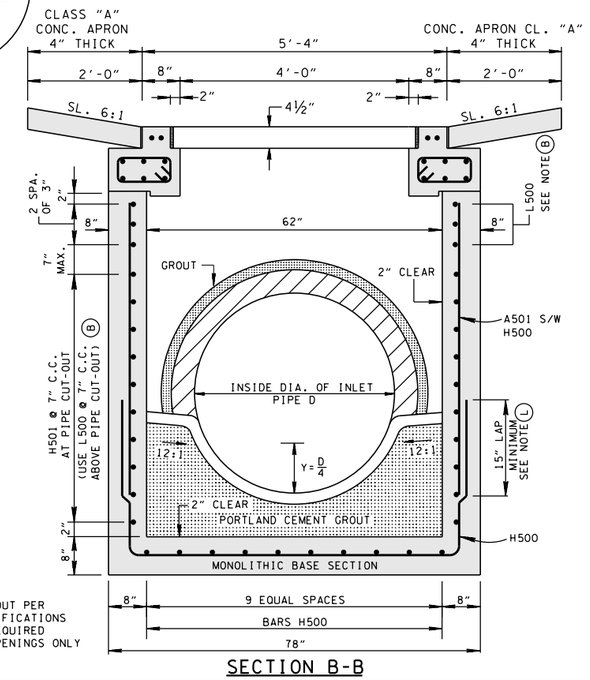


SECTION C-C





SECTION A-A



SECTION B-B

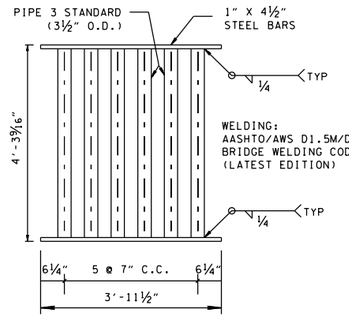
CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	60	4.04
24	3	32	67	4.58
30	3½	39	74	5.13
36	4	46	81	5.67
42	4½	53	88	6.21
48	5	60	95	6.75

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.



GRATE UNIT NO. 39

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 39SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 39SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

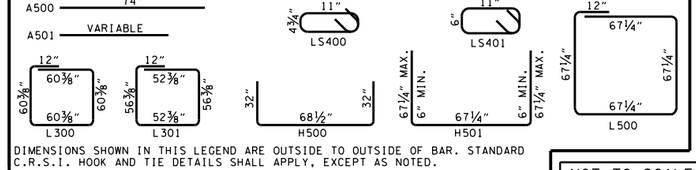
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23½ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-39.02 CATCH BASINS, TYPE 39, > 4'-8' DEPTH THROUGH 611-39.07 CATCH BASINS, TYPE 39, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

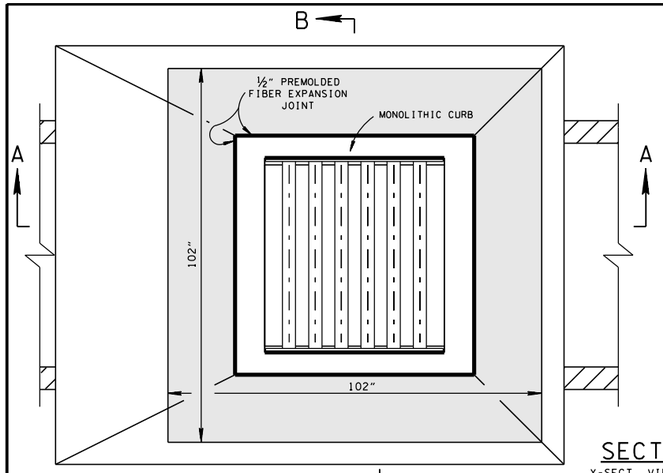
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

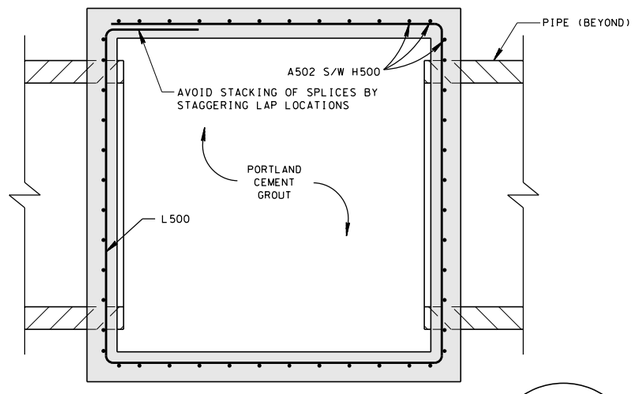
STANDARD
5'2" X 5'2" SQUARE
CONCRETE NO.39
CATCH BASIN

2-14-03 | D-CB-39SC

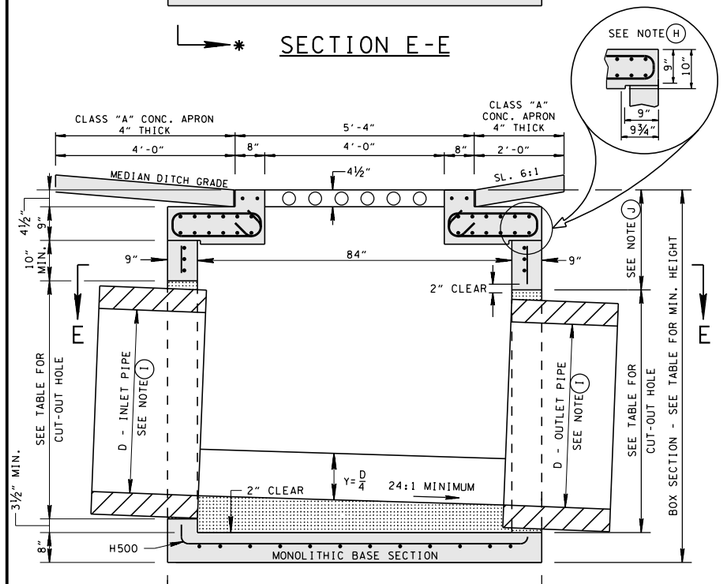


B

PLAN VIEW



SECTION E-E

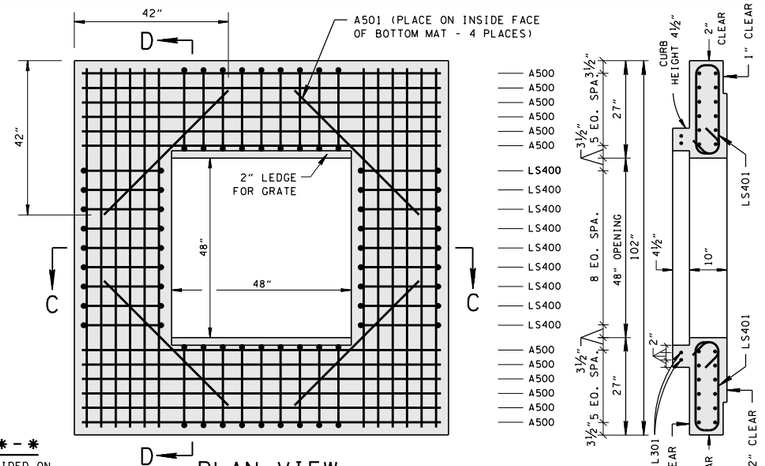


SECTION A-A

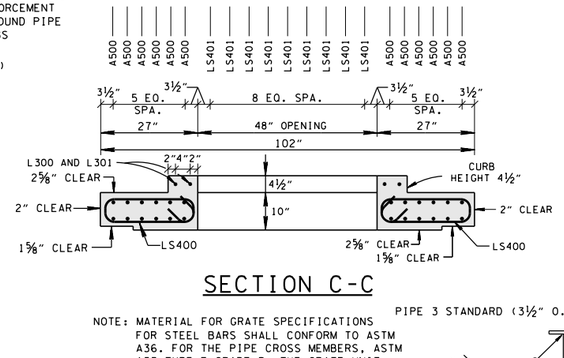
NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



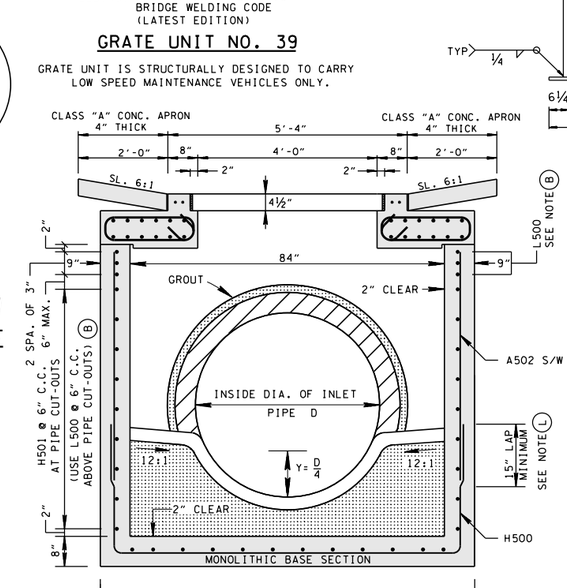
SECTION C-C

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

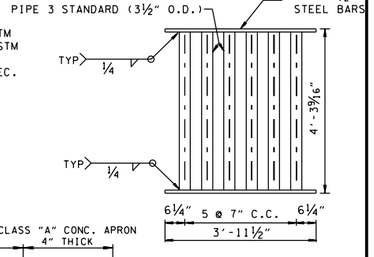
WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

GRATE UNIT NO. 39

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.



SECTION B-B



SECTION D-D

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	60	4.04
24	3	32	67	4.58
30	3½	39	74	5.13
36	4	46	81	5.67
42	4½	53	88	6.21
48	5	60	95	6.75
54	5½	67	102	7.29
60	6	74	109	7.83
66	6½	81	116	8.38

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C).
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 39SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 39SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

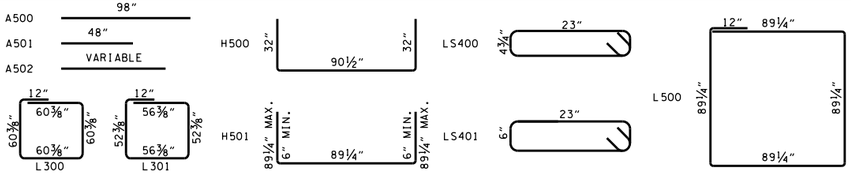
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23½ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-39.02 CATCH BASINS, TYPE 39, > 4'-8' EPTH THROUGH 611-39.07, CATCH BASINS, TYPE 39, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

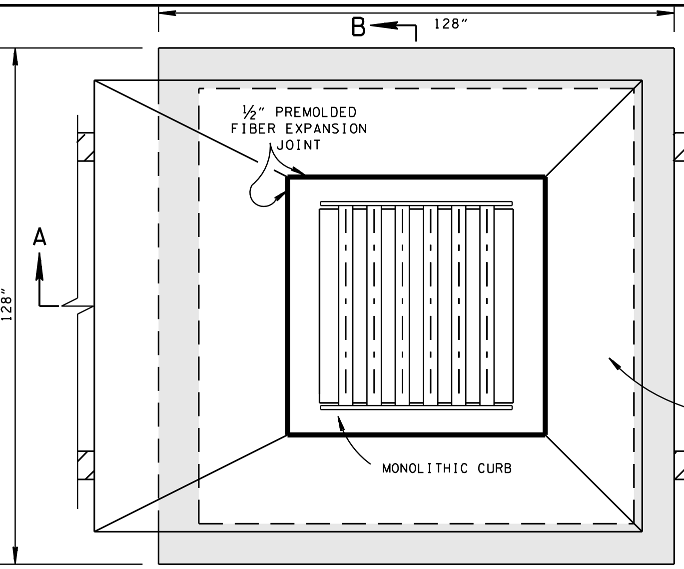
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

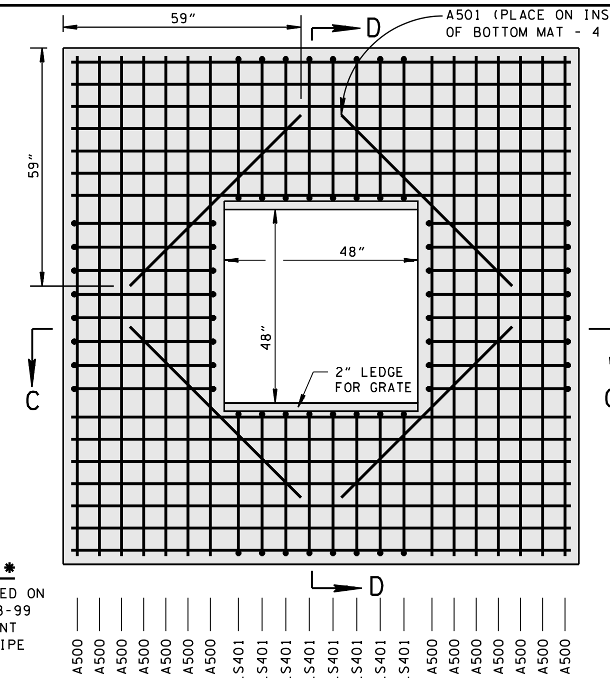
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 7' X 7' SQUARE CONCRETE NO. 39 CATCH BASIN

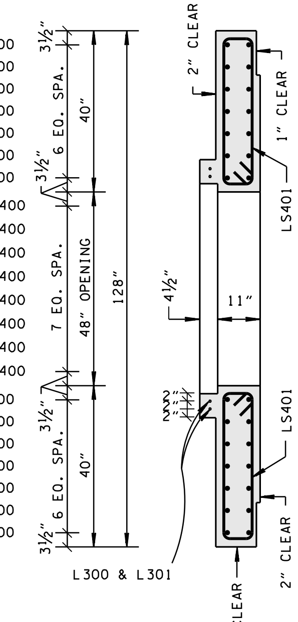
10-26-99 | D-CB-39SD



PLAN VIEW



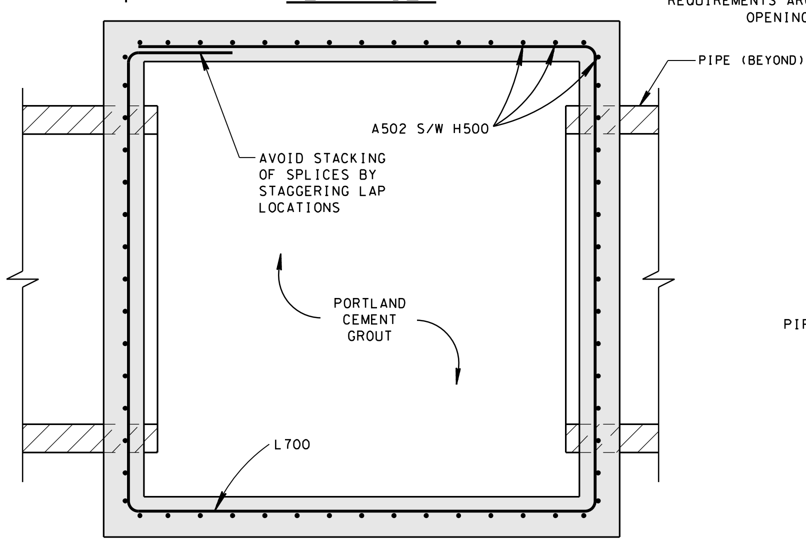
PLAN VIEW



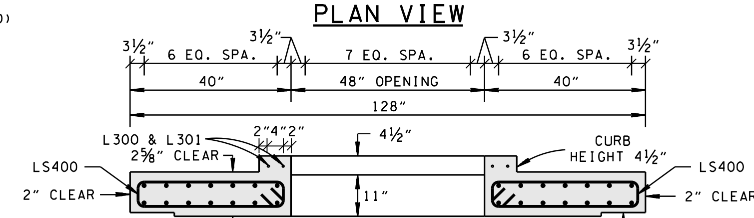
SECTION D-D

SECTION *-*

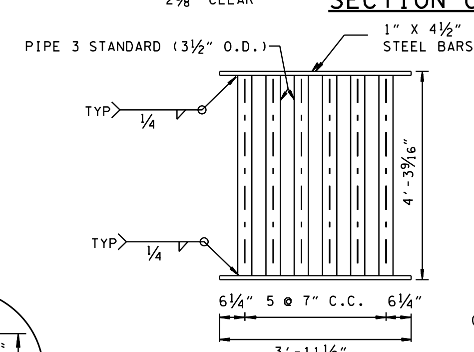
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION E-E



SECTION C-C

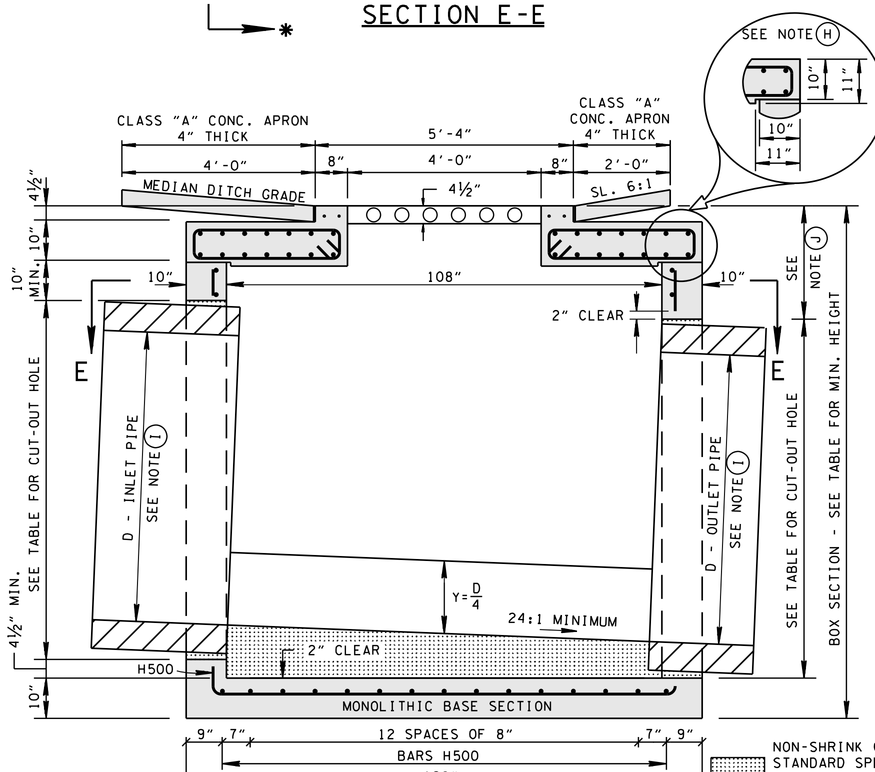


NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

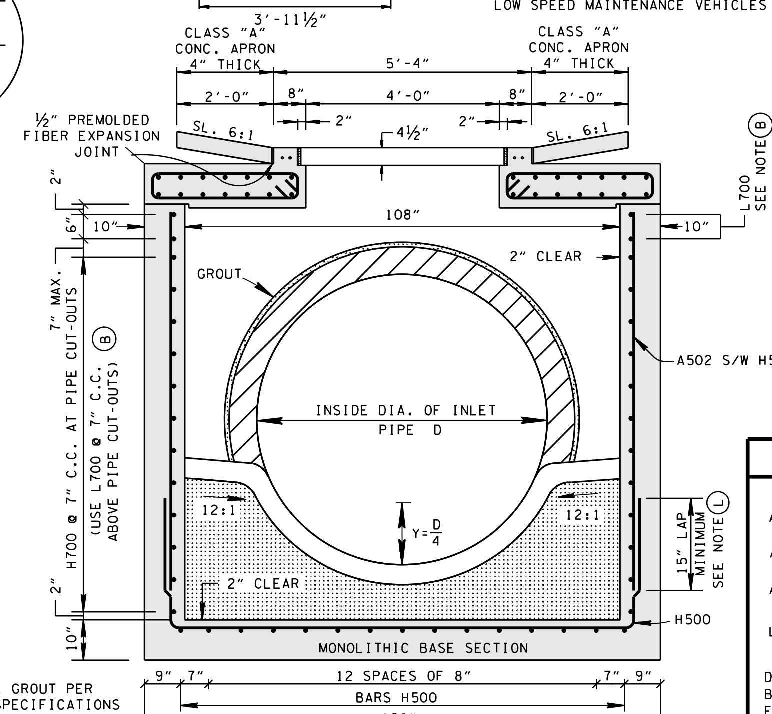
WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)

GRATE UNIT NO. 39

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.



SECTION A-A



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	64	4.21
24	3	32	71	4.75
30	3½	39	78	5.29
36	4	46	85	5.83
42	4½	53	92	6.38
48	5	60	99	6.92
54	5½	67	106	7.46
60	6	74	113	8.00
66	6½	81	120	8.54
72	7	88	127	9.08
78	7½	95	134	9.63

- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 39SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 39SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_Y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

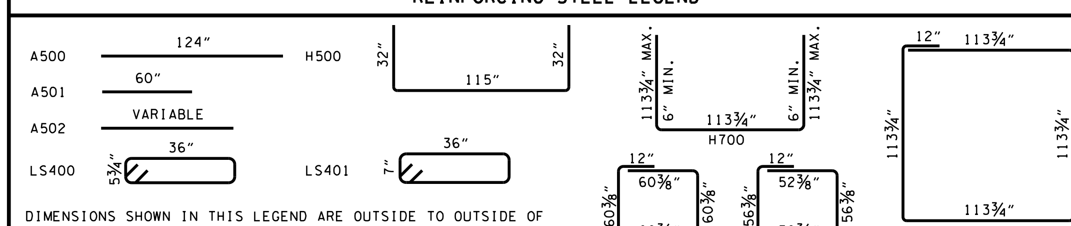
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24½ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS, 4TH EDITION WITH INTERIMS.

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-39.02 CATCH BASINS, TYPE 39, > 4'-8' DEPTH THROUGH 611-39.07, CATCH BASINS, TYPE 39, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

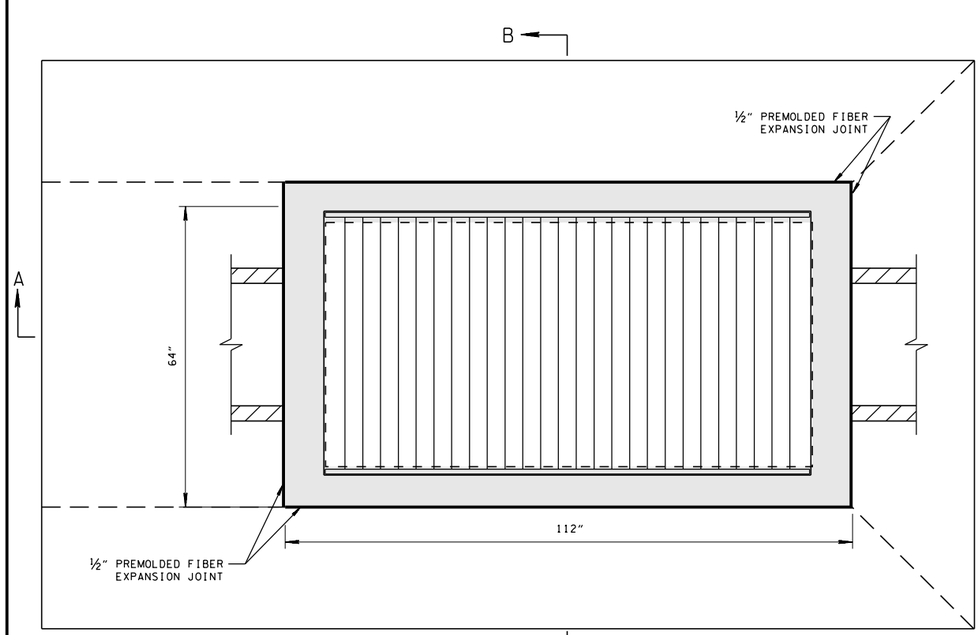
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
9' X 9' SQUARE
CONCRETE NO. 39
CATCH BASIN

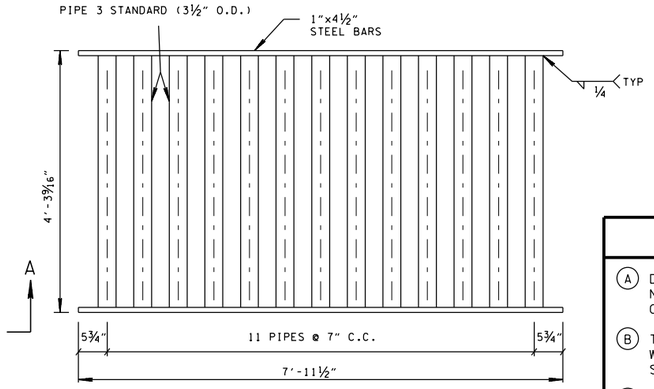
NOT TO SCALE | 12-18-98 | D-CB-39SE

- REV. 3-30-00: CHANGED GRATE UNIT DESIGNATION FROM NO. 39 TO NO. 40.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J). ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C).

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



PLAN VIEW

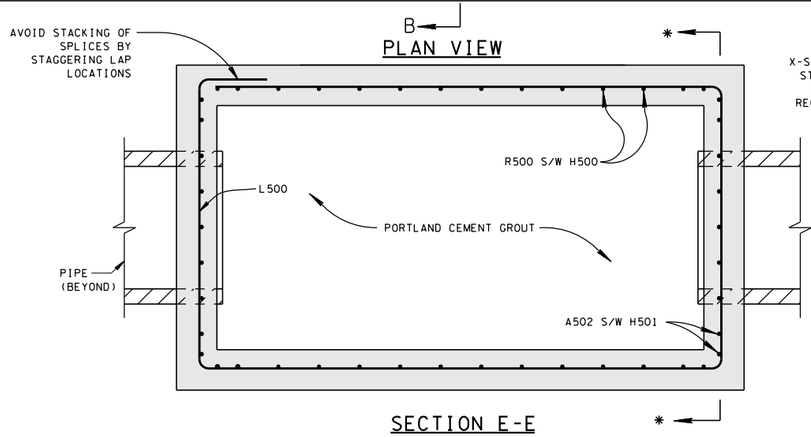


GRATE UNIT NO. 40

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)



SECTION E-E

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.13
24	3	32	56	3.67
30	3½	39	63	4.21
36	4	46	70	4.75
(4) 42	4½	53	77	5.29
(4) 48	5	60	84	5.83
(4) 54	5½	67	91	6.38
(4) 60	6	74	98	6.92

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 40 CONCRETE CATCH BASINS AND ALL PRECAST NO. 40 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H501 BARS AND MAY ELIMINATE THE R500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS AND BENDING THE TOP 6 INCHES 75° SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

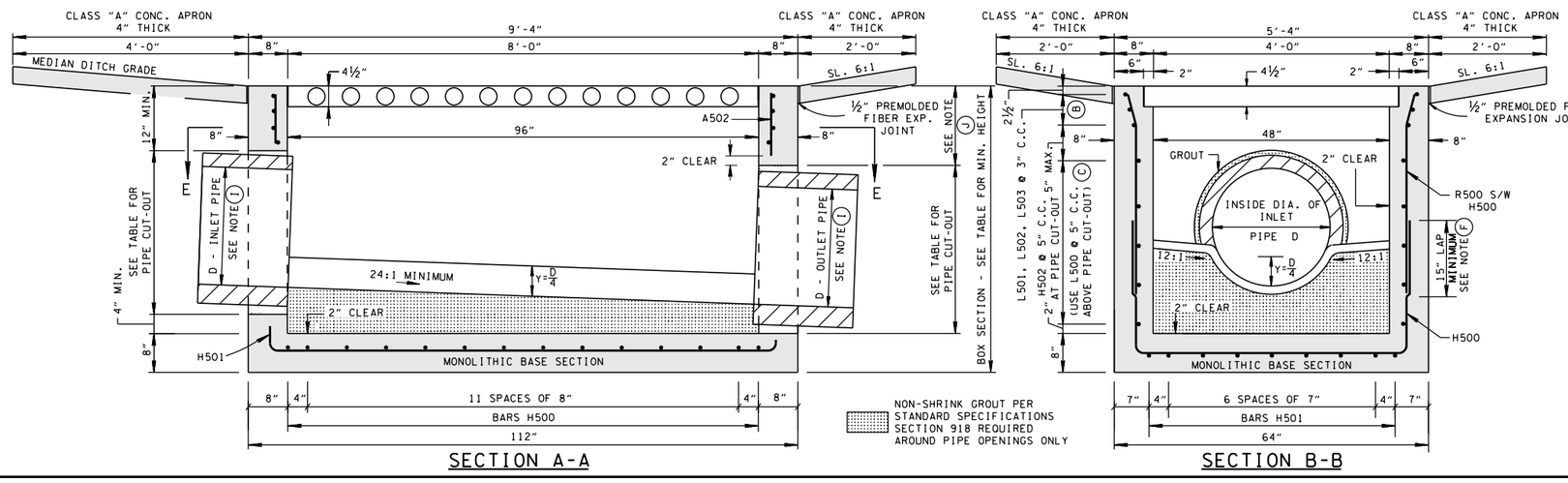
(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

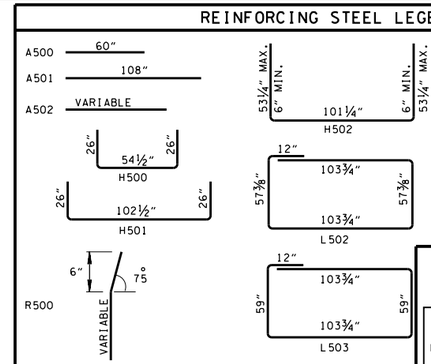
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 12 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NOS. 611-40.01, CATCH BASIN, TYPE 40, 0'-4' DEPTH THROUGH 611-40.05, CATCH BASINS, TYPE 40, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH BASIN.



REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

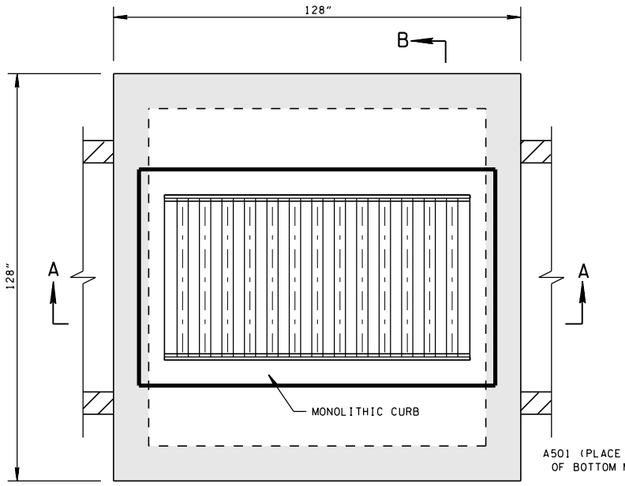
CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

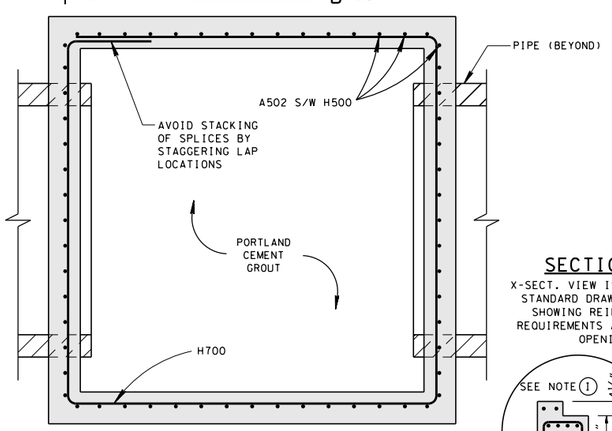
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 8' RECTANGULAR CONCRETE NO.40 CATCH BASIN

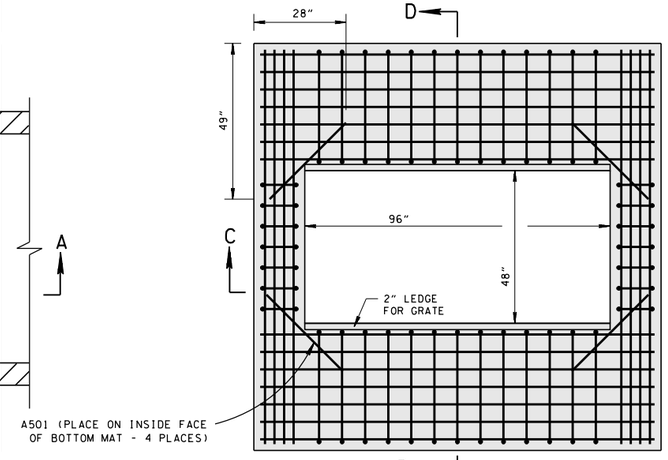
NOT TO SCALE | 11-25-99 | D-CB-40S

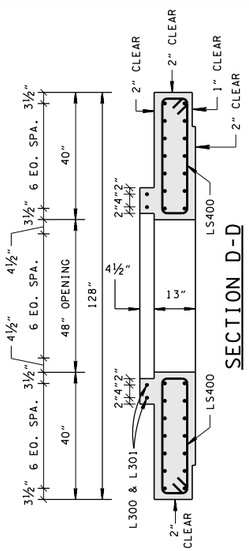


PLAN VIEW

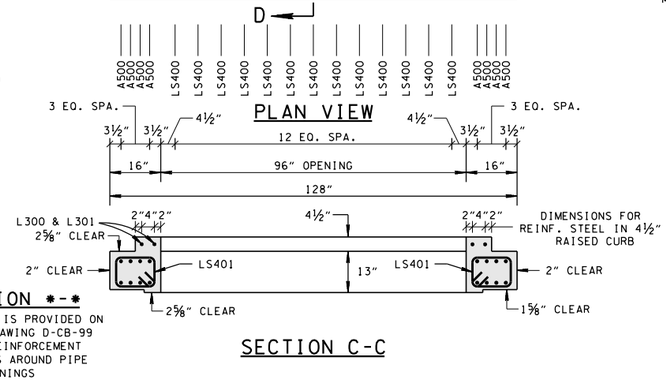


SECTION E-E





SECTION D-D



PLAN VIEW

SECTION C-C

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	66	4.38
24	3	32	73	4.92
30	3½	39	80	5.46
36	4	46	87	6.00
42	4½	53	94	6.54
48	5	60	101	7.08
54	5½	67	108	7.63
60	6	74	115	8.17
66	6½	81	122	8.71
72	7	88	129	9.25
78	7½	95	136	9.79

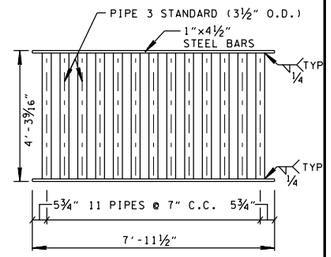
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION D-D.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

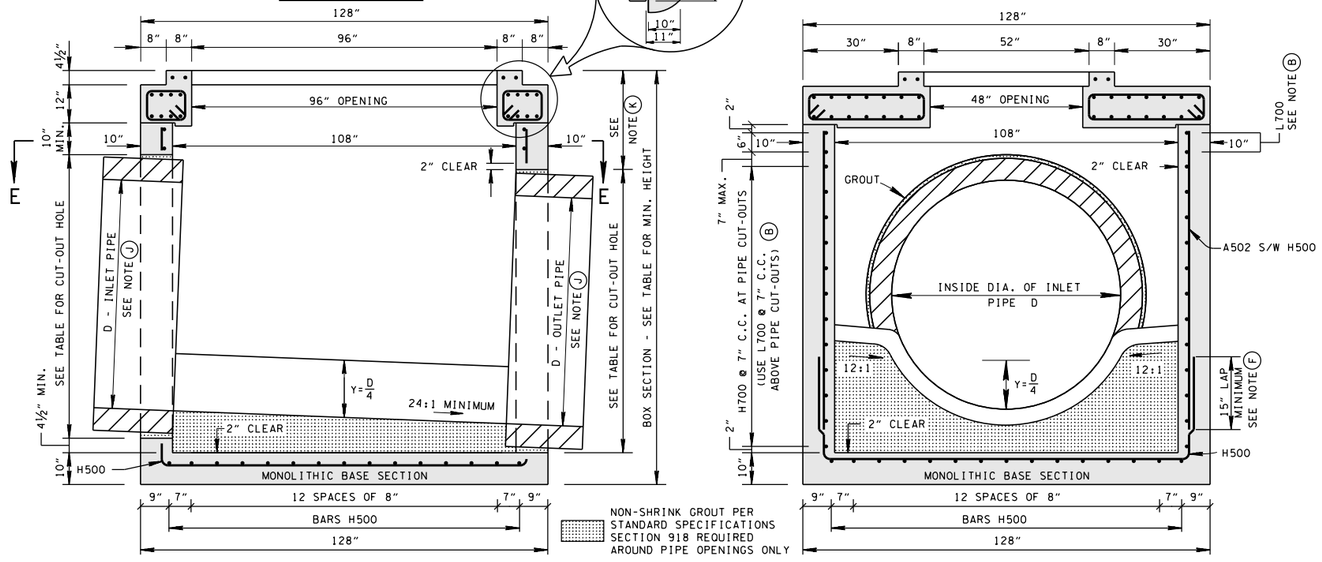


GRATE UNIT NO. 40

GRATE UNIT IS STRUCTURALLY DESIGNED TO CARRY LOW SPEED MAINTENANCE VEHICLES ONLY.

NOTE: MATERIAL FOR GRATE SPECIFICATIONS FOR STEEL BARS SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE PAINTED BLACK, FEDERAL SPEC. TT-E-489G.

WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION)



SECTION A-A

SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 40SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 40SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

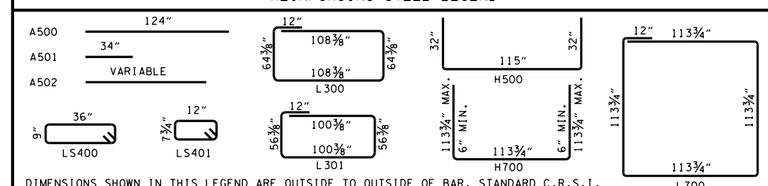
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26½ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) CONCRETE JOINT MATERIAL TO BE ½ INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD SPECIFICATIONS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-40.02 CATCH BASINS, TYPE 40, > 4'-8' DEPTH THROUGH 611-40.05, CATCH BASINS, TYPE 40, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE.

REINFORCING STEEL LEGEND



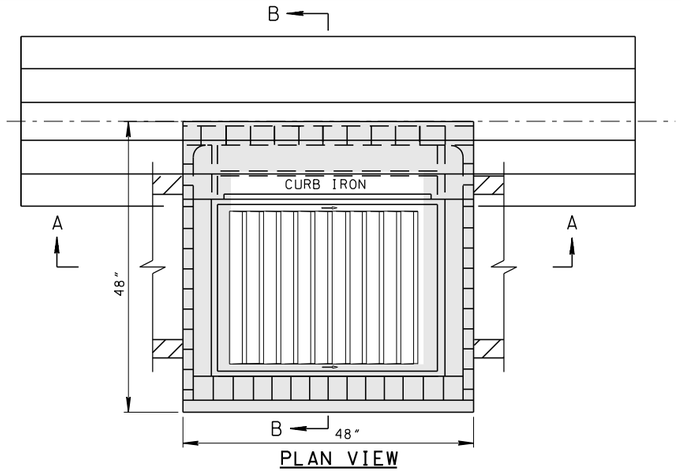
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

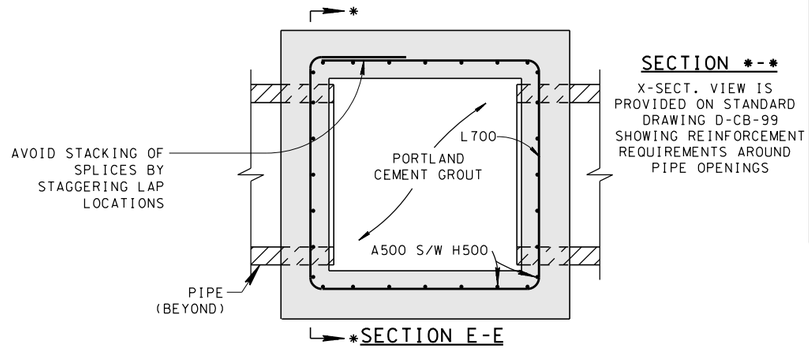
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 40 CATCH BASIN

NOT TO SCALE | 9-11-04 | D-CB-40SE



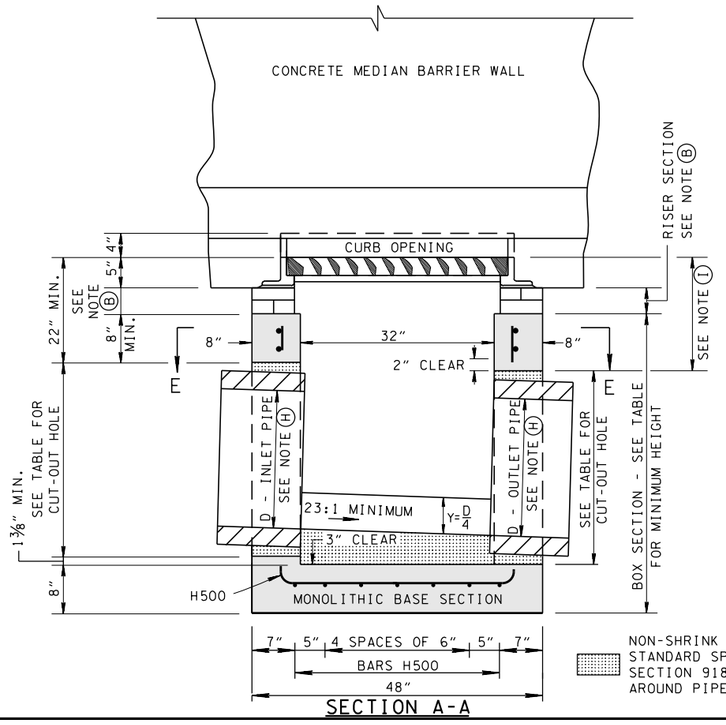
PLAN VIEW



*SECTION E-E

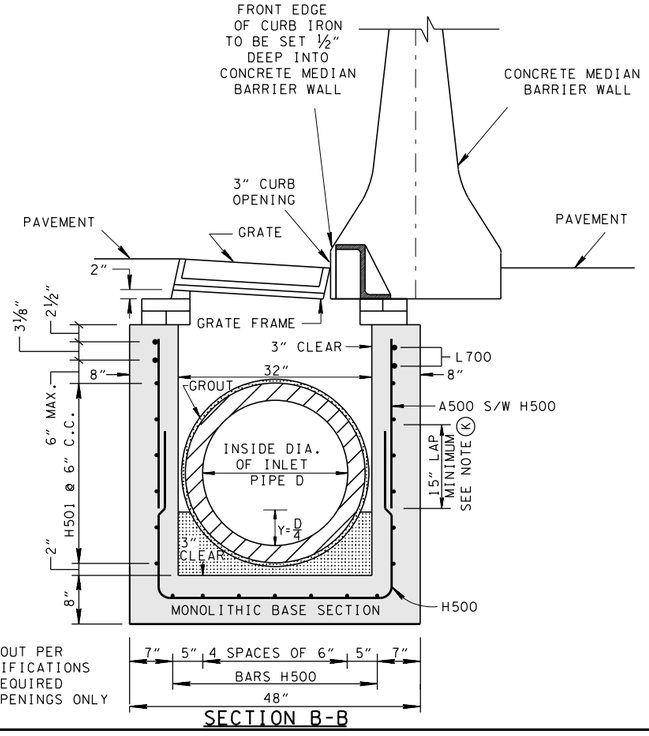
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41LP (LOW PROFILE) AND ALL PRECAST NO. 41LP (LOW PROFILE) CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 9 INCHES AS LONG AS 22 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(I) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 22 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(J) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

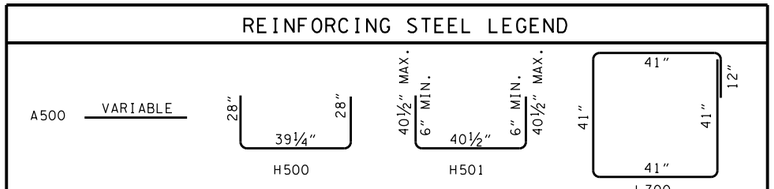
(K) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(L) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.01 CATCH BASINS, TYPE 41, 0'-4' DEPTH AND 611-41.02, CATCH BASINS, TYPE 41, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

- ☐ REV. 5-27-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE. CHANGED PRECAST CONCRETE SPECIFICATION. ADDED CATCH BASIN MAXIMUM DEPTH REQUIREMENT NOTE.
- ☐ REV. 7-29-99: MODIFIED REINFORCING STEEL.
- ☐ REV.12-18-00: CHANGED DRAWING NO. FROM D-CB-41SA TO D-CB-41LP.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- ☐ REV. 7-29-04: CHANGED GENERAL NOTE (I)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	42⅜	3.74
24	3	32	49⅜	4.28

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) THE SUM OF BOX SECTION HEIGHT & RISER SECTION HEIGHT SHALL NOT EXCEED 61".

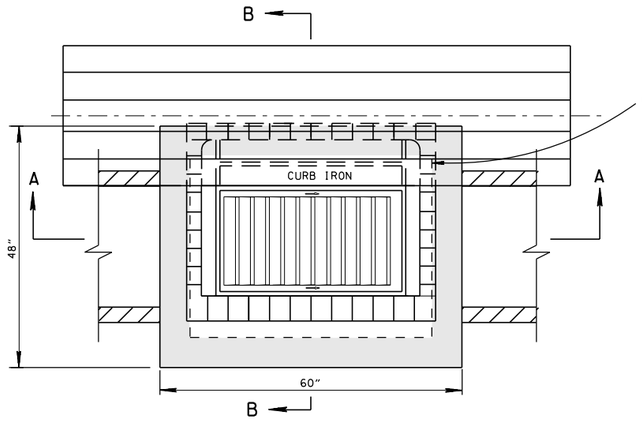
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

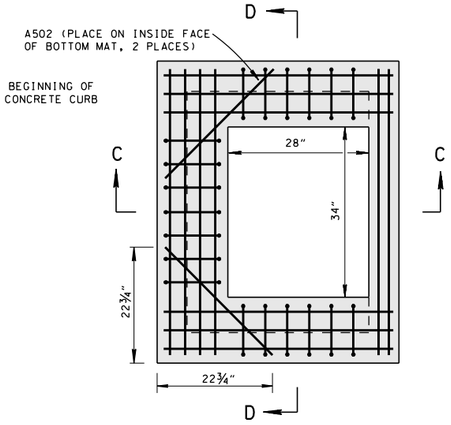
LOW PROFILE 32" x 32" SQUARE CONCRETE NO.41LP CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

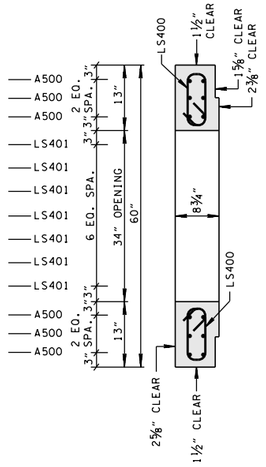
NOT TO SCALE | 5-27-98 | D-CB-41LP



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.71
24	3	32	56	4.25
(4) 30	3½	39	63	4.79
(4) 36	4	46	70	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

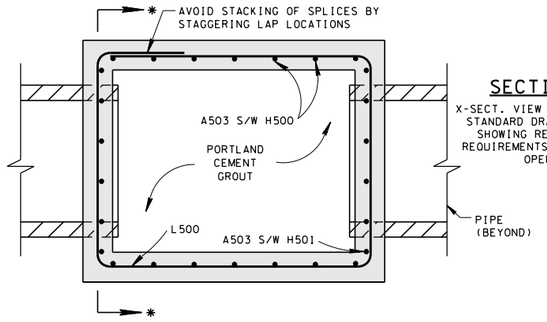
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: MODIFIED DRAWING NO. D-CB-41S BY CHANGING WALL AND FLOOR THICKNESSES FROM EIGHT TO SIX INCHES FOR PRECAST CATCH BASIN BETWEEN MINIMUM DEPTH AND TEN FEET.
- ☐ REV. 10-26-96: REMOVE 0.875" HOLE FROM BACK OF CURB IRON IN SECTION B-B.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (K) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (I)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)

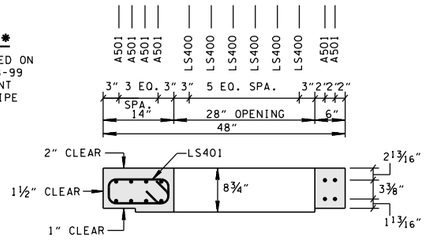
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

SECTION E-E



SECTION C-C

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL PRECAST NO. 41 CONCRETE CATCH BASINS THAT ARE BETWEEN MINIMUM DEPTH AND TWELVE FEET. SEE STANDARD DRAWING D-CB-41S FOR DETAILS OF CAST-IN-PLACE NO. 41 CONCRETE CATCH BASINS AND PRECAST NO. 41 CONCRETE CATCH BASINS THAT ARE GREATER TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) ALL PRECAST ELEMENTS SHALL MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

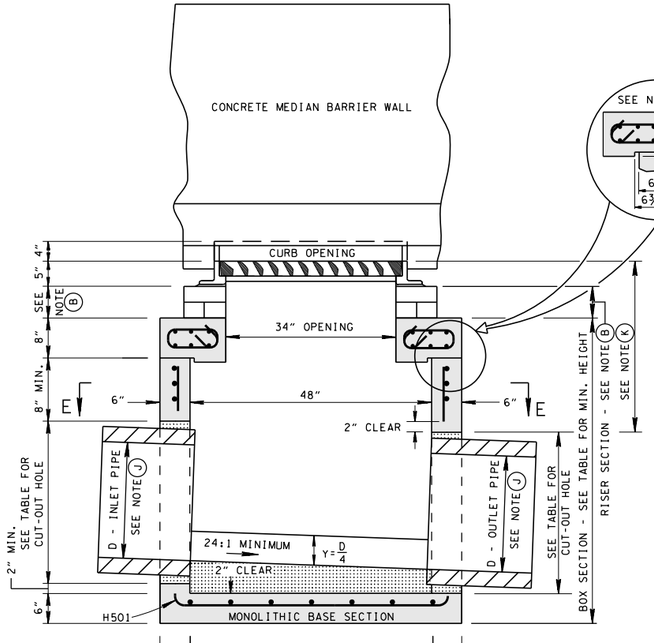
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

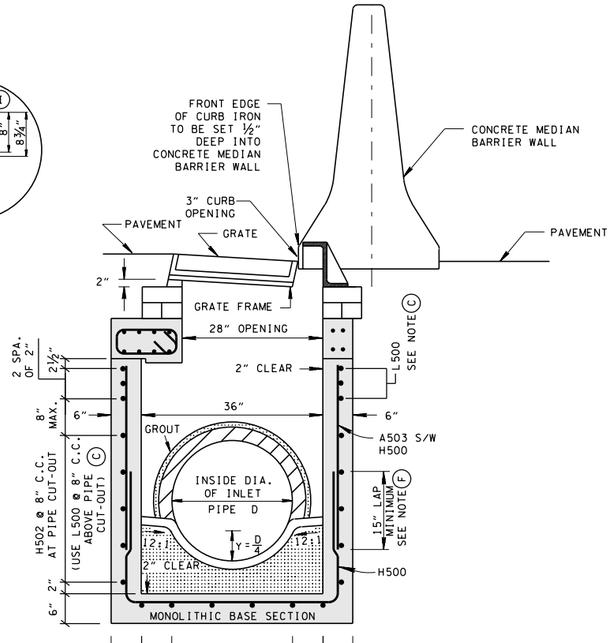
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.01 CATCH BASINS, TYPE 41, 0'-4' DEPTH THROUGH 611-41.03, CATCH BASINS, TYPE 41, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

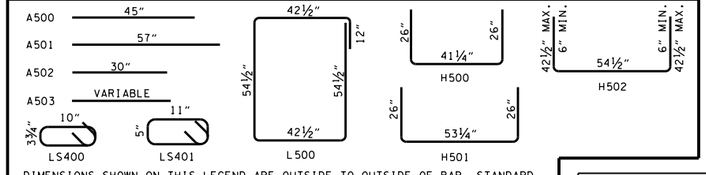


SECTION A-A



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

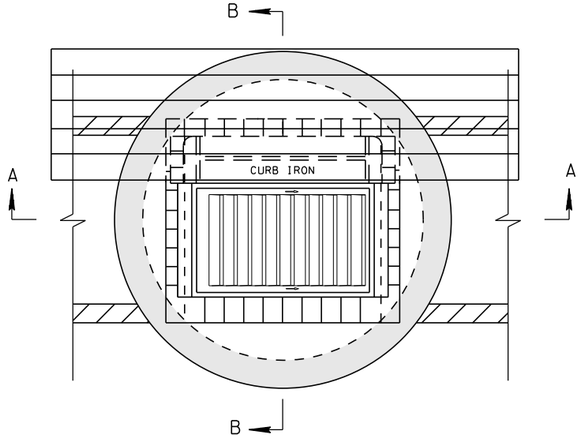
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

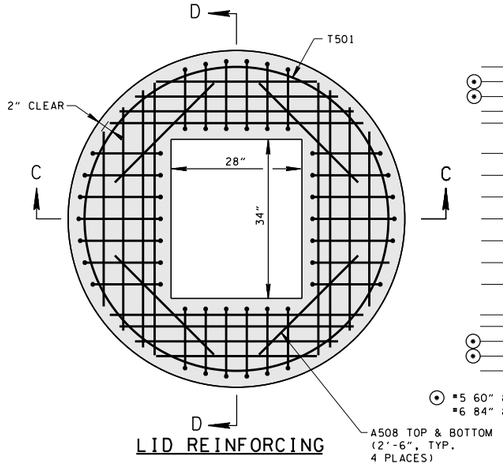
STANDARD 4' X 3' PRECAST RECTANGULAR CONCRETE NO. 41 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

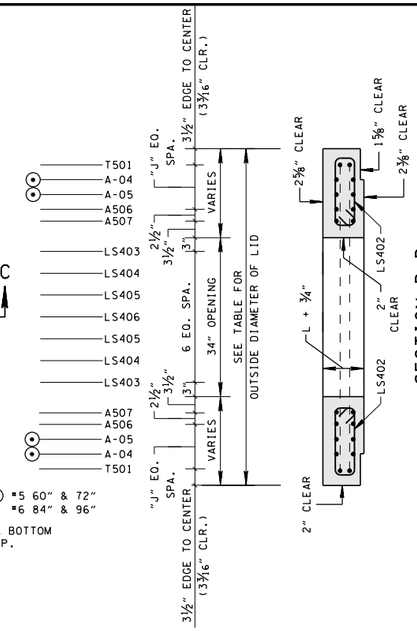
NOT TO SCALE | 12-18-95 | D-CB-41P



PLAN VIEW



LID REINFORCING



SECTION D-D

- ☐ REV. 1-19-99: CHANGED MINIMUM DEPTH TABLE AND DRAWING IN GENERAL TO REFLECT REDUCTION IN INVERT DROP ACROSS CATCH BASIN.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE. CHANGED REINFORCING STEEL IN LID.
- REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

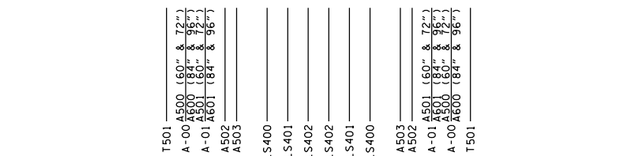
CATCH BASIN MAXIMUM DEPTH NOTE

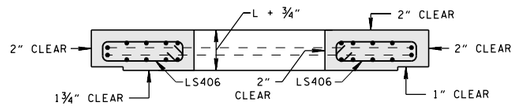
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4
84	100	5
96	114	6

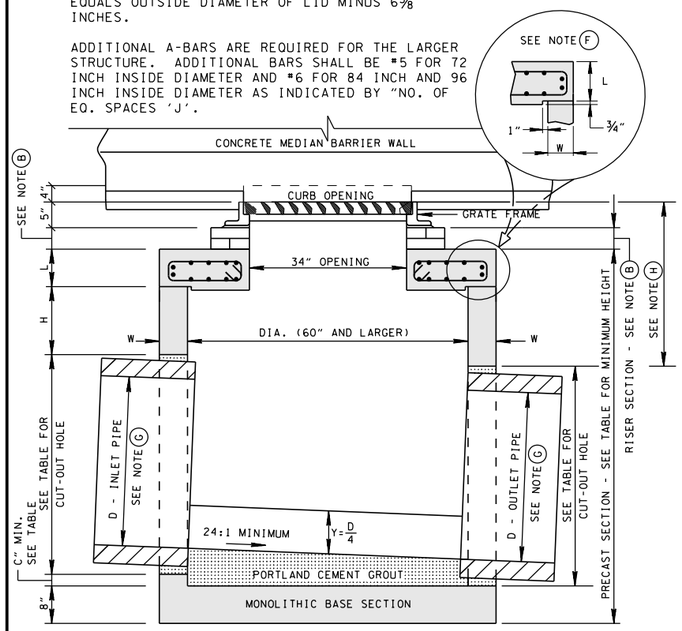
OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURE. ADDITIONAL BARS SHALL BE #5 FOR 72 INCH INSIDE DIAMETER AND #6 FOR 84 INCH AND 96 INCH INSIDE DIAMETER AS INDICATED BY "NO. OF EQ. SPACES 'J'.



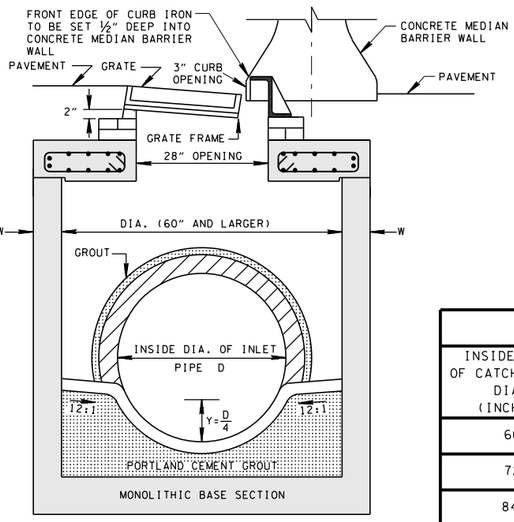


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

- (1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
- (2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
- (3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

CATCH BASIN DIMENSIONS							FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)							
			60"	72"	84"	96"	60"	72"	84"	96"
18	2½	25	51½	53	57½	59	3.75	3.88	4.25	4.38
24	3	32	58½	60	64½	66	4.29	4.42	4.79	4.92
30	3½	39	65½	67	71½	73	4.83	4.96	5.33	5.46
36	4	46	72½	74	78½	80	5.38	5.50	5.88	6.00
42	4½	53	79½	81	85½	87	5.92	6.04	6.42	6.54
48	5	60	86½	88	92½	94	6.46	6.58	6.96	7.08
54	5½	67	93½	95	99½	101	7.00	7.13	7.50	7.63
60	6	74	100½	102	106½	108	7.54	7.67	8.04	8.17
66	6½	81	107½	109	113½	115	8.08	8.21	8.58	8.71

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCHES (FOR 72 INCH INSIDE DIAMETER CATCH BASIN, 26 INCHES (FOR 84 INCH INSIDE DIAMETER CATCH BASIN OR 27 INCHES (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(D) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 22 INCH DEPTH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 26 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(J) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.01 CATCH BASINS, TYPE 41, 0'-4' DEPTH THROUGH 611-41.07, CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-41.08, CATCH BASINS, TYPE 41, ____'- ____' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION	
						C (INCHES)	H (INCHES)
60	6	8	72	36	24	2.5	8
72	7	9	86	48	30	3.0	8
84	8	9	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

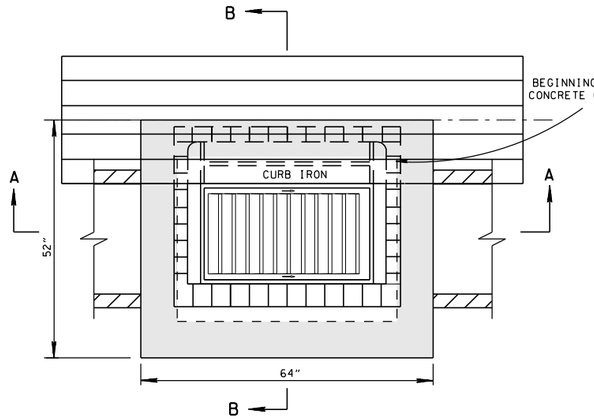
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

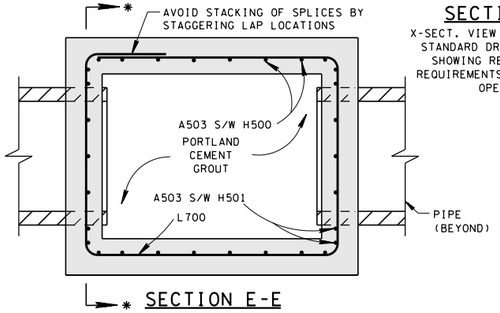
STANDARD PRECAST CIRCULAR NO. 41 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

NOT TO SCALE | 7-29-97 | D-CB-41RB



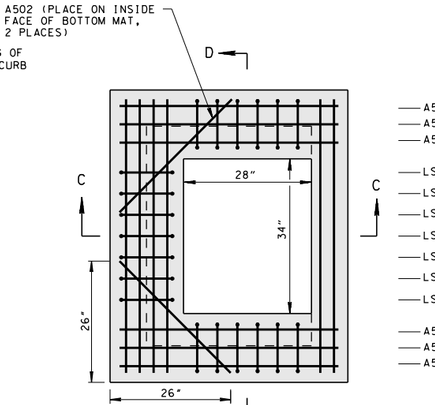
PLAN VIEW



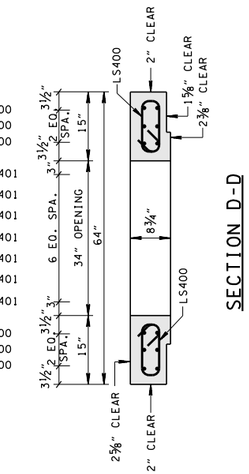
SECTION E-E

SECTION *-*

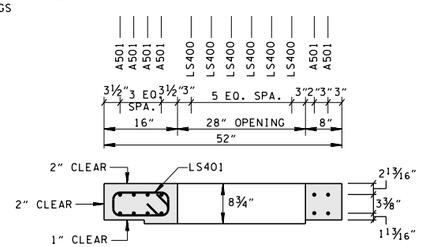
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



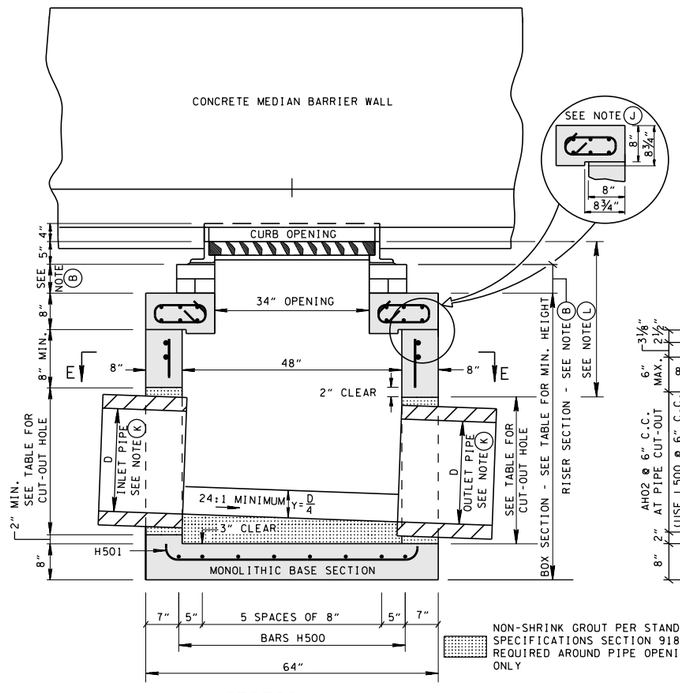
PLAN VIEW



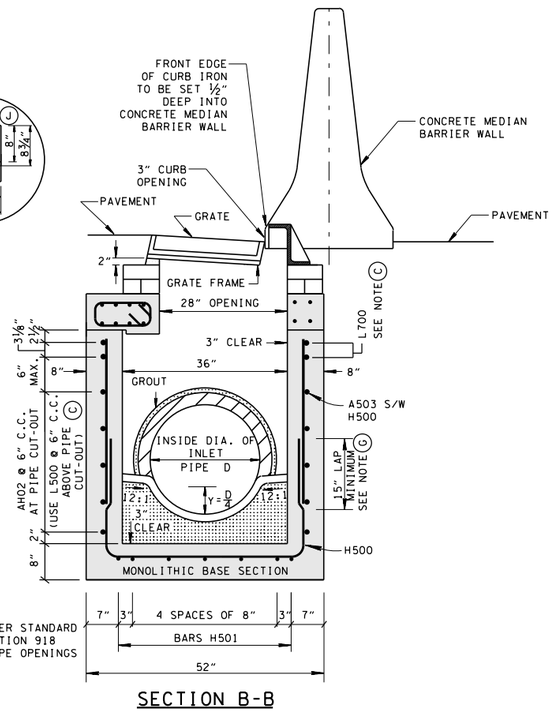
SECTION D-D



SECTION C-C



SECTION A-A



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
(4) 30	3½	39	65	4.79
(4) 36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 48 INCH INTERIOR WALLS ONLY.

- ☐ REV. 12-18-95: CHANGED DRAWING NO. FROM D-CB-41 TO D-CB-41S. CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT HOLE NOTES.
- ☐ REV. 10-26-96: REMOVE 0.875" HOLE FROM BACK OF CURB IRON IN SECTION B-B.
- ☐ REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE NOTES.
- ☐ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41 CONCRETE CATCH BASINS AND ALL PRECAST NO. 41 CONCRETE CATCH BASINS THAT ARE GREATER THAN TWELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-41P FOR DETAILS OF PRECAST NO. 41 CONCRETE CATCH BASINS TWELVE FEET AND LESS IN DEPTH.SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERITES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

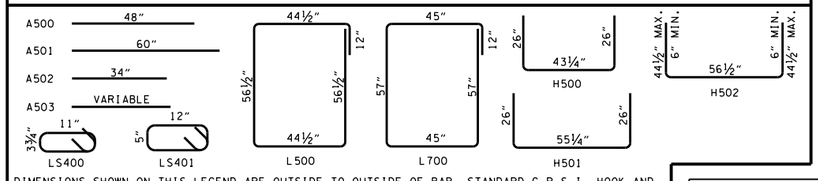
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.01 CATCH BASINS, TYPE 41, 0'-4' DEPTH THROUGH 611-41.05 CATCH BASINS, TYPE 41, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

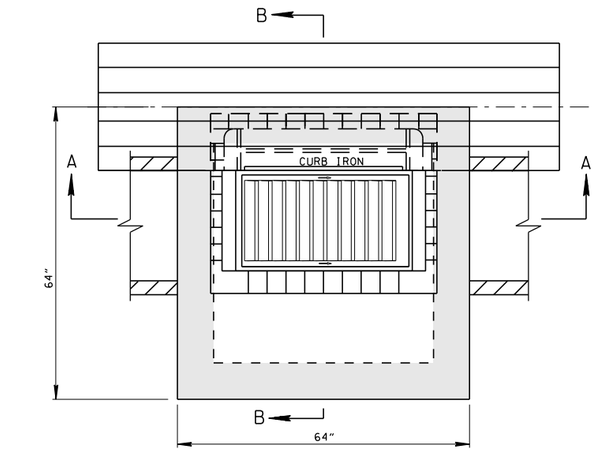
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

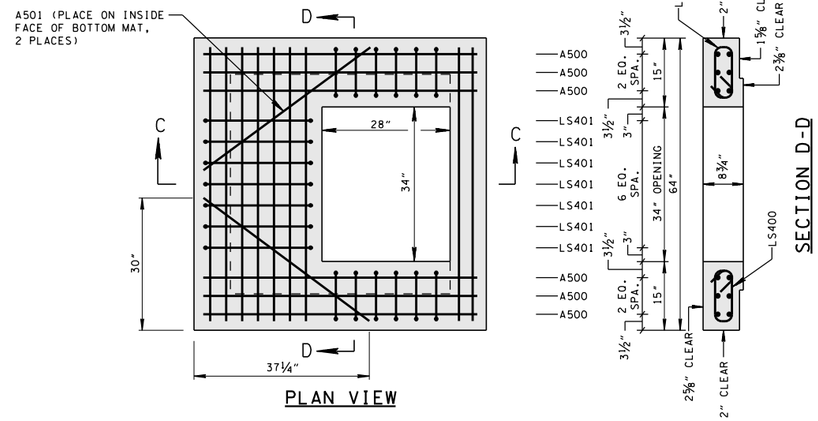
STANDARD 4' X 3' RECTANGULAR CONCRETE NO. 41 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

10-26-95 D-CB-41S

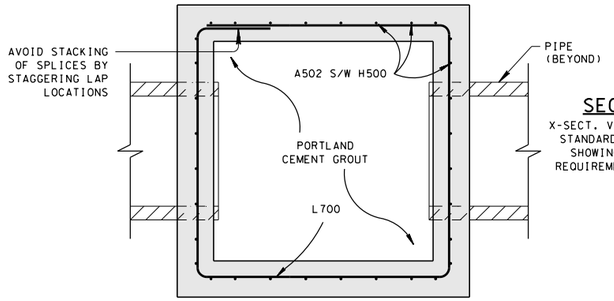


PLAN VIEW



PLAN VIEW

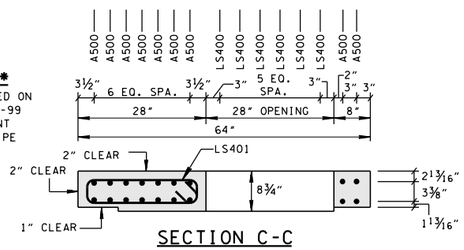
SECTION D-D



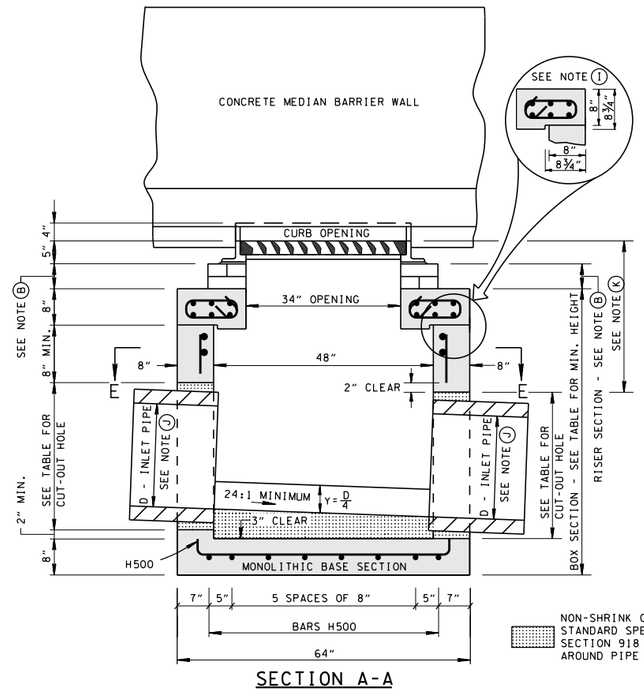
SECTION E-E

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

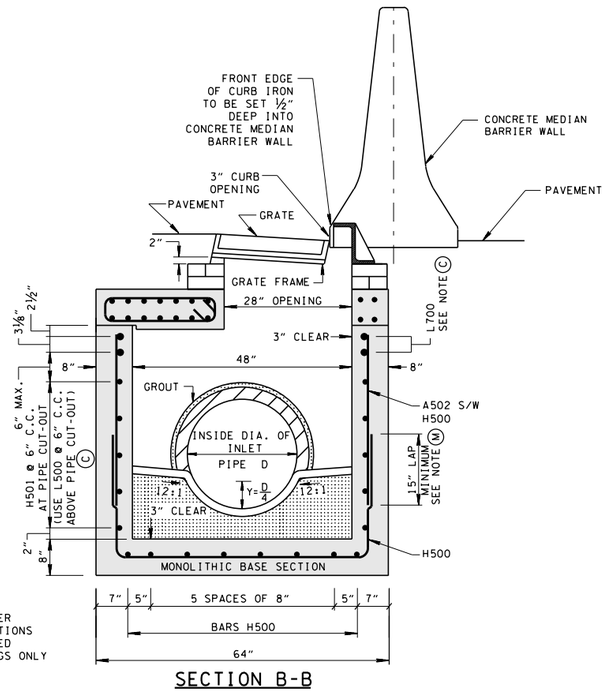


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.71
24	3	32	58	4.25
30	3½	39	65	4.79
36	4	46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 41SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

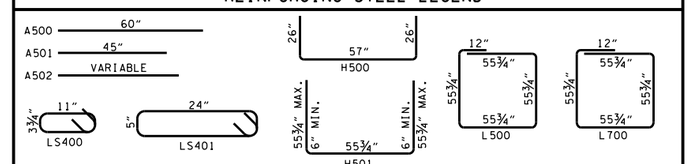
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.01 CATCH BASINS, TYPE 41, 0'-4' DEPTH THROUGH 611-41.07 CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

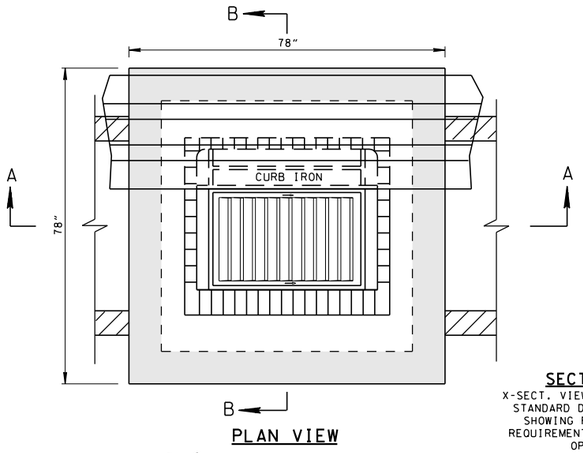
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 41 CATCH BASIN

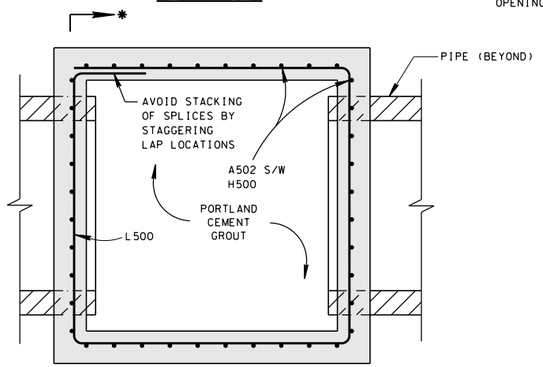
(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

NOT TO SCALE | 5-27-98 | D-CB-41SB

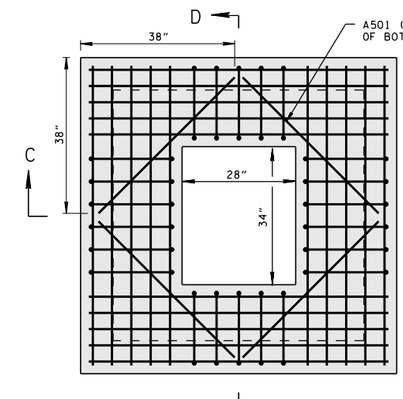


PLAN VIEW

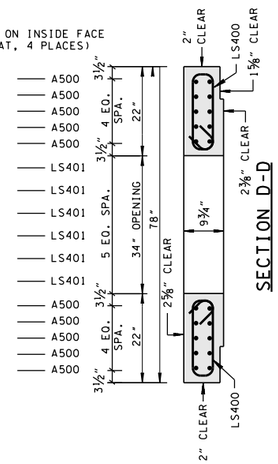
SECTION ●-●
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



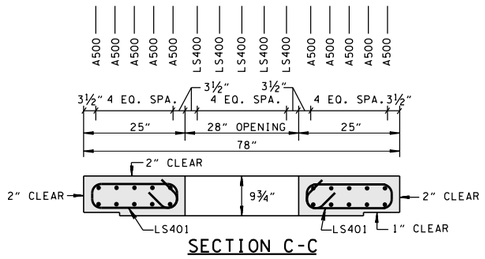
SECTION E-E



PLAN VIEW



SECTION D-D



SECTION C-C

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	55	4.01
24	3	32	62	4.55
30	3½	39	69	5.09
36	4	46	76	5.63
42	4½	53	83	6.17
48	5	60	90	6.72

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 41SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

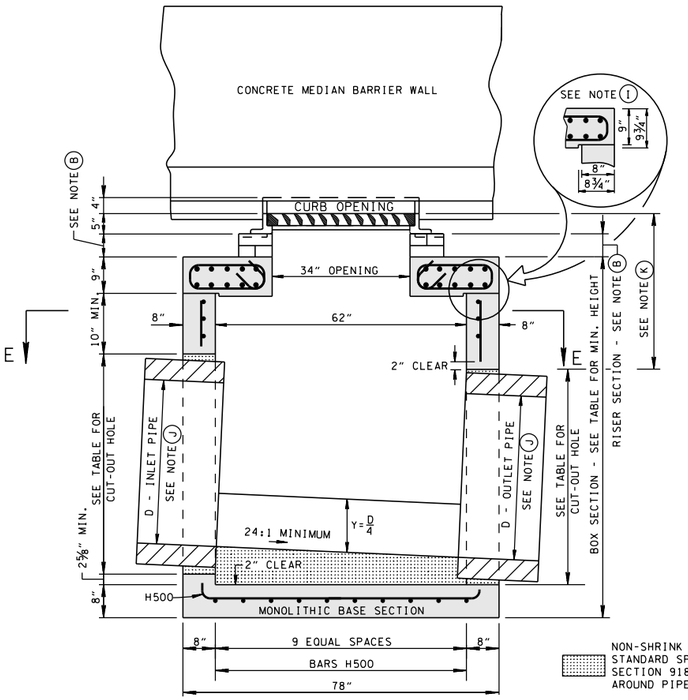
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

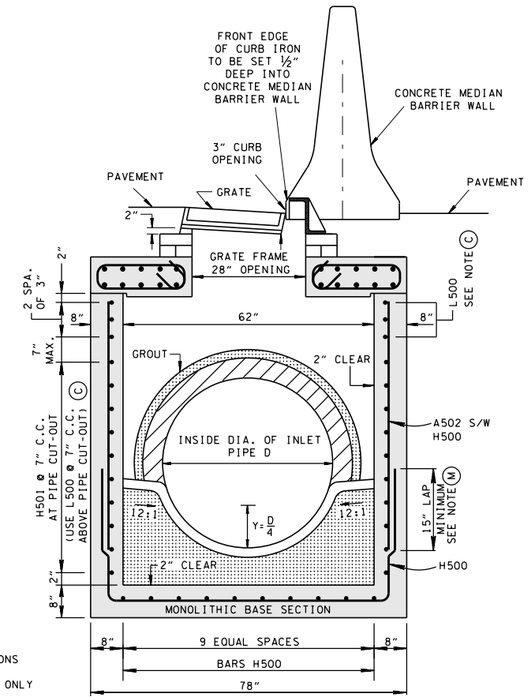
(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.02 CATCH BASINS, TYPE 41, > 4'-8' DEPTH THROUGH 611-41.07 CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

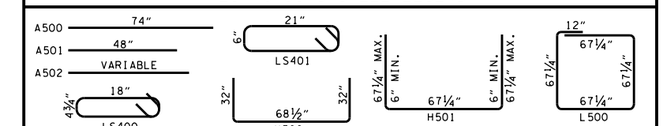


SECTION A-A



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

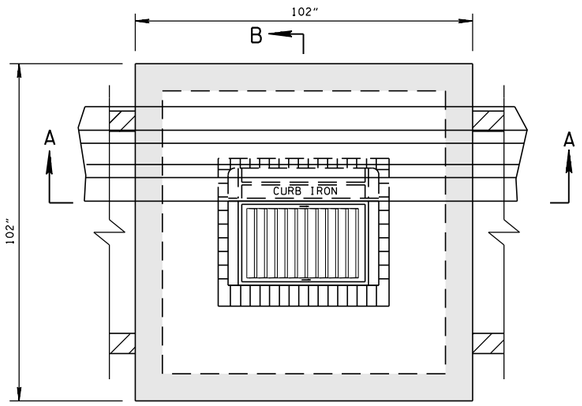
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

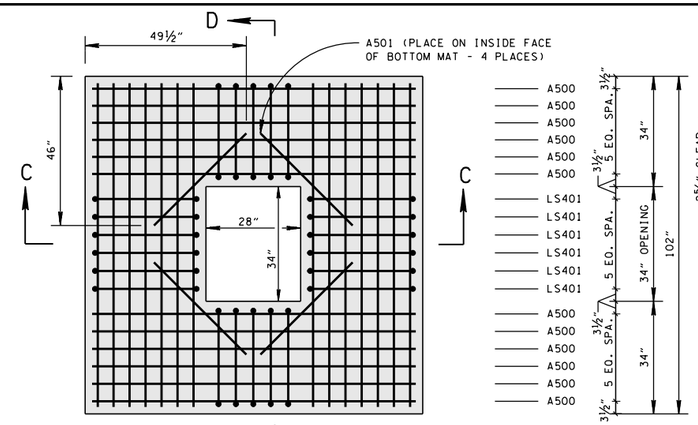
STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 41 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

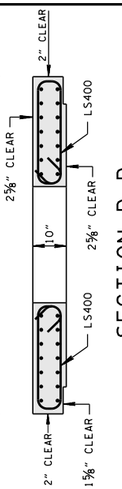
NOT TO SCALE | 9-5-00 | D-CB-41SC



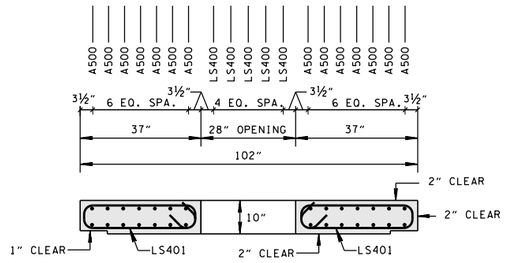
PLAN VIEW



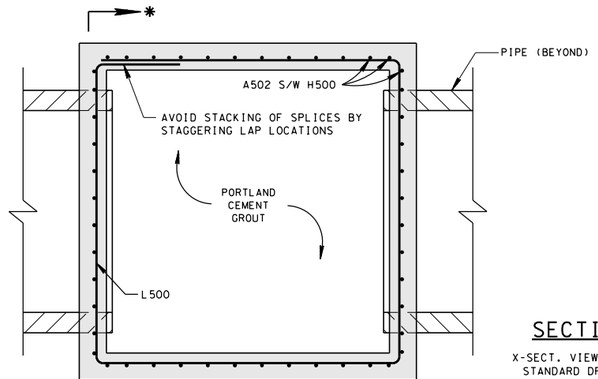
PLAN VIEW



SECTION D-D



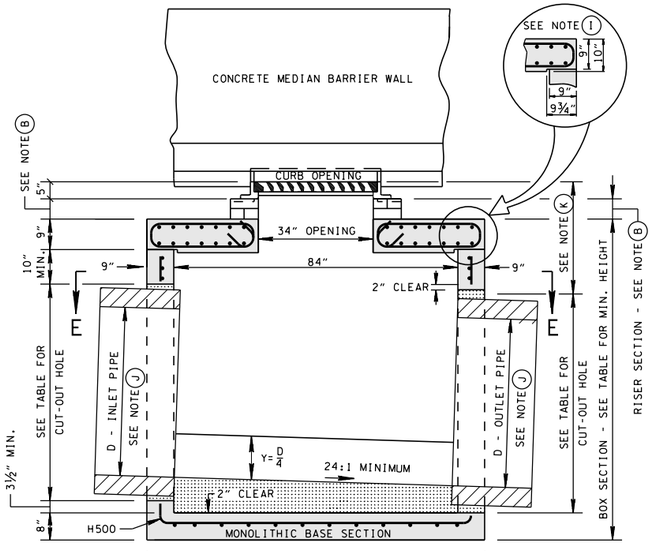
SECTION C-C



SECTION E-E

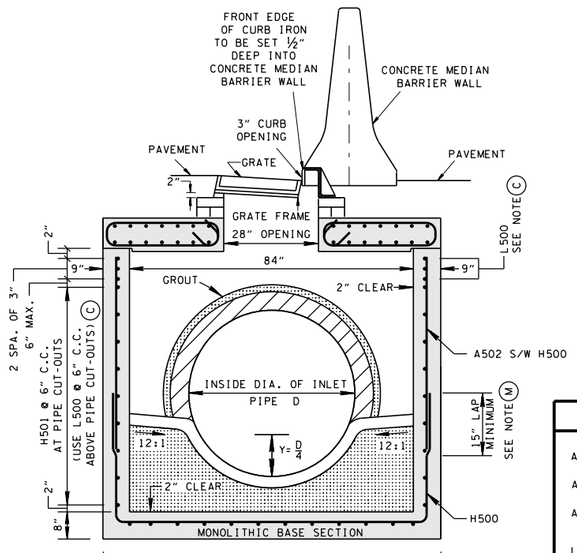
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	55½	4.08
24	3	32	62½	4.63
30	3½	39	69½	5.17
36	4	46	76½	5.71
42	4½	53	83½	6.25
48	5	60	90½	6.79
54	5½	67	97½	7.33
60	6	74	104½	7.88
66	6½	81	111½	8.42

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 41SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

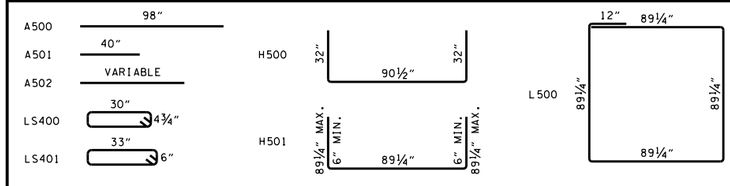
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.02 CATCH BASINS, TYPE 41, > 4'-8' DEPTH THROUGH 611-41.07 CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

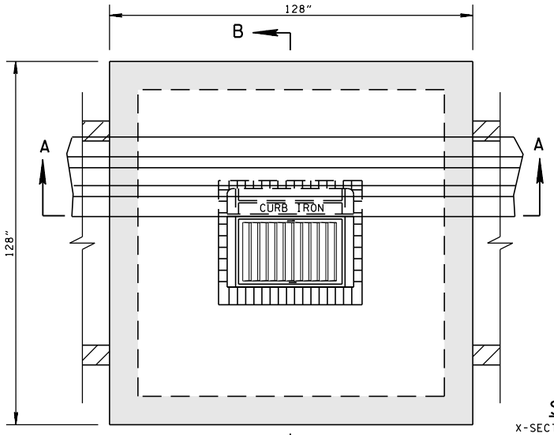
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

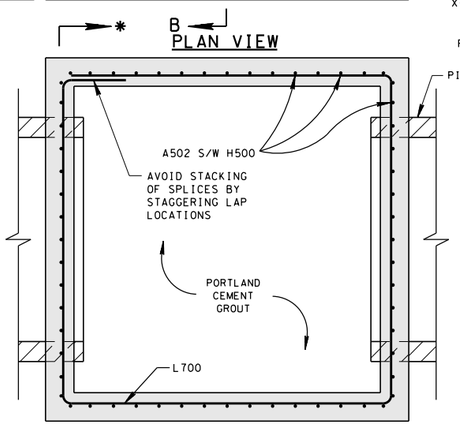
STANDARD
7' X 7' SQUARE
CONCRETE NO. 41
CATCH BASIN
(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

7-10-02 | D-CB-41SD

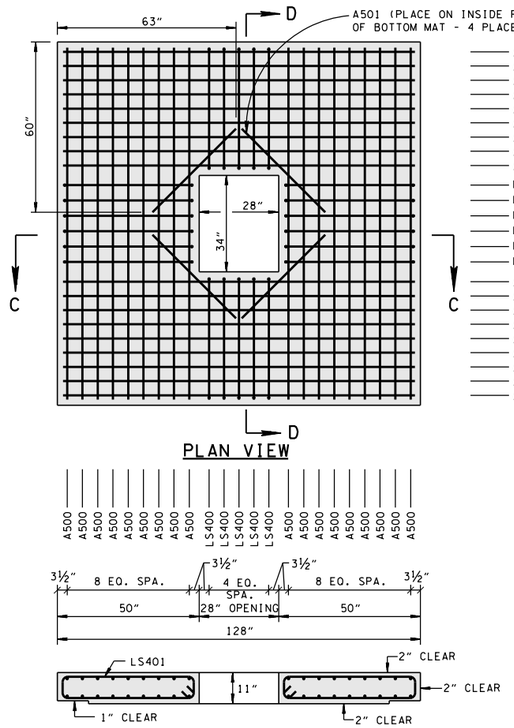


SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

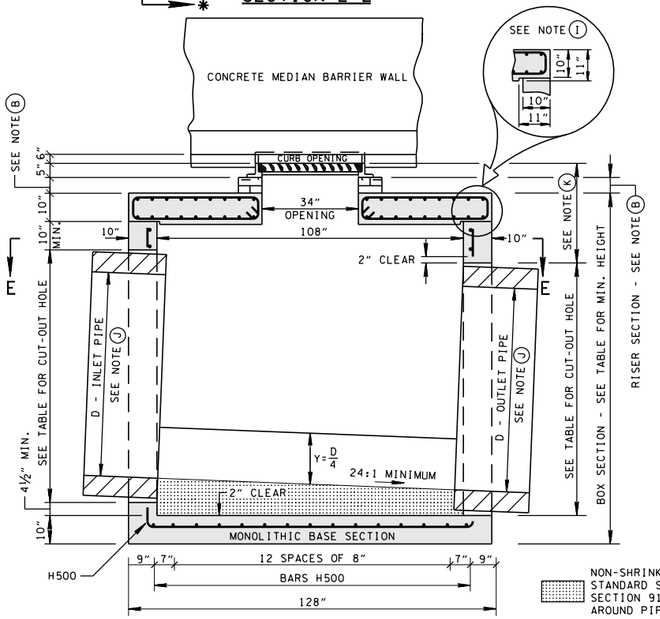


SECTION E-E



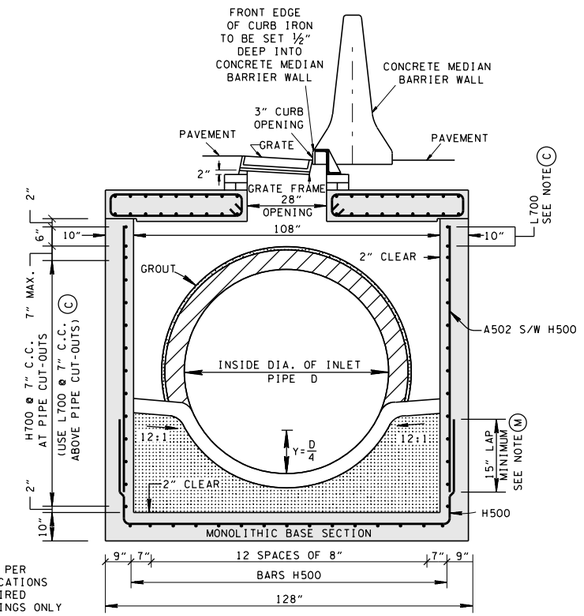
SECTION D-D

SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	59½	4.25
24	3	32	66½	4.79
30	3½	39	73½	5.33
36	4	46	80½	5.88
42	4½	53	87½	6.42
48	5	60	94½	6.96
54	5½	67	101½	7.50
60	6	74	108½	8.04
66	6½	81	115½	8.58
72	7	88	122½	9.13
78	7½	95	129½	9.67

- (1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
- (2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
- (3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 41SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 41SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 25 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

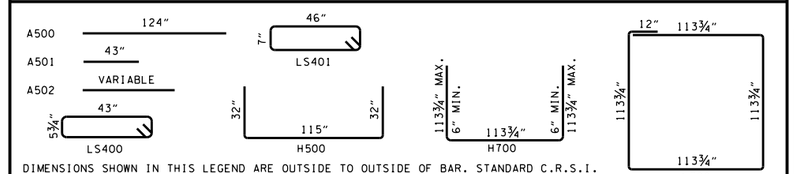
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.02 CATCH BASINS, TYPE 41, > 4'-8' DEPTH THROUGH 611-41.07 CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

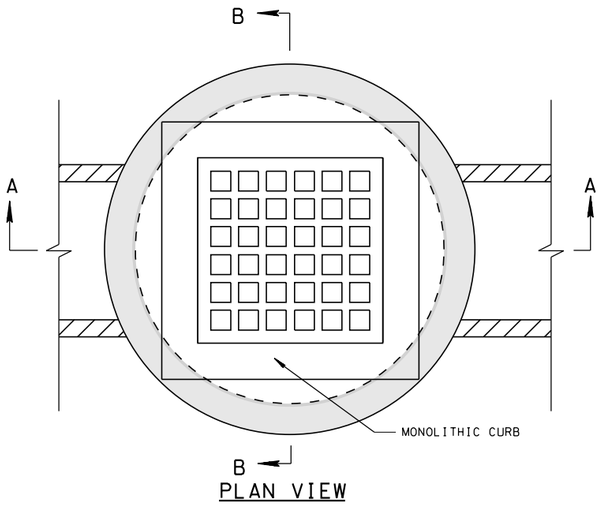
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

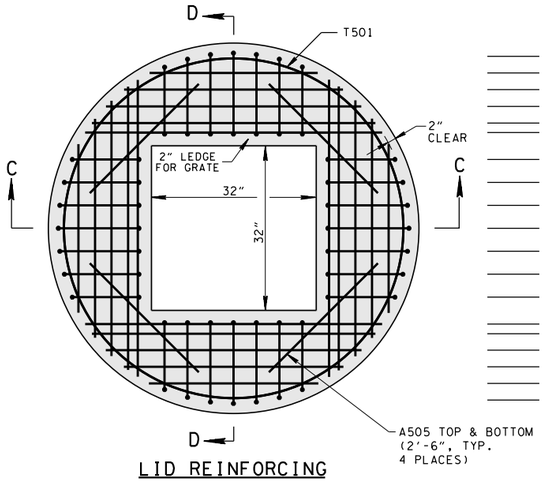
STANDARD 9' X 9' SQUARE CONCRETE NO. 41 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

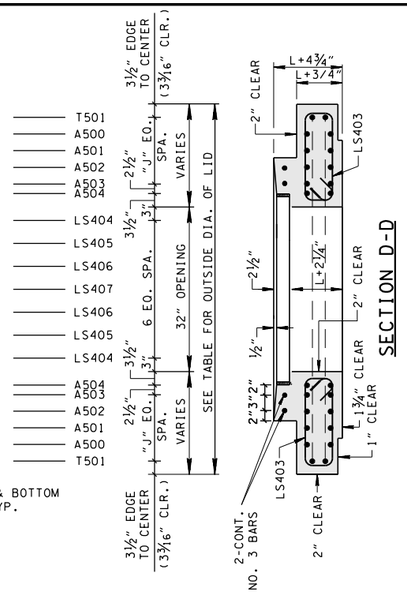
NOT TO SCALE | 7-10-02 | D-CB-41SE



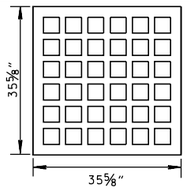
PLAN VIEW



LID REINFORCING



SECTION D-D



GRATE UNIT NO. 42

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS										
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			
			60"	72"	84"	96"	60"	72"	84"	96"
18	2½	25	55½	57	61½	63	3.67	3.79	4.17	4.29
24	3	32	62½	64	68½	70	4.21	4.33	4.71	4.83
30	3½	39	69½	71	75½	77	4.75	4.88	5.25	5.38
36	4	46	76½	78	82½	84	5.29	5.42	5.79	5.92
42	4½	53	83½	85	89½	91	5.83	5.96	6.33	6.46
48	5	60	90½	92	96½	98	6.38	6.50	6.88	7.00
54	5½	67	97½	99	103½	105	6.92	7.04	7.42	7.54
60	6	74	104½	106	110½	112	7.46	7.58	7.96	8.08
66	6½	81	111½	113	117½	119	8.00	8.13	8.50	8.63

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

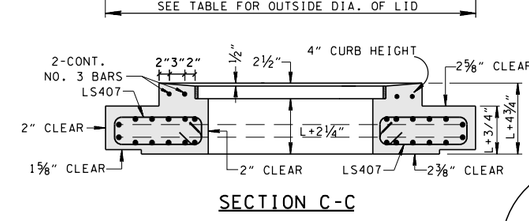
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

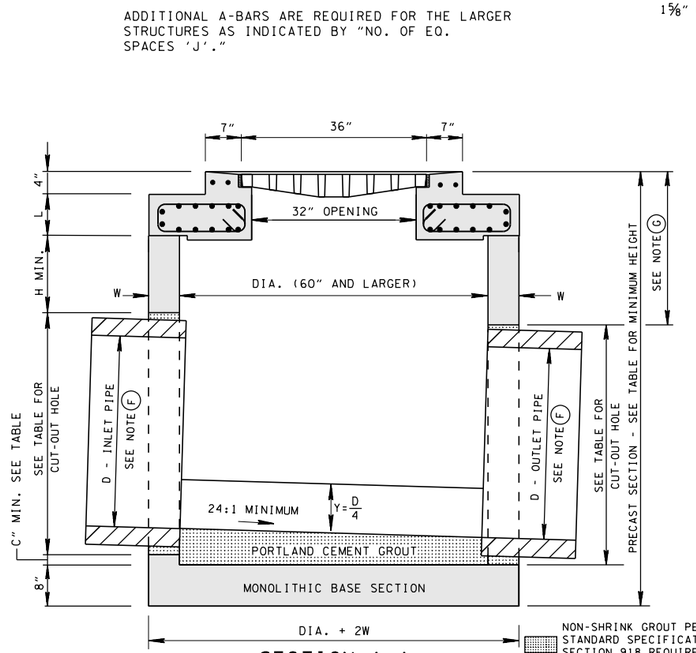
VARIABLE REINFORCING DIMENSIONS AND SPACING IN CONCRETE LID		
INSIDE DIA. OF CATCH BASIN (INCHES)	OUTSIDE DIA. OF LID (INCHES)	NO. OF EQUAL SPACES "J"
60	72	3
72	86	4
84	100	5
96	114	6

OUT-TO-OUT DIAMETER FOR T501 REINFORCING BARS EQUALS OUTSIDE DIAMETER OF LID MINUS 6⅜ INCHES.

ADDITIONAL A-BARS ARE REQUIRED FOR THE LARGER STRUCTURES AS INDICATED BY "NO. OF EQ. SPACES 'J'."

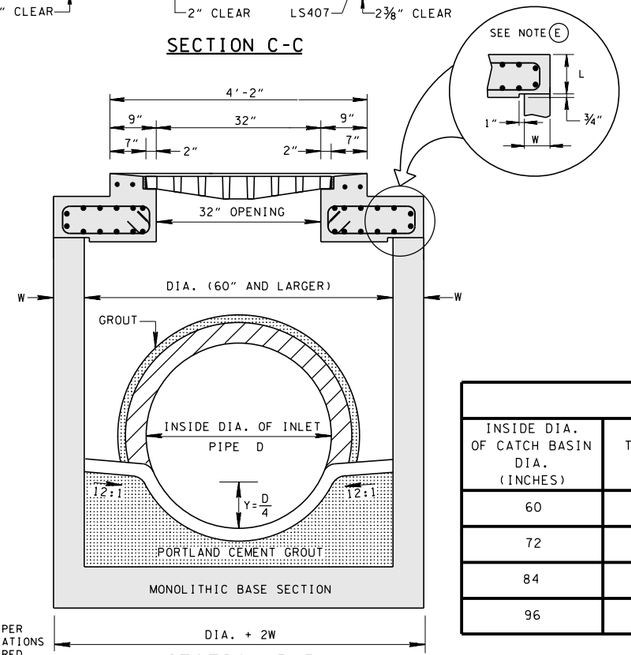


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(C) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(D) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(F) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 20 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN), 21 INCH DEPTH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN), 25 INCH DEPTH (FOR 84 INCH INSIDE DIAMETER CATCH BASIN) OR 26 INCH DEPTH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(H) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATE.

(I) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-42.01 CATCH BASINS, TYPE 42, 0'-4' DEPTH THROUGH 611-42.07, CATCH BASINS, TYPE 42, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-42.08, CATCH BASINS, TYPE 42, ____ '- ____' DEPTH PER EACH. PAYMENT INCLUDES GRATE.

CATCH BASIN DIMENSIONS							
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF CATCH BASIN DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)	DIMENSION	
						C (INCHES)	H (INCHES)
60	6	8	72	36	24	2.5	8
72	7	9	86	48	30	3.0	8
84	8	9	100	60	36	3.5	12
96	9	10	114	66	42	4.0	12

REV. 1-19-99: ADDED CURB HEIGHT.

REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

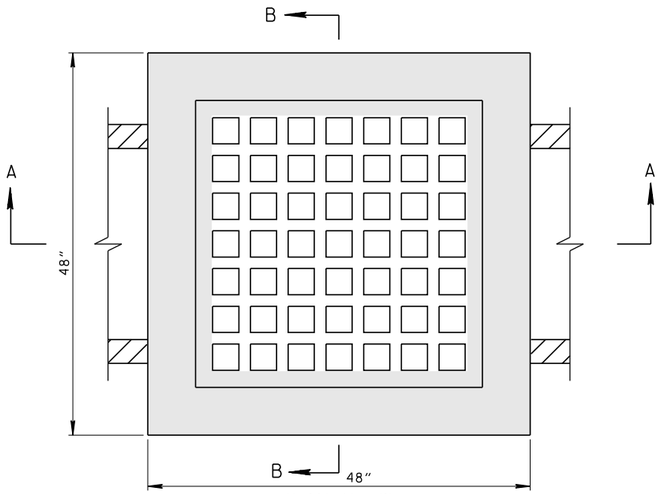
REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

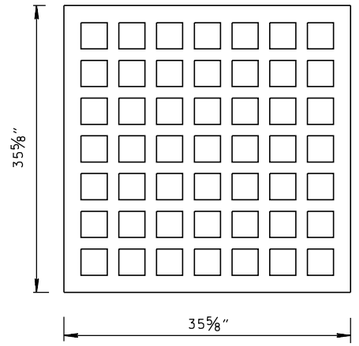
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN

NOT TO SCALE | 10-26-97 | D-CB-42RB



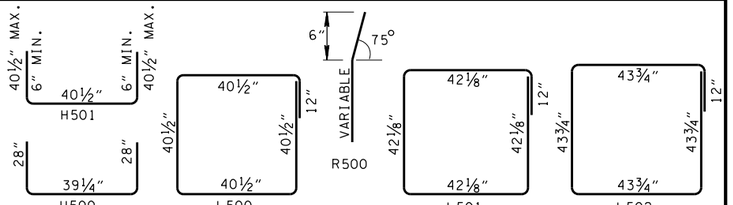
PLAN VIEW



GRATE UNIT NO. 42

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

- ☐ REV. 5-27-99: ADDED CATCH BASIN MAXIMUM DEPTH REQUIREMENT NOTE.
- ☐ REV. 5-30-01: CHANGED MAXIMUM DEPTH TABLE.
- ☐ REV. 6-10-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 1-19-05: CORRECTED PAY ITEM NO. 611-42.02 IN GENERAL NOTE (J)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 42S AND ALL PRECAST NO. 42S CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(C) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(D) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(E) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(F) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

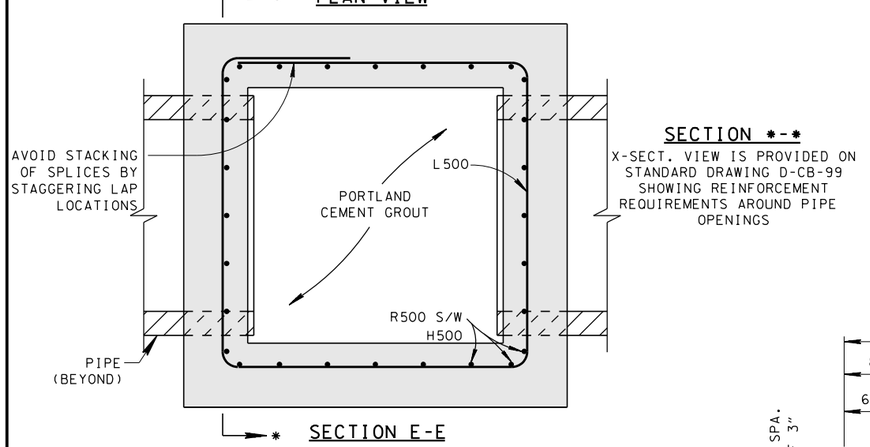
(G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 12 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(I) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

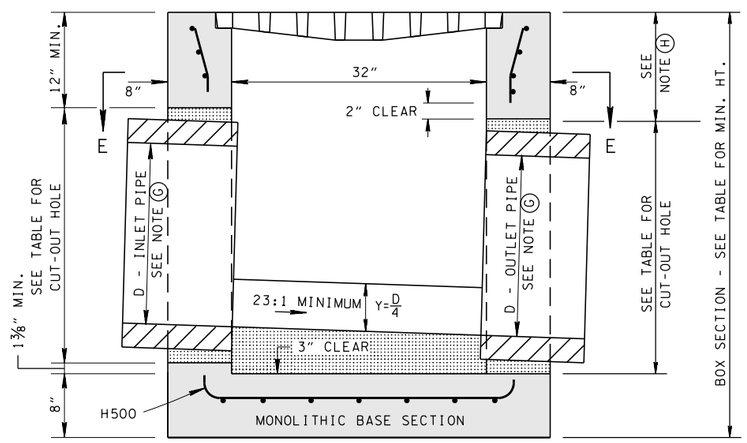
(J) THE CONTRACTOR MAY ELIMINATE THE R500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS AND BENDING THE TOP 6 INCHES AT 75° SO THAT 2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(K) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-42.01 CATCH BASINS, TYPE 42, 0'-4' DEPTH AND 611-42.02, CATCH BASINS, TYPE 42, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES GRATE.



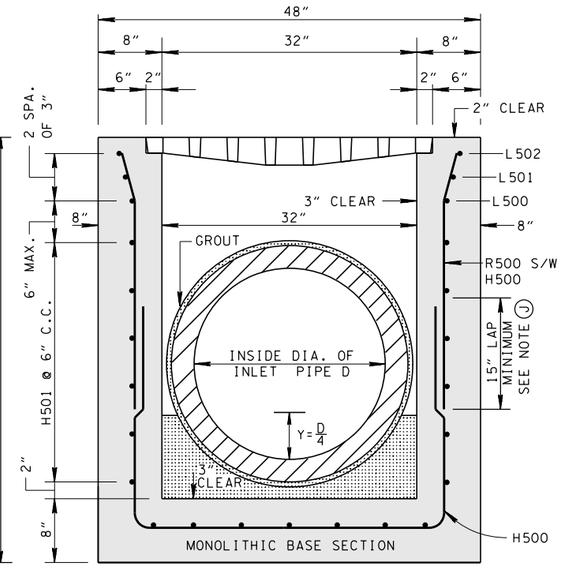
SECTION E-E

SECTION *-*
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	47	2.96
24	3	32	54	3.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

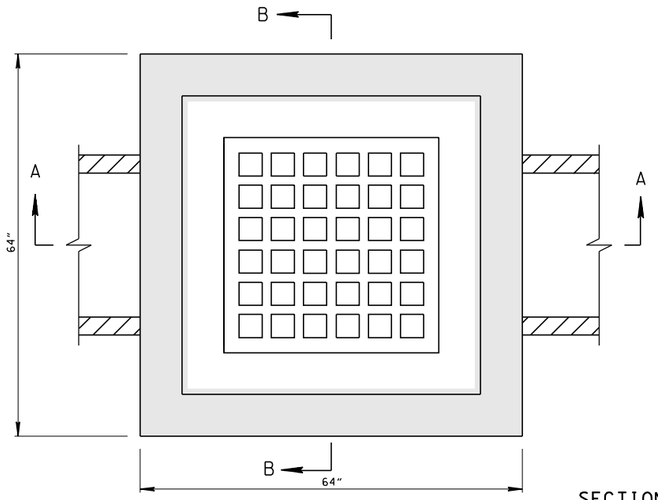
(4) THE HEIGHT OF THE BOX SECTION SHALL NOT EXCEED 66".

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

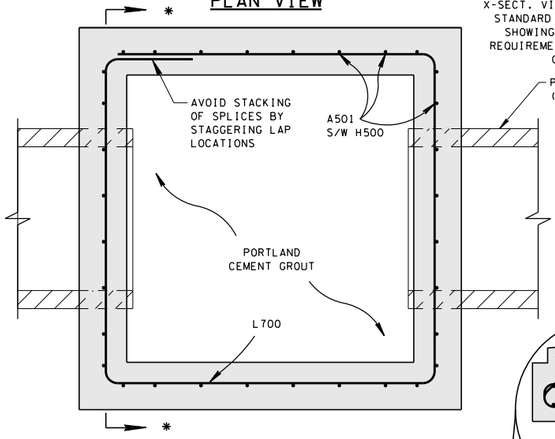
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 32" x 32" SQUARE CONCRETE NO.42 CATCH BASIN

NOT TO SCALE | 10-26-97 | D-CB-42S



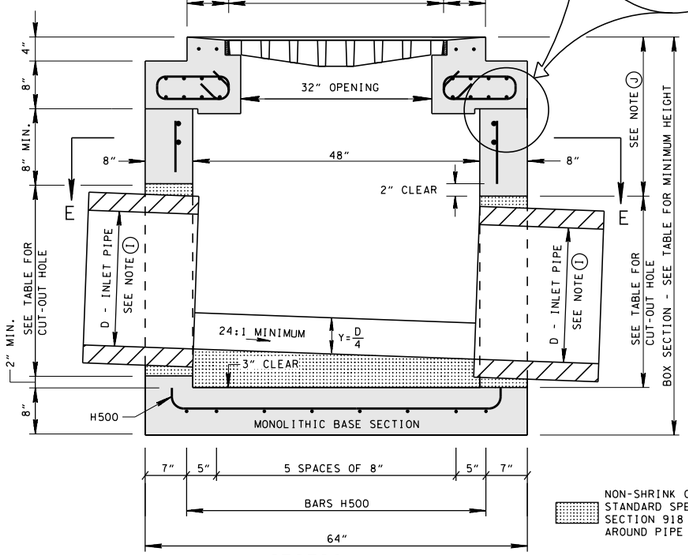
PLAN VIEW



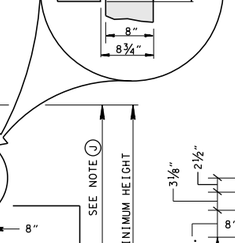
SECTION E-E

SECTION *-*

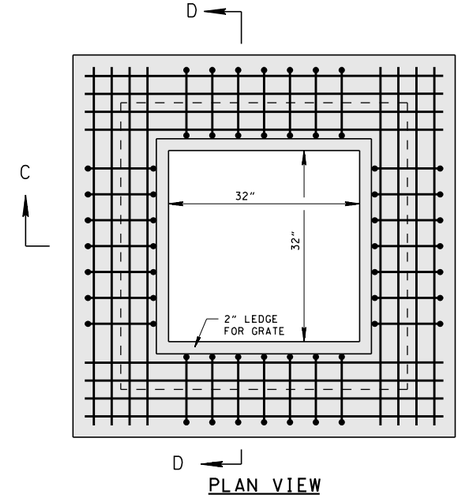
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



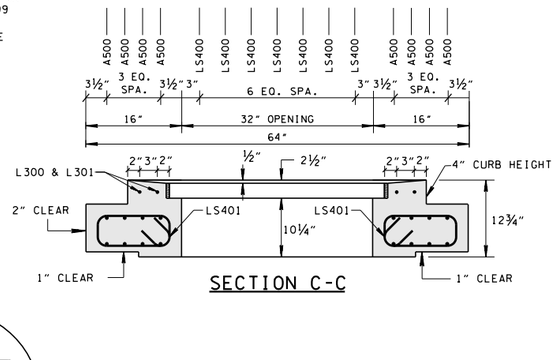
SECTION A-A



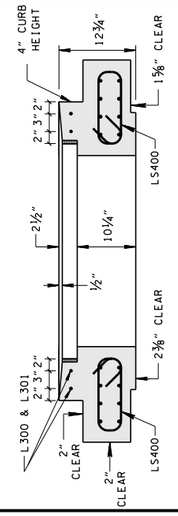
NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



PLAN VIEW



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	3.63
24	3	32	62	4.17
30	3½	39	69	4.71
36	4	46	76	5.25

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 7-29-04: CORRECTED GENERAL NOTE (I)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 42SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 42SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

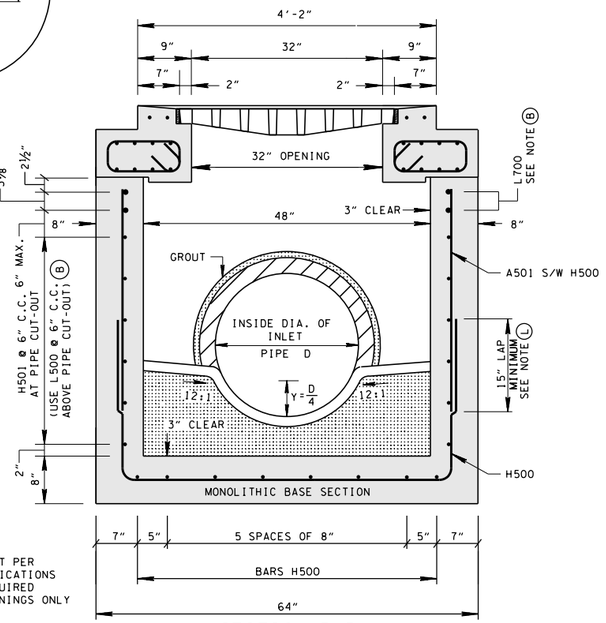
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 20 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

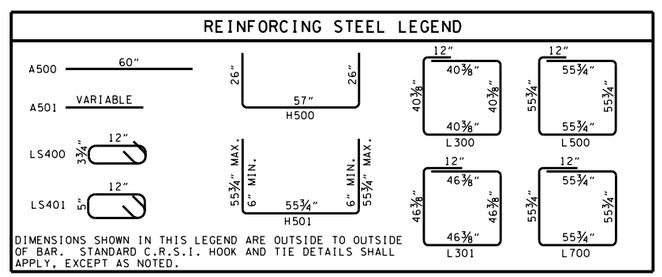
(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-42.01 CATCH BASINS, TYPE 42, 0'-4' DEPTH THROUGH 611-42.07 CATCH BASINS, TYPE 42, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.



SECTION B-B

REINFORCING STEEL LEGEND



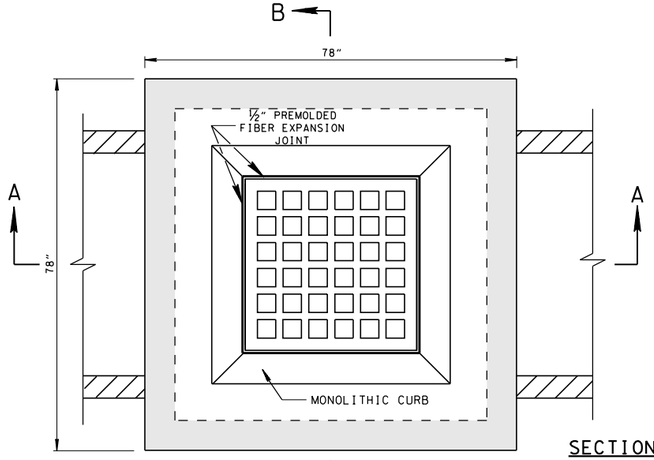
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

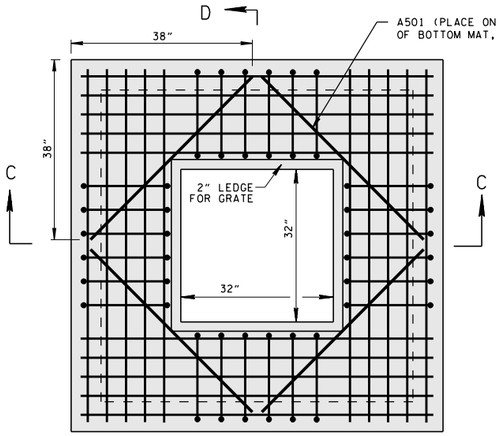
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

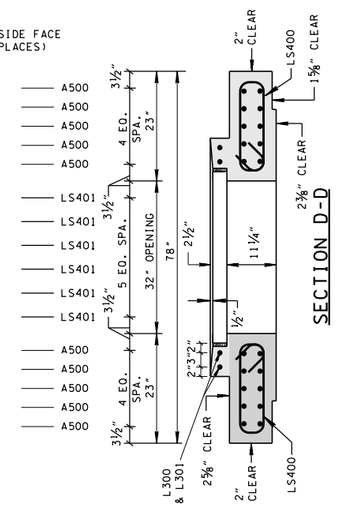
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
4' X 4' SQUARE
CONCRETE NO.42
CATCH BASIN

NOT TO SCALE | 5-27-99 | D-CB-42SB







SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

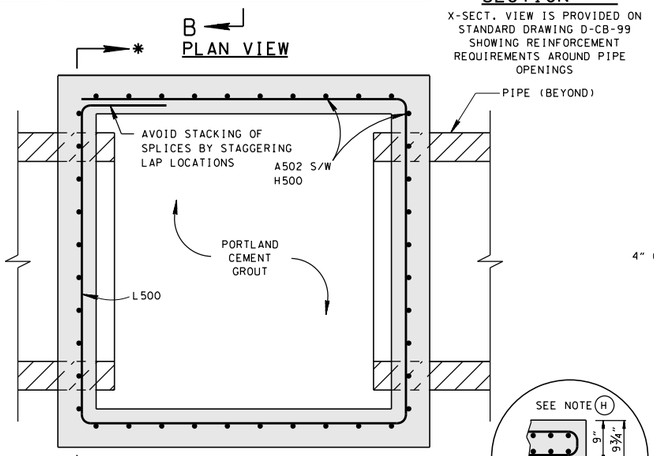
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	59	3.96
24	3	32	66	4.50
30	3½	39	73	5.04
36	4	46	80	5.58
42	4½	53	87	6.13
48	5	60	94	6.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

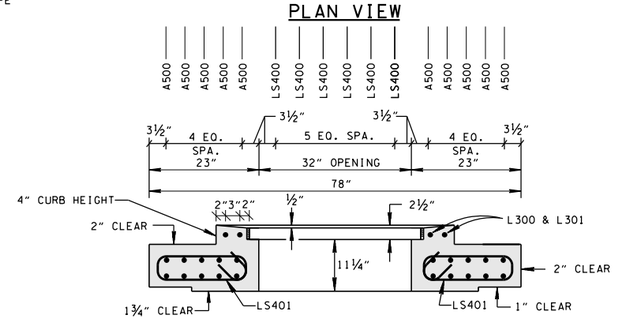
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

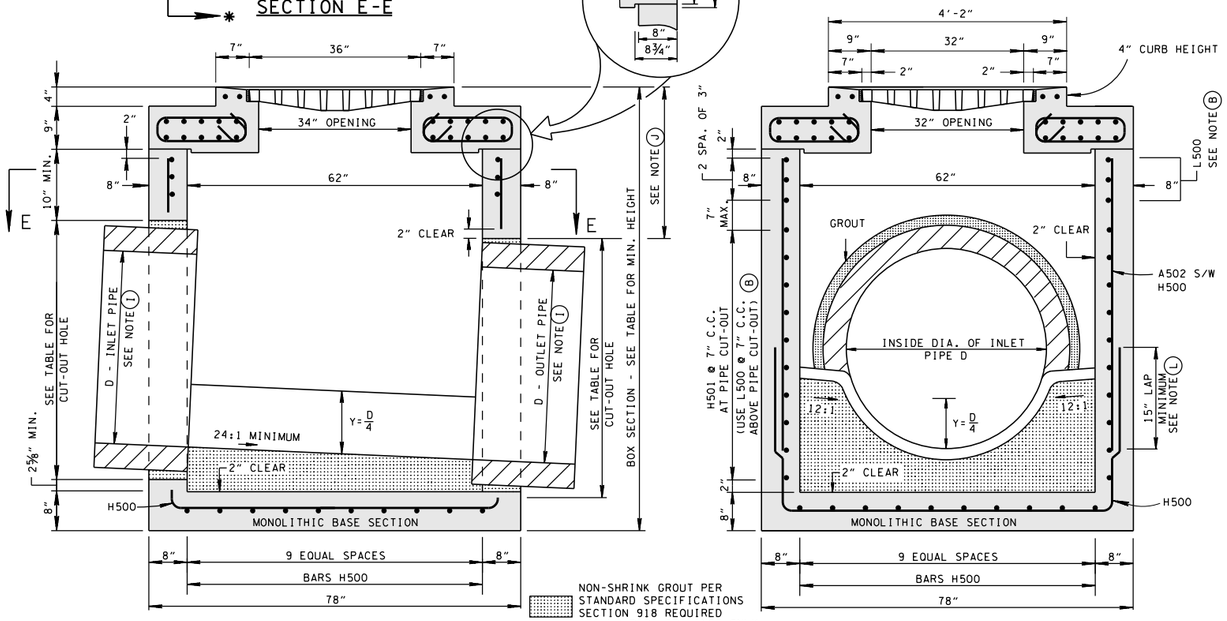


SECTION E-E

SECTION *-*
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

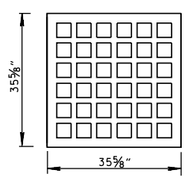


SECTION C-C



SECTION A-A

SECTION B-B



GRATE UNIT NO. 42
(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 42SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 42SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

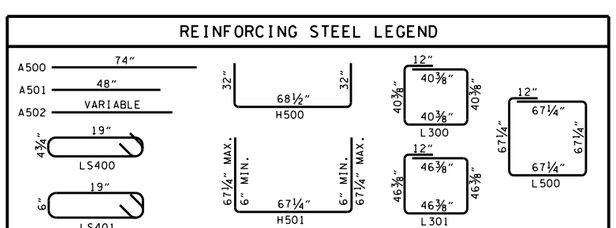
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-42.01 CATCH BASINS, TYPE 42, 0'-4' DEPTH THROUGH 611-42.07 CATCH BASINS, TYPE 42, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE.

REINFORCING STEEL LEGEND



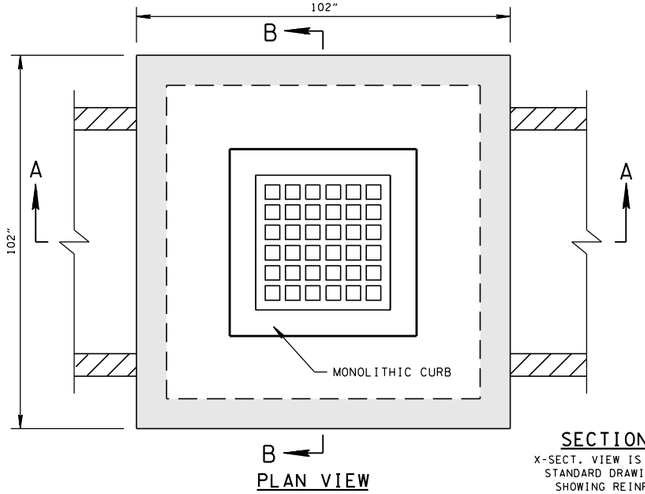
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.42 CATCH BASIN

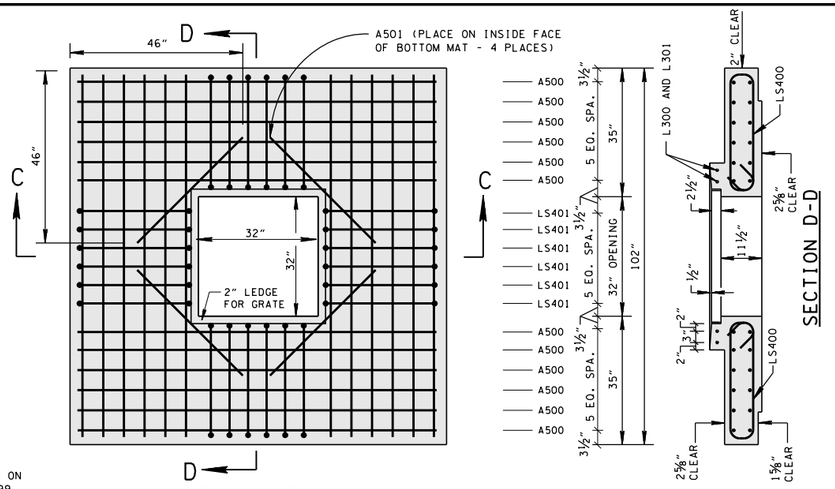
NOT TO SCALE | 2-28-03 | D-CB-42SC



PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW

SECTION D-D

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	61½	4.17
24	3	32	68½	4.71
30	3½	39	75½	5.25
36	4	46	82½	5.79
42	4½	53	89½	6.33
48	5	60	96½	6.88
54	5½	67	103½	7.42
60	6	74	110½	7.96
66	6½	81	117½	8.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

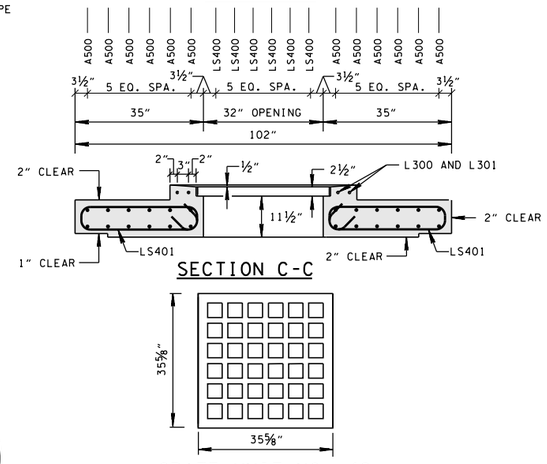
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 9-5-98: CHANGED LENGTH OF REINFORCING BAR DESIGNATED A501.
- ☐ REV. 1-19-99: ADDED CURB HEIGHT.
- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

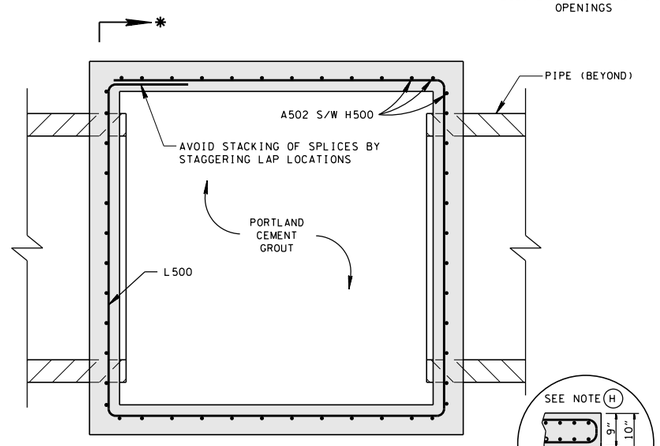
CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

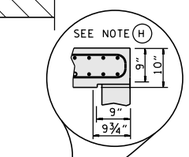


SECTION C-C

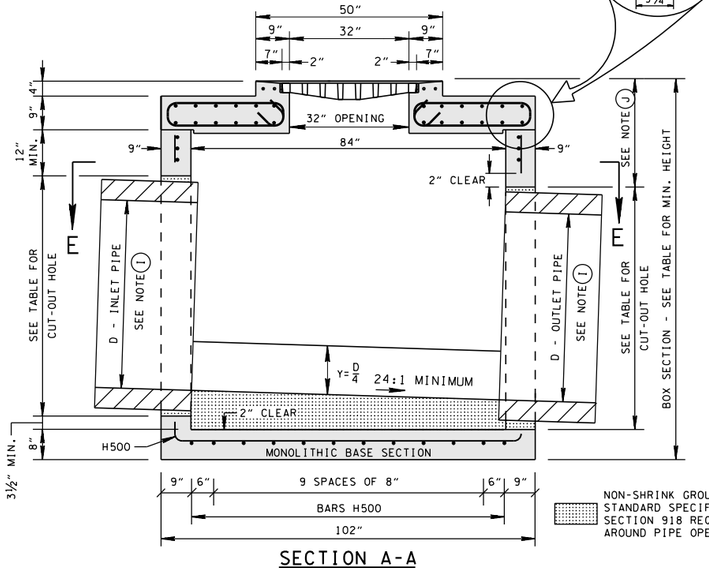
GRATE UNIT NO. 42

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)



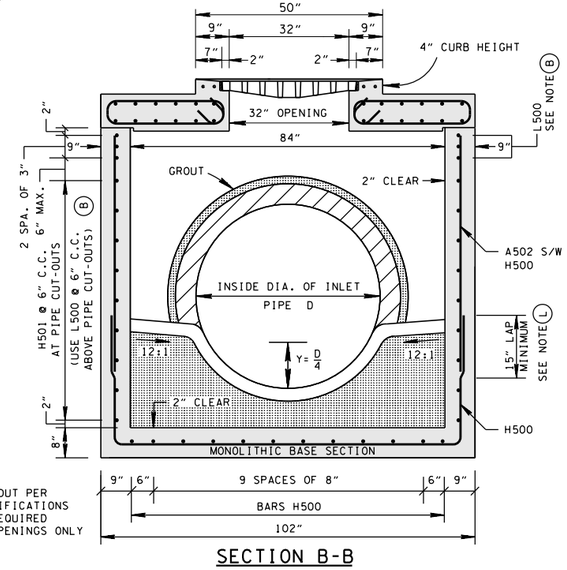


SECTION E-E



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 42SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 42SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

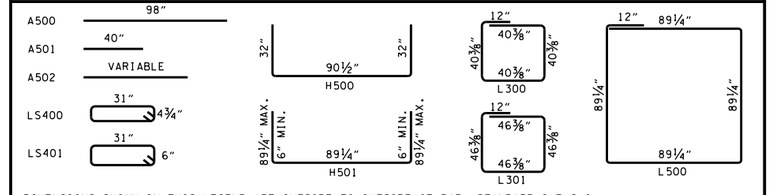
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(K) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-42.02 CATCH BASINS, TYPE 42, > 4'-8' DEPTH THROUGH 611-42.07, CATCH BASINS, TYPE 42, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

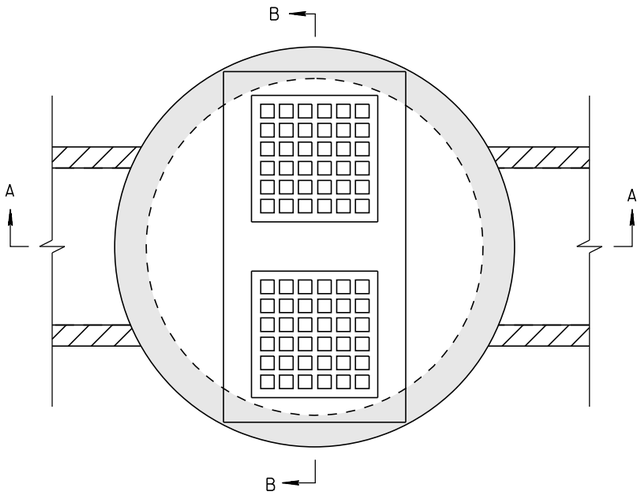
NOT TO SCALE

☒ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

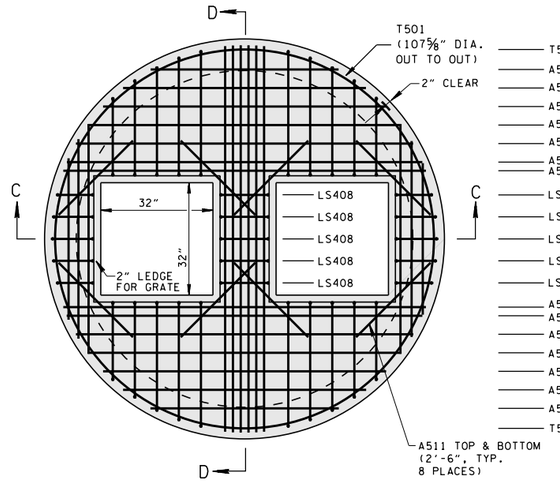
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 7' X 7' SQUARE CONCRETE NO. 42 CATCH BASIN

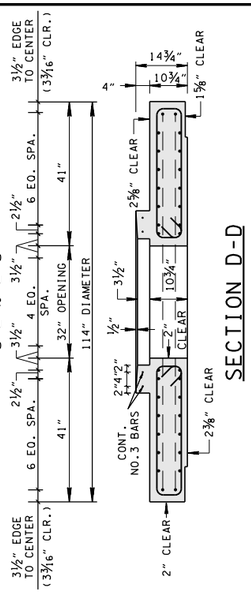
8-28-98 | D-CB-42SD



PLAN VIEW



LID REINFORCING



SECTION D-D

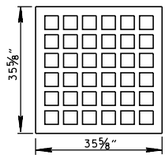
CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	
18	2½	25	64	4.29
24	3	32	71	4.83
30	3½	39	78	5.38
36	4	46	85	5.92
42	4½	53	92	6.46
48	5	60	99	7.00
54	5½	67	106	7.54
60	6	74	113	8.08
66	6½	81	120	8.63

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

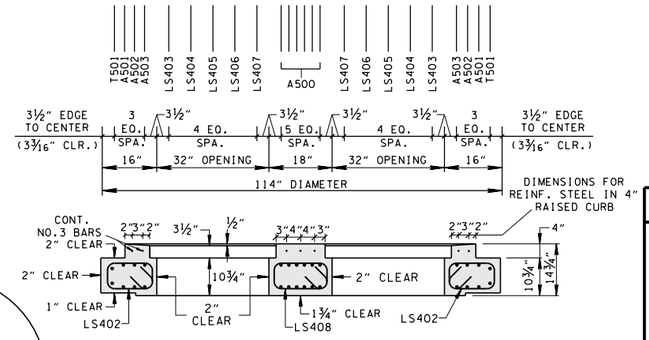
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

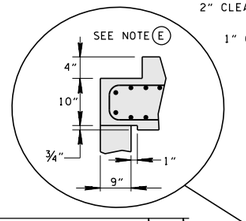


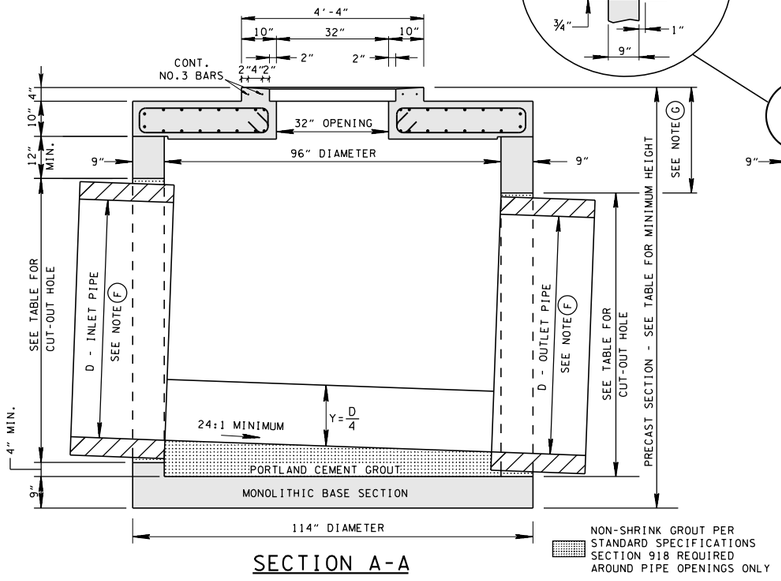
GRATE UNIT NO. 43

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

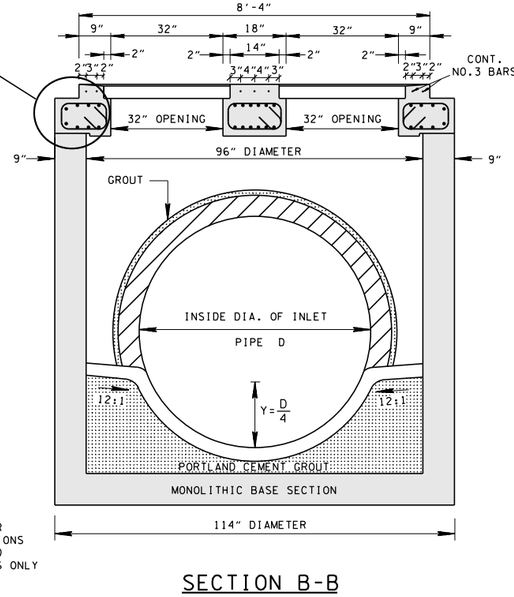


SECTION C-C





SECTION A-A



SECTION B-B

GENERAL NOTES

(A) ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(B) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(C) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(D) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(F) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(H) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(I) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-43.02 CATCH BASINS, TYPE 43, > 4'-8' DEPTH THROUGH 611-43.07, CATCH BASINS, TYPE 43, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-43.08, CATCH BASINS, TYPE 43, ____ '- ____' DEPTH PER EACH. PAYMENT INCLUDES GRATES.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

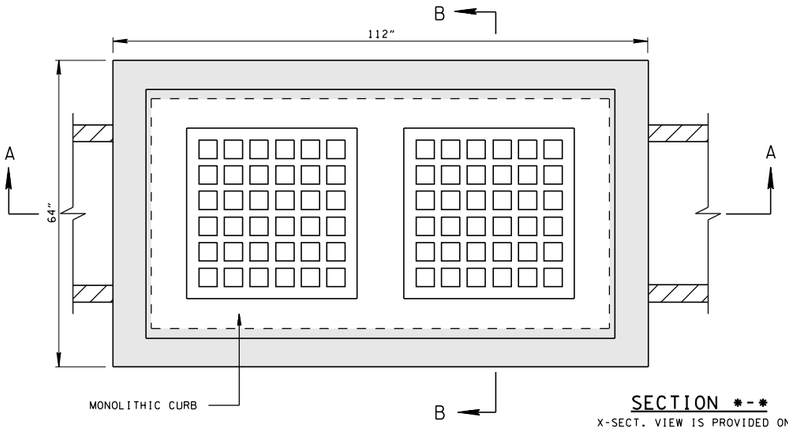
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST CIRCULAR NO. 43R CATCH BASIN

NOT TO SCALE

1-19-00

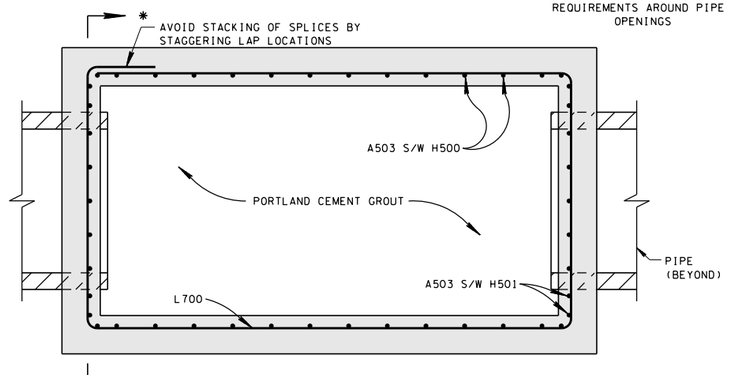
D-CB-43R



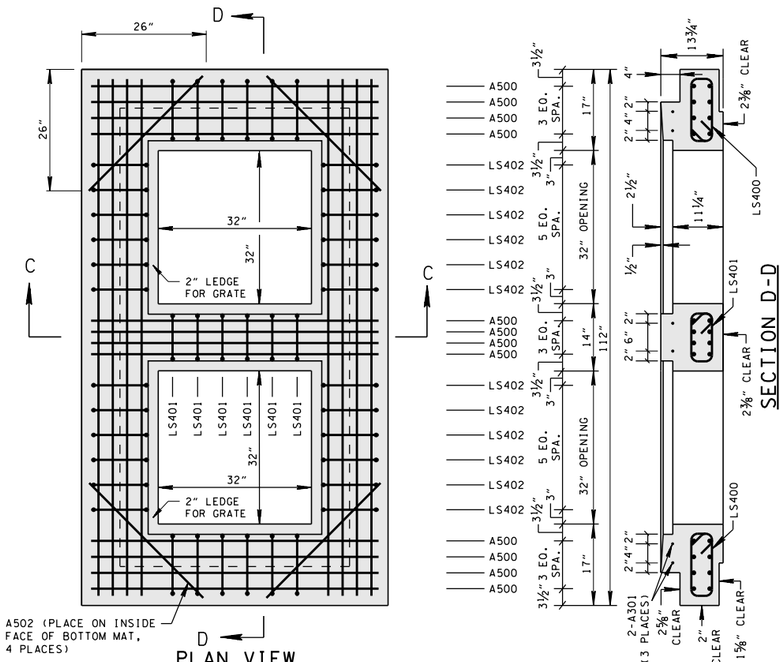
PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION E-E



PLAN VIEW

SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

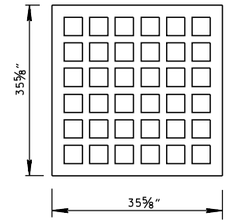
CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	57	3.79
24	3	32	64	4.33
30	3½	39	71	4.88
36	4	46	78	5.42
(4) 42	4½	53	85	5.96
(4) 48	5	60	92	6.50
(4) 54	5½	67	99	7.04
(4) 60	6	74	106	7.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.



GRATE UNIT NO. 43

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 43SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 43SB CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

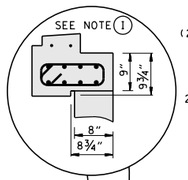
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

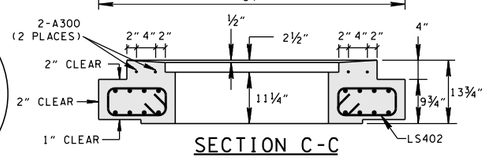
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 20 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

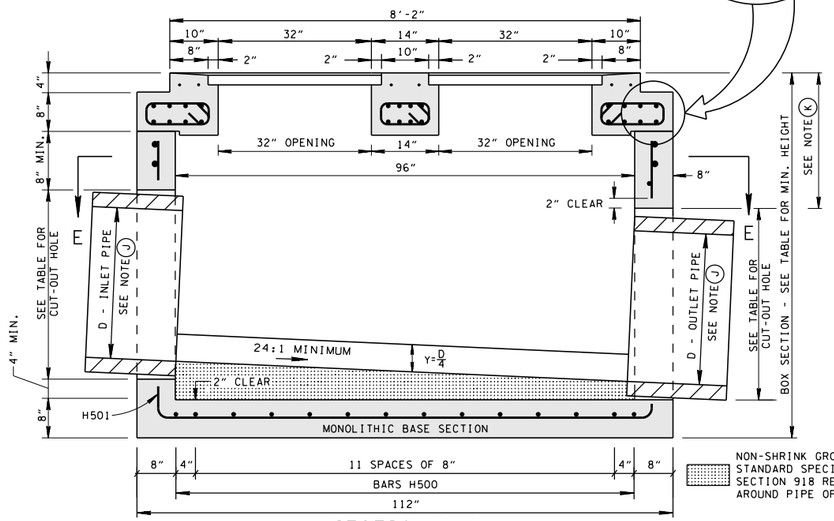
(L) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-43.01 CATCH BASINS, TYPE 43, 0'-4' DEPTH THROUGH 611-43.05, CATCH BASINS, TYPE 43, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES GRATES.



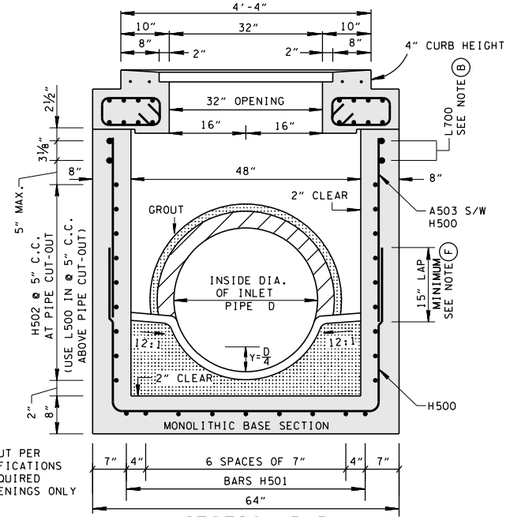


SECTION C-C



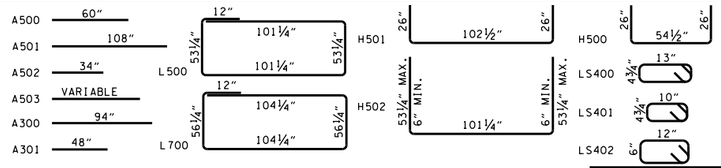
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



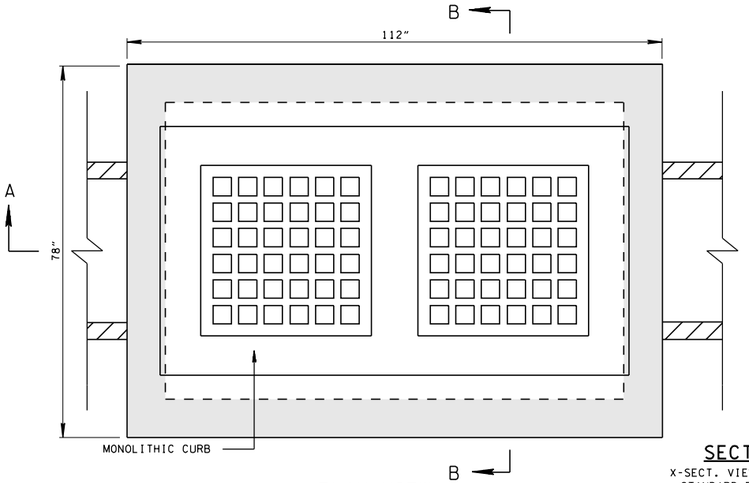
DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

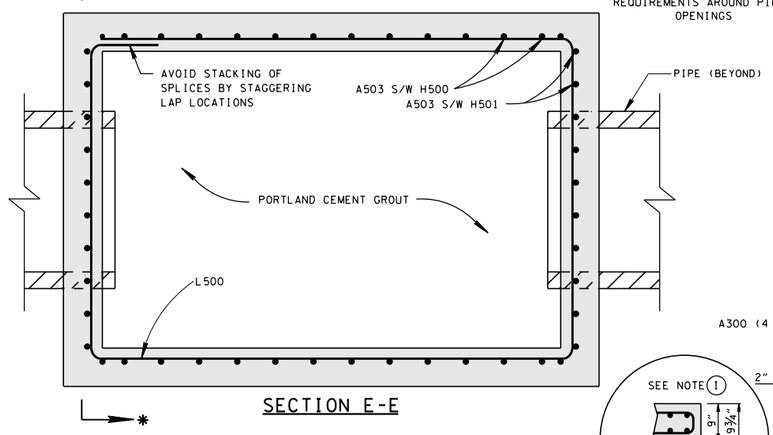
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 8' X 4' RECTANGULAR CONCRETE NO.43SB CATCH BASIN

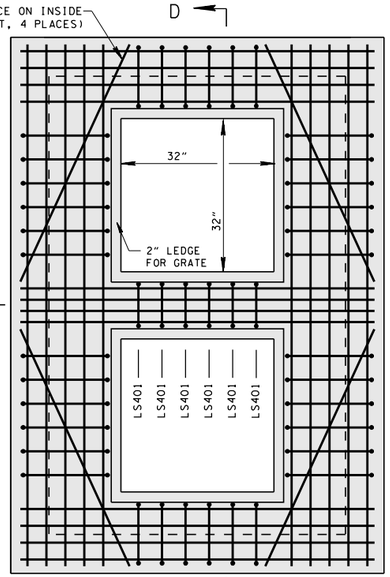
10-26-97 | D-CB-43SB



PLAN VIEW



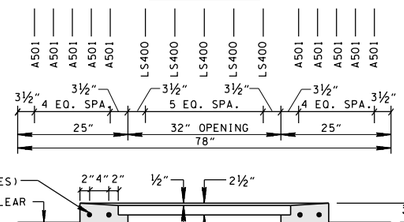
SECTION E-E

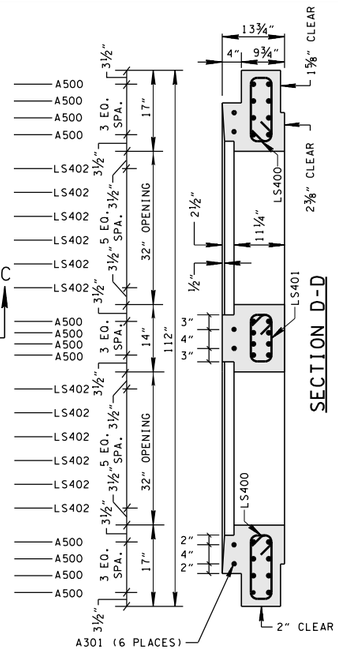


SECTION *-*

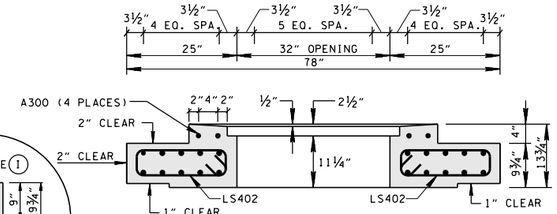
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

PLAN VIEW

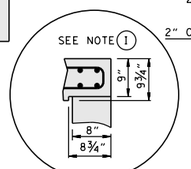


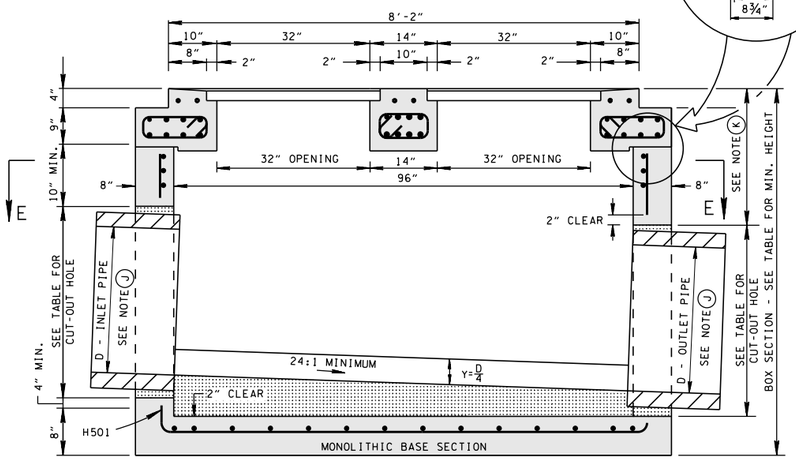


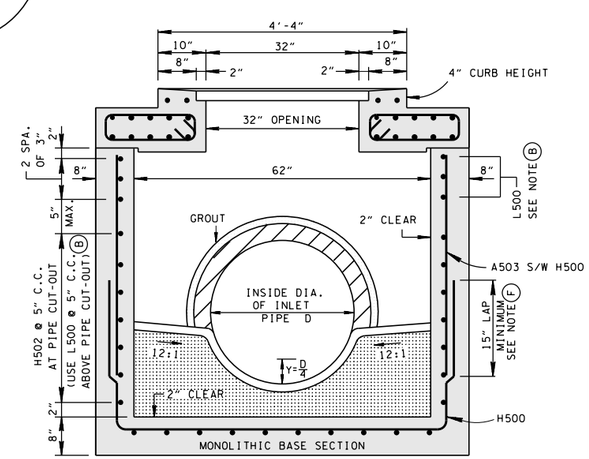
SECTION D-D

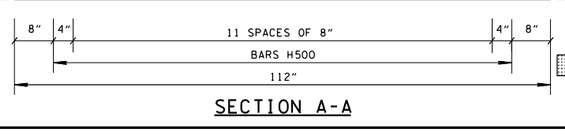


SECTION C-C



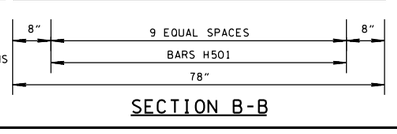






SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

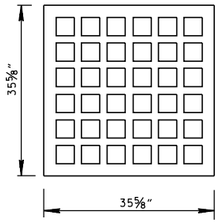
CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	60	4.04
24	3	32	67	4.58
30	3½	39	74	5.13
36	4	46	81	5.67
42	4½	53	88	6.21
48	5	60	95	6.75
(4) 54	5½	67	102	7.29
(4) 60	6	74	109	7.83

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.



GRATE UNIT NO. 43

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 43SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 43SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

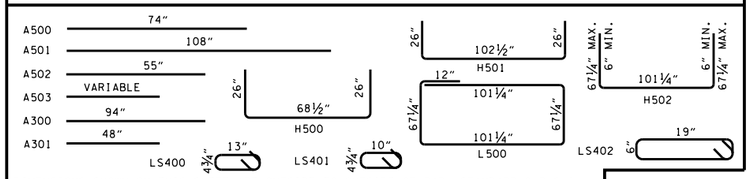
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-43.02 CATCH BASINS, TYPE 43, > 4'-8' DEPTH THROUGH 611-43.05, CATCH BASINS, TYPE 43, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

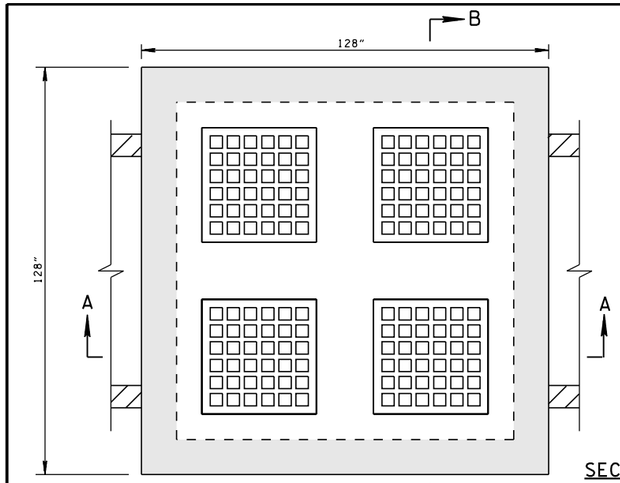
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

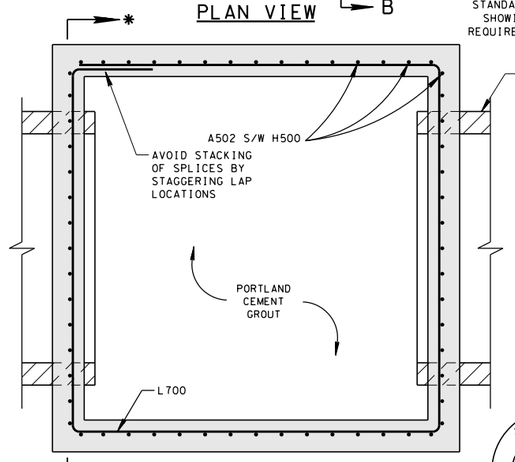
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 8' X 5'2" RECTANGULAR CONCRETE NO. 43SC CATCH BASIN

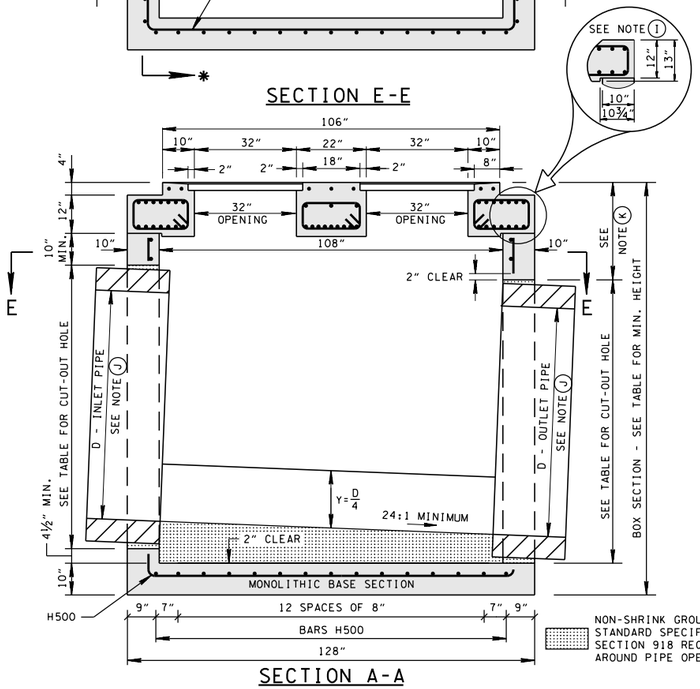
1-19-00 | D-CB-43SC



PLAN VIEW



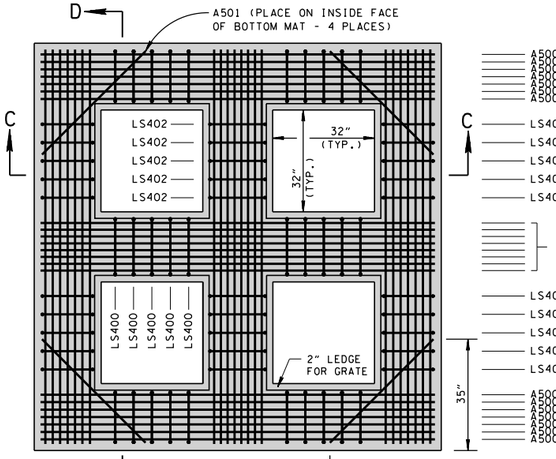
SECTION E-E



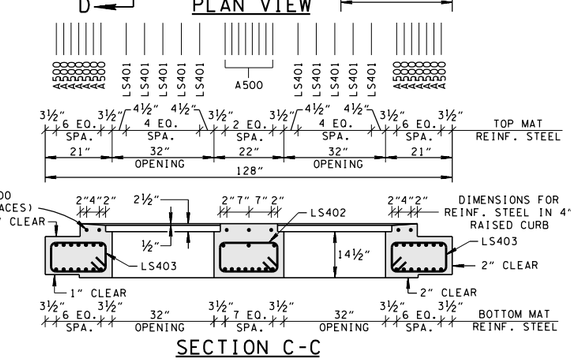
SECTION A-A

SECTION *-*

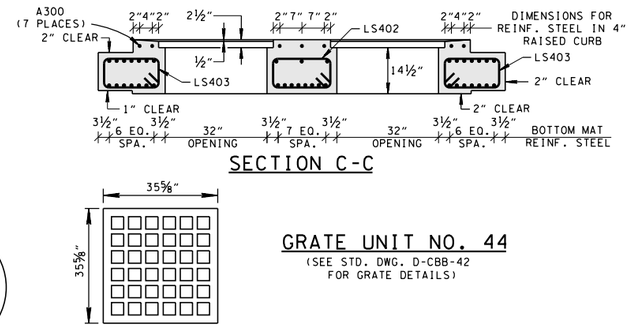
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW

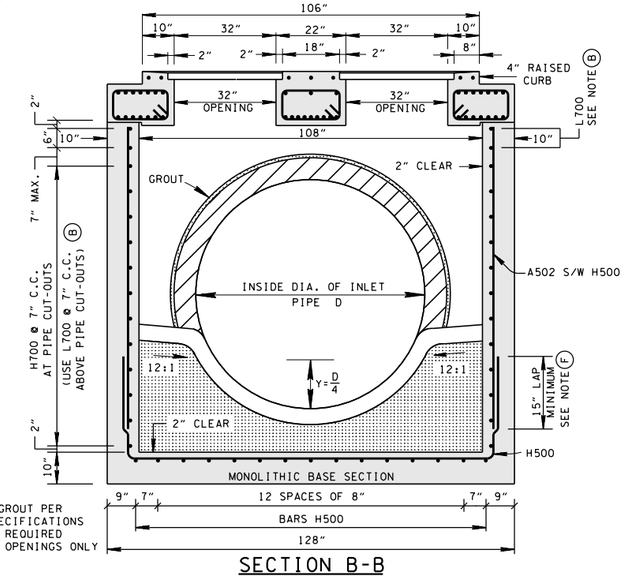


SECTION C-C



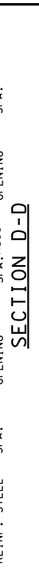
GRATE UNIT NO. 44

(SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)



SECTION B-B

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	65½	4.33
24	3	32	72½	4.88
30	3½	39	79½	5.42
36	4	46	86½	5.96
42	4½	53	93½	6.50
48	5	60	100½	7.04
54	5½	67	107½	7.58
60	6	74	114½	8.13
66	6½	81	121½	8.67
72	7	88	128½	9.21
78	7½	95	135½	9.75

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 44SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 44SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(C) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(F) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

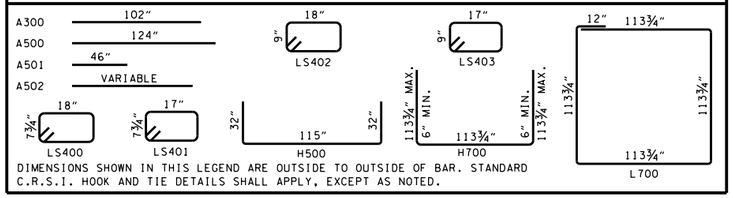
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) SEE STANDARD DRAWING D-CBB-42 FOR DETAILS REGARDING CAST IRON GRATES.

(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-44.02 CATCH BASINS, TYPE 44, > 4'-8' DEPTH THROUGH 611-44.05, CATCH BASINS, TYPE 44, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATES.

REINFORCING STEEL LEGEND



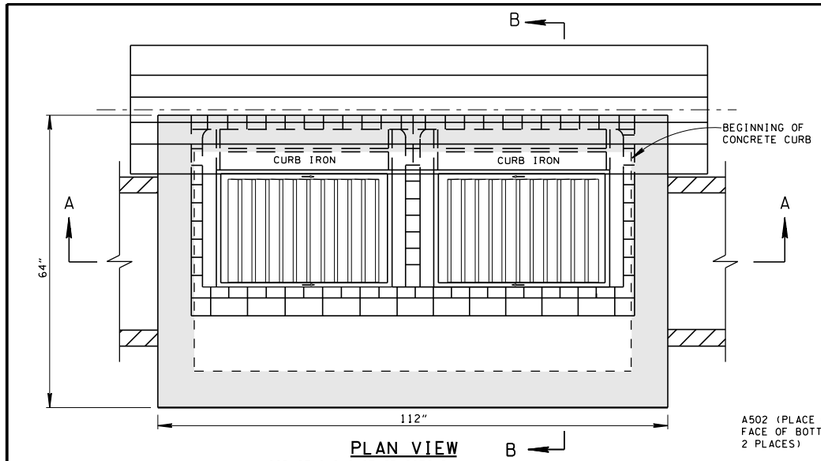
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

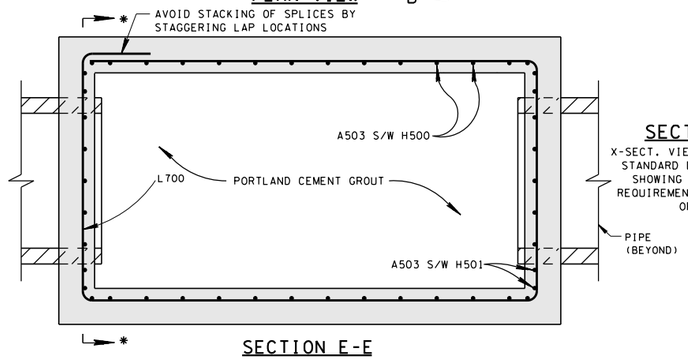
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 44 CATCH BASIN

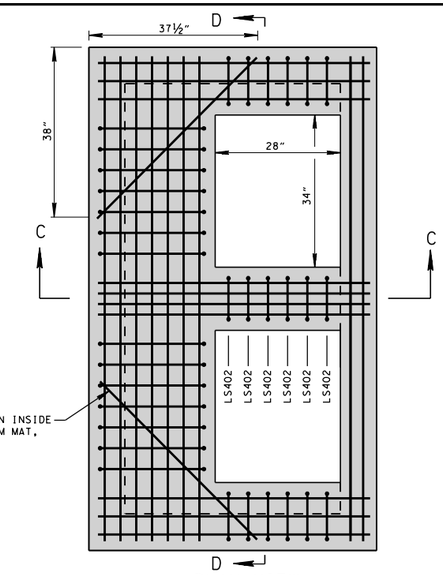
NOT TO SCALE | 10-26-98 | D-CB-44SE



PLAN VIEW



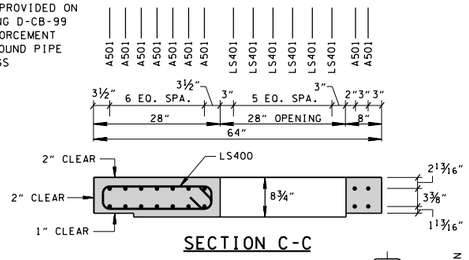
SECTION E-E



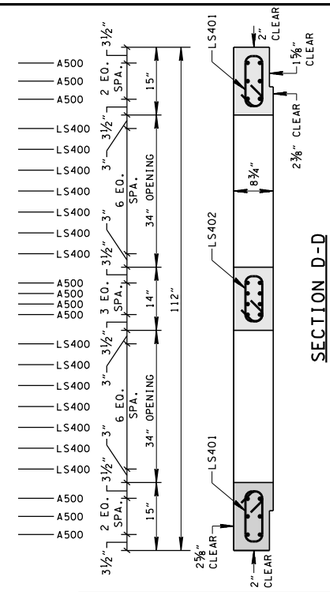
PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION C-C



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH BASIN DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	53	3.88
24	3	32	60	4.42
30	3½	39	67	4.96
36	4	46	74	5.50
(4) 42	4½	53	81	6.04
(4) 48	5	60	88	6.58
(4) 54	5½	67	95	7.13
(4) 60	6	74	102	7.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(4) TO BE USED IN 96 INCH INTERIOR WALL ONLY.

☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J). ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

☐ REV. 2-2-12: CHANGED GENERAL NOTES (C) & MISC. EDITS MADE TO SECTIONS.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 45 CONCRETE CATCH BASINS AND ALL PRECAST NO. 45 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 21 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

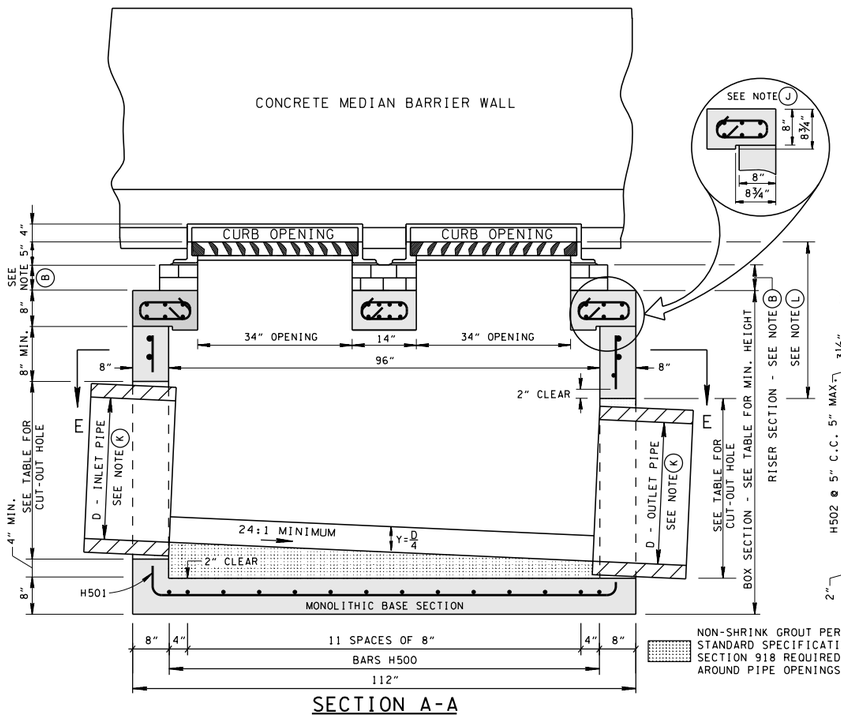
(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

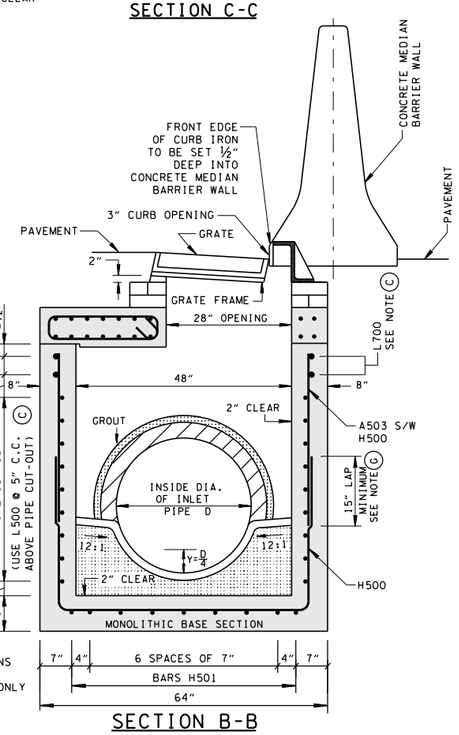
(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-45.01 CATCH BASINS, TYPE 45, 0'-4' DEPTH THROUGH 611-45.05, CATCH BASINS, TYPE 45, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

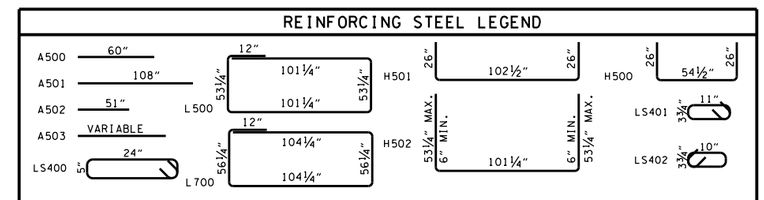


SECTION A-A



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

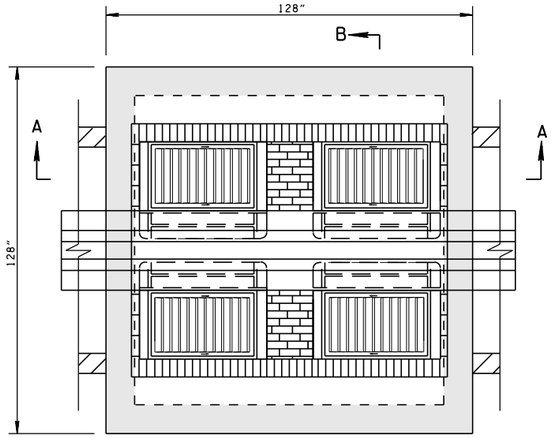
NOT TO SCALE

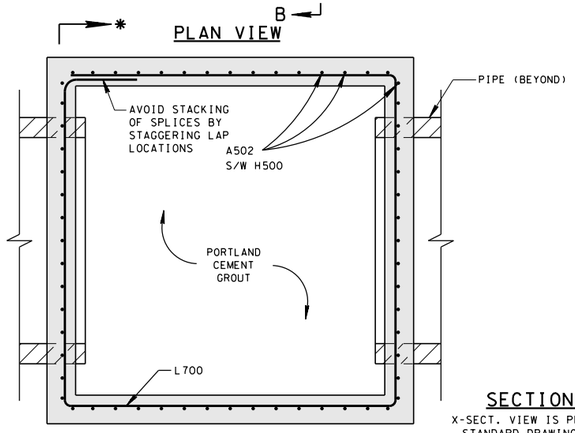
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

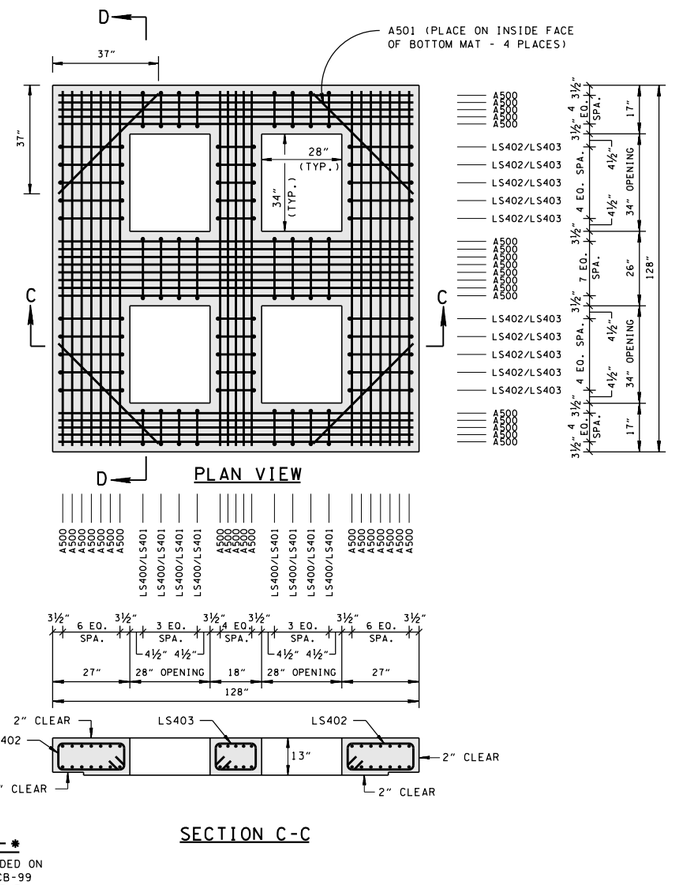
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

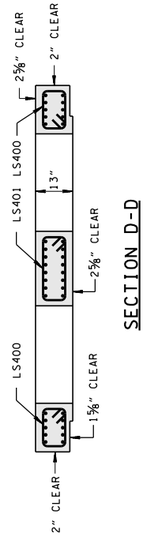
STANDARD 8' X 4' RECTANGULAR CONCRETE NO.45 CATCH BASIN
(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

1-19-99 | D-CB-45S









CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	61½	4.42
24	3	32	68½	4.96
30	3½	39	75½	5.50
36	4	46	82½	6.04
42	4½	53	89½	6.58
48	5	60	96½	7.13
54	5½	67	103½	7.67
60	6	74	110½	8.21
66	6½	81	117½	8.75
72	7	88	124½	9.29
78	7½	95	131½	9.83

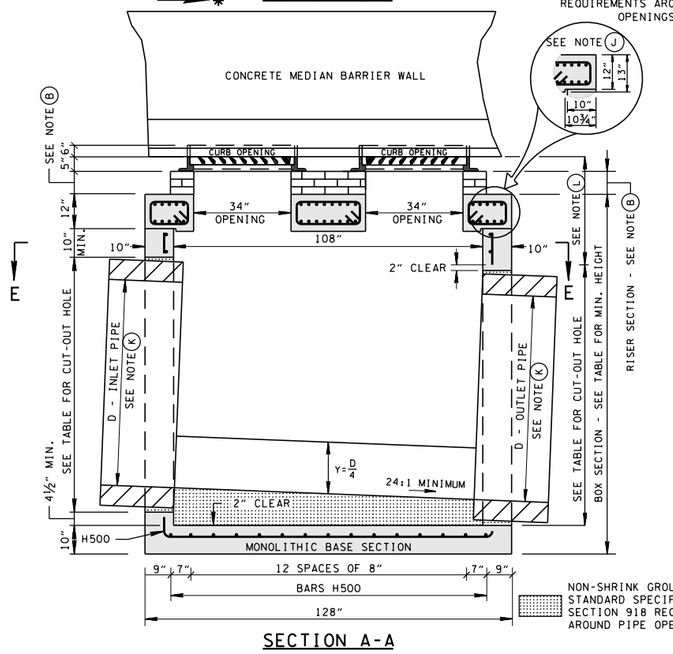
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 5-30-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
- ☐ REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.

  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

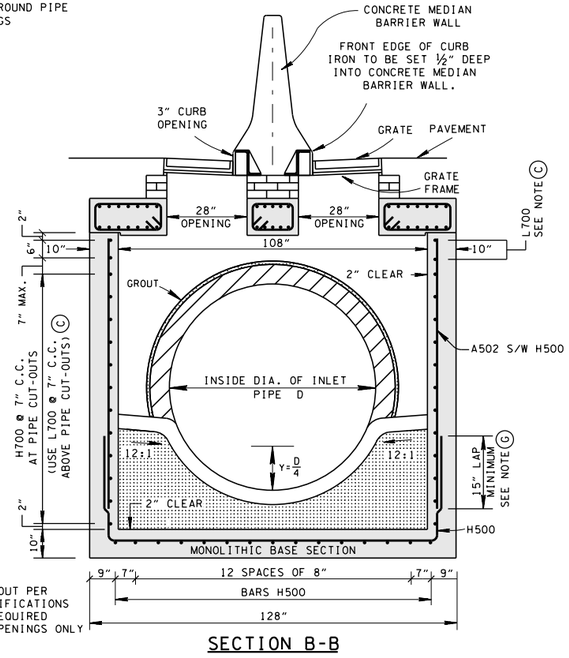
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.



SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 46 CONCRETE CATCH BASINS AND ALL PRECAST NO. 46 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

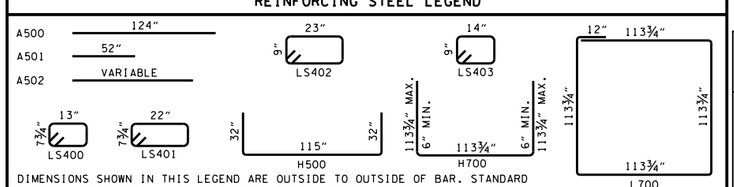
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-46.02 CATCH BASINS, TYPE 46, > 4'-8' DEPTH THROUGH 611-46.07, CATCH BASINS, TYPE 46, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

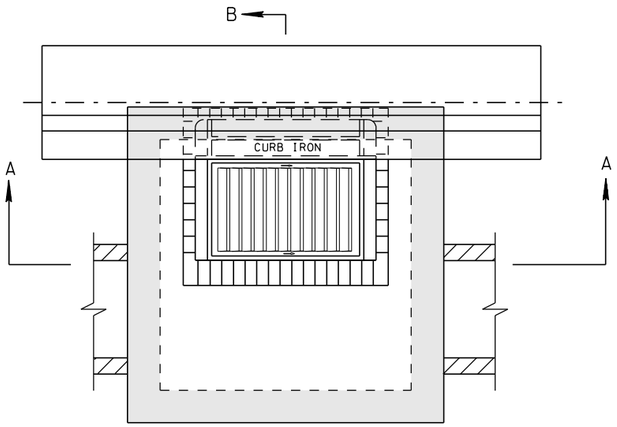
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

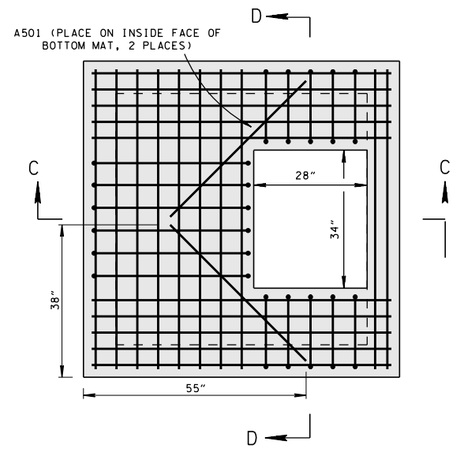
STANDARD 9' X 9' SQUARE CONCRETE NO. 46 CATCH BASIN

(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

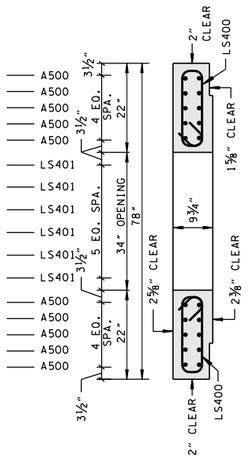
NOT TO SCALE | 5-27-99 | D-CB-46SE



PLAN VIEW



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	4.04
24	3	32	62	4.58
30	3½	39	69	5.13
36	4	46	76	5.67
42	4½	53	83	6.21
48	5	60	90	6.75

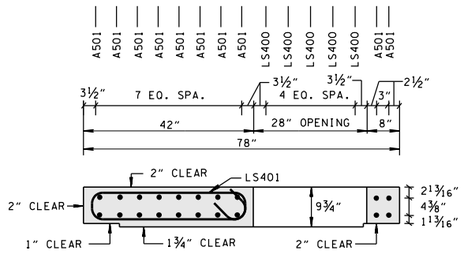
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

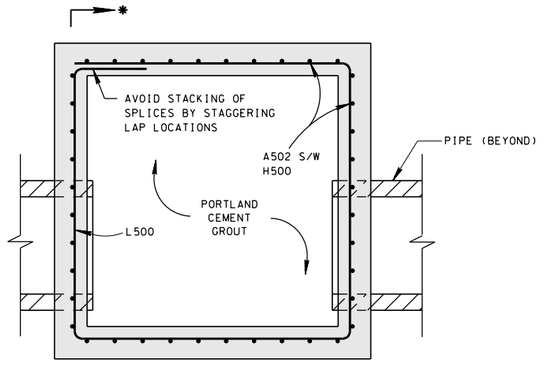
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

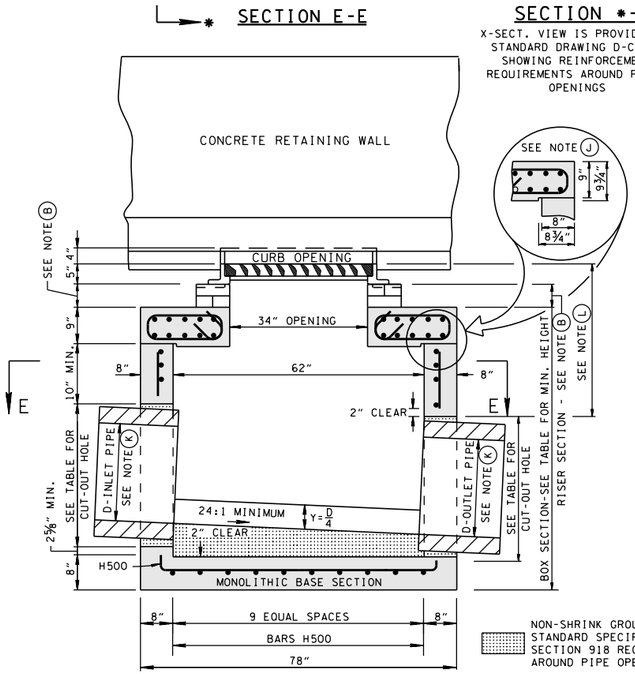
  REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION C-C



SECTION E-E



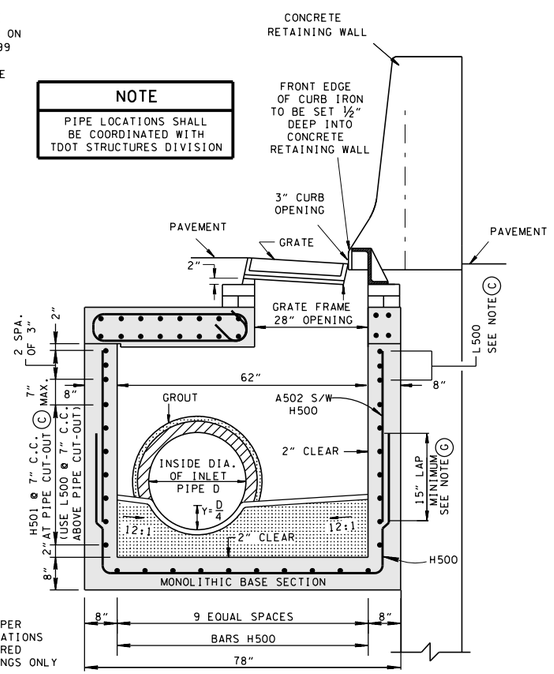
SECTION A-A

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

NOTE
PIPE LOCATIONS SHALL BE COORDINATED WITH TDOT STRUCTURES DIVISION



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 51SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 51SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 24 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

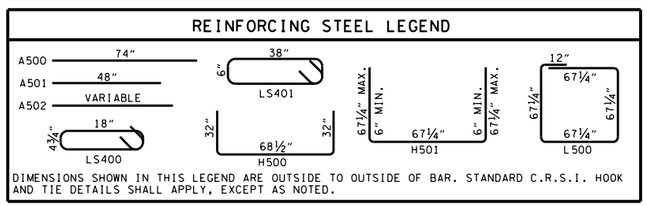
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-51.02 CATCH BASINS, TYPE 51, > 4'-8' DEPTH THROUGH 611-51.07, CATCH BASINS, TYPE 51, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

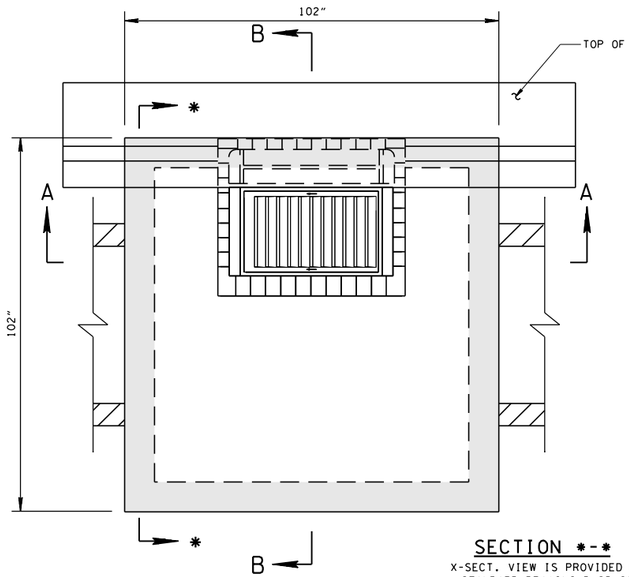
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN

(FOR USE IN FRONT OF CONCRETE RETAINING WALL)

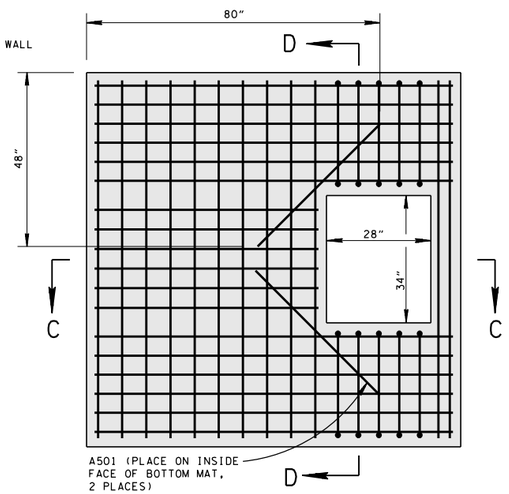
NOT TO SCALE | 10-26-00 | D-CB-51SC



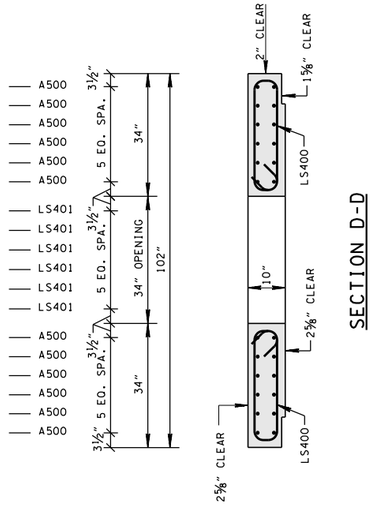
PLAN VIEW

SECTION *-*

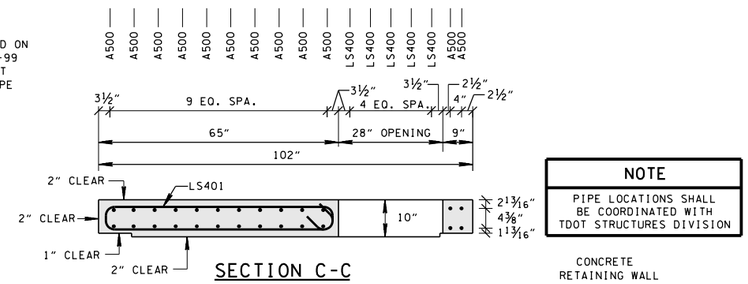
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION D-D



SECTION C-C

CATCH BASIN DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	57½	4.25
24	3	32	64½	4.79
30	3½	39	71½	5.33
36	4	46	78½	5.88
42	4½	53	85½	6.42
48	5	60	92½	6.96
54	5½	67	99½	7.50
60	6	74	106½	8.04
66	6½	81	113½	8.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

NOTE
PIPE LOCATIONS SHALL BE COORDINATED WITH TDOT STRUCTURES DIVISION

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 51SD CONCRETE CATCH BASINS AND ALL PRECAST NO. 51SD CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

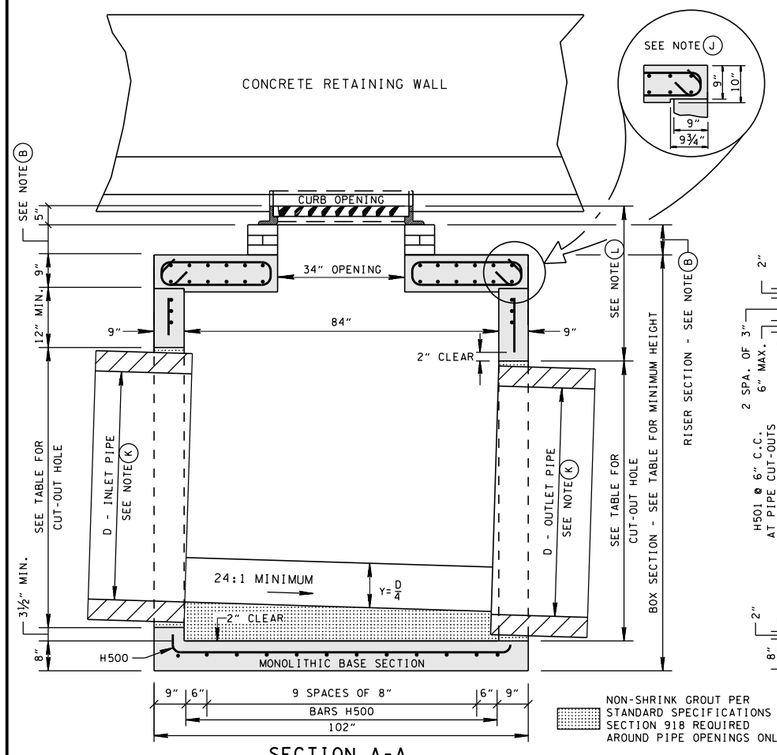
(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

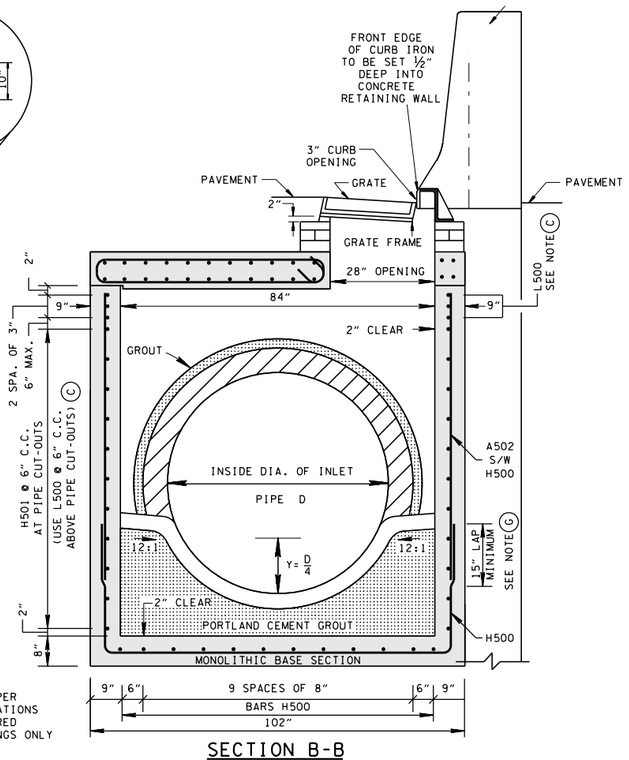
(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-51.02 CATCH BASINS, TYPE 51, > 4'-8' DEPTH THROUGH 611-51.07, CATCH BASINS, TYPE 51, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

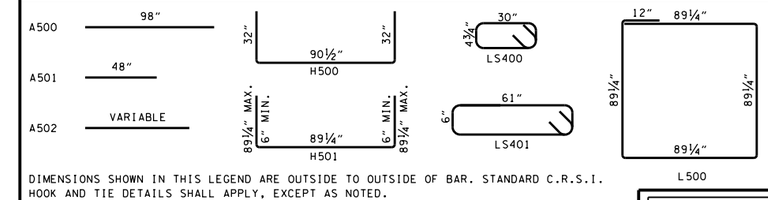


SECTION A-A



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

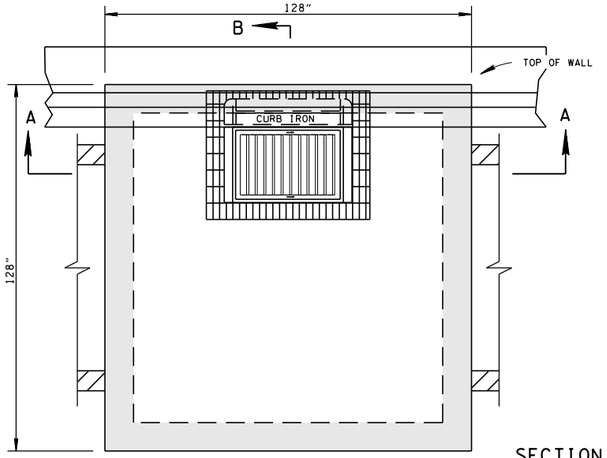
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

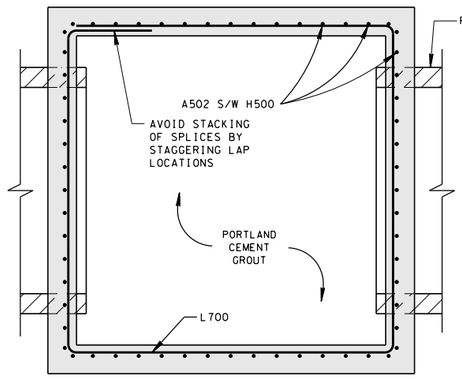
STANDARD 7' X 7' SQUARE CONCRETE NO. 51 CATCH BASIN

(FOR USE IN FRONT OF CONCRETE RETAINING WALL)

9-11-02 | D-CB-51SD



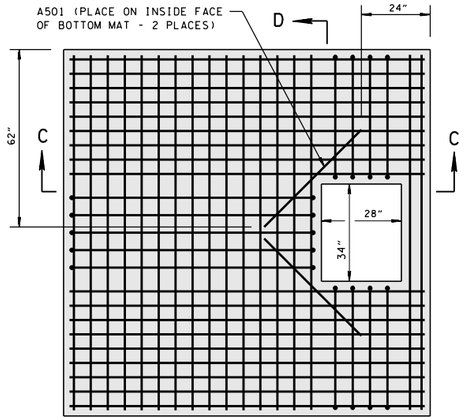
PLAN VIEW



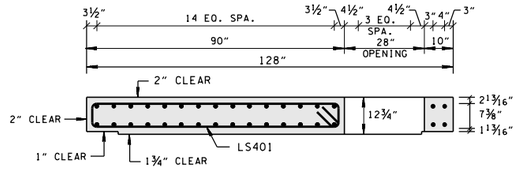
SECTION E-E

SECTION *-*

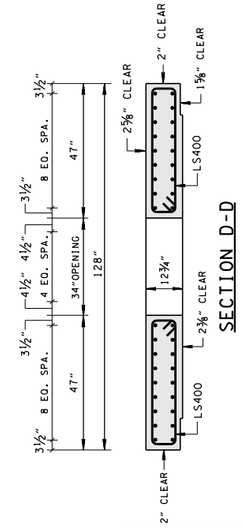
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION C-C



CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

REV. 8-01-12: REVISED CATCH BASIN FOR LRFD DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

CATCH BASIN DIMENSIONS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	63½	4.58
24	3	32	70½	5.13
30	3½	39	77½	5.67
36	4	46	84½	6.21
42	4½	53	91½	6.75
48	5	60	98½	7.29
54	5½	67	105½	7.83
60	6	74	112½	8.38
66	6½	81	119½	8.92
72	7	88	126½	9.46
78	7½	95	133½	10.00

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 51SE CONCRETE CATCH BASINS AND ALL PRECAST NO. 51SE CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 29 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(H) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(I) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

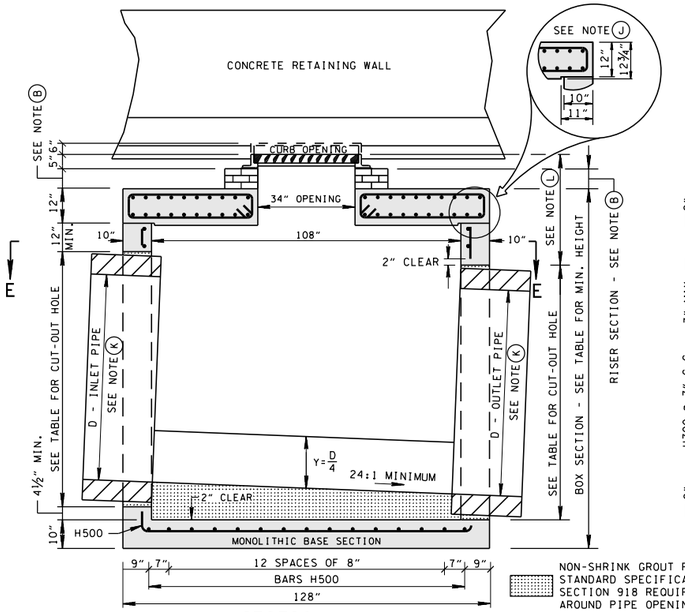
(J) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 29 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

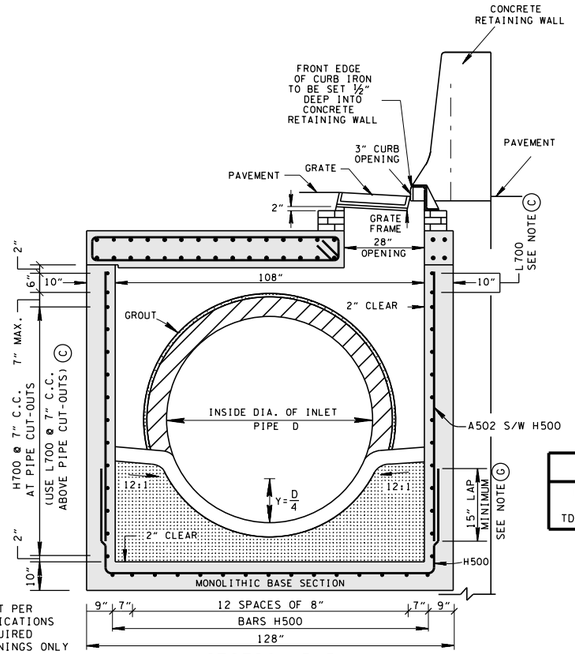
(M) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-51.02 CATCH BASINS, TYPE 51, > 4'-8' DEPTH THROUGH 611-51.07, CATCH BASINS, TYPE 51, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.



SECTION A-A

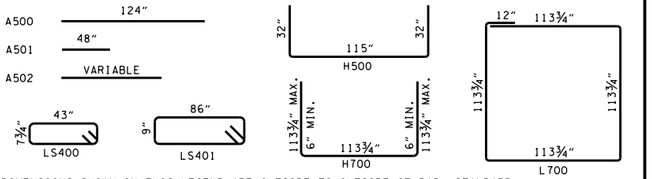
NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

NOTE
PIPE LOCATIONS SHALL BE COORDINATED WITH TDOT STRUCTURES DIVISION

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

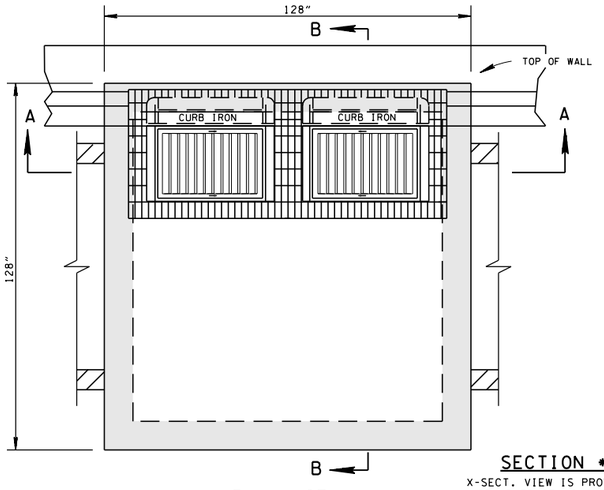
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 51 CATCH BASIN

NOT TO SCALE

5-5-05

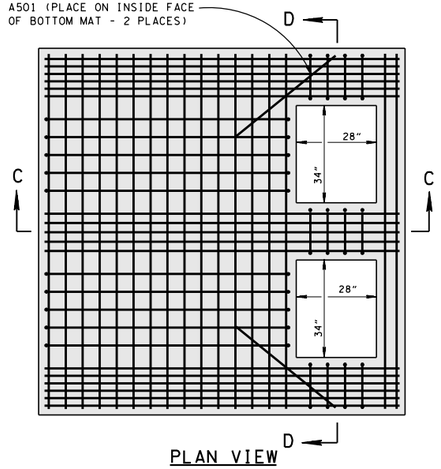
D-CB-51SE



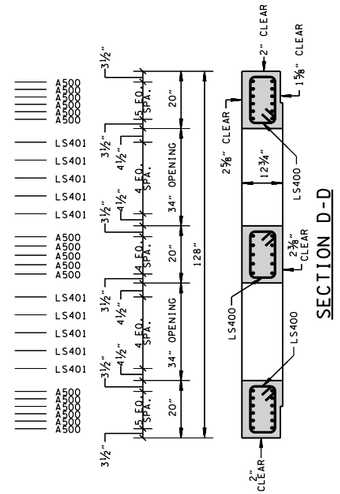
PLAN VIEW

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION D-D

CATCH BASIN MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

CATCH BASIN MINIMUM HEIGHTS				FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	
18	2½	25	63½	4.58
24	3	32	70½	5.13
30	3½	39	77½	5.67
36	4	46	84½	6.21
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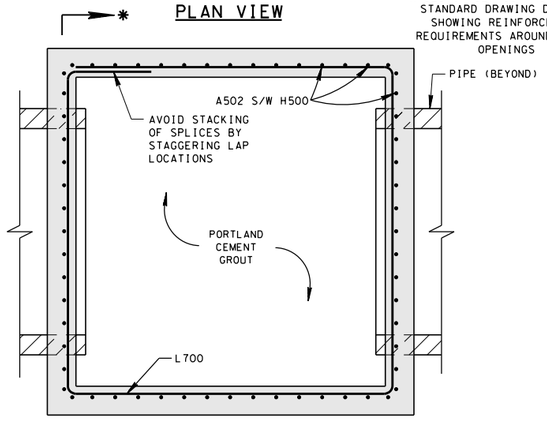
54	5½	67	105½	7.83
60	6	74	112½	8.38
66	6½	81	119½	8.92
72	7	88	126½	9.46
78	7½	95	133½	10.00

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

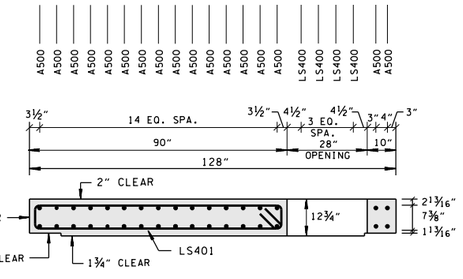
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

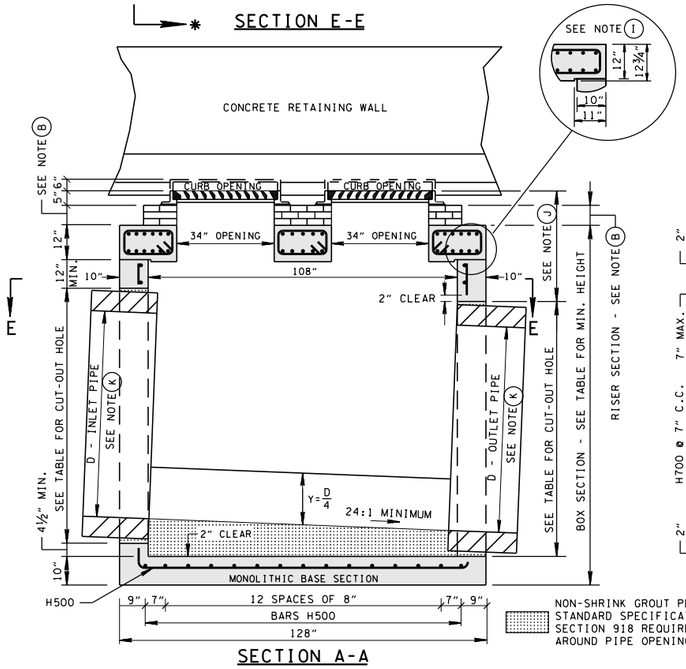
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.



SECTION E-E

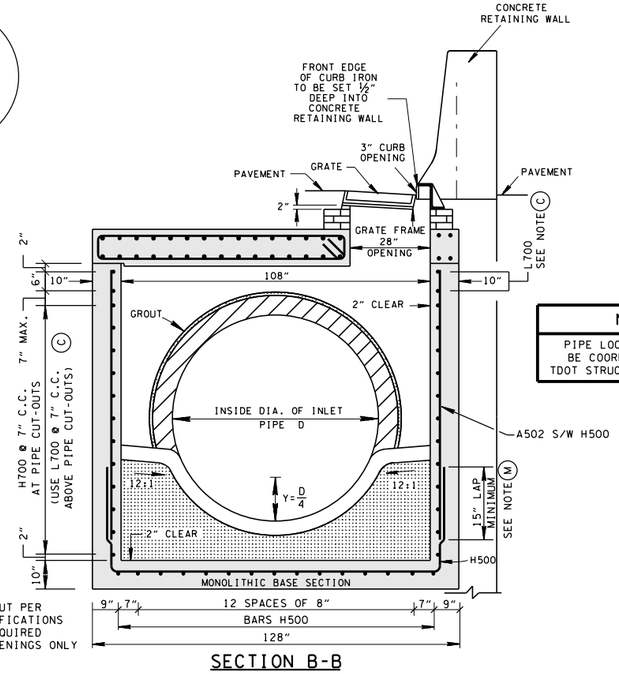


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

NOTE
PIPE LOCATIONS SHALL BE COORDINATED WITH TDOT STRUCTURES DIVISION

GENERAL NOTES

(A) DRAWING TO BE DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 52 CONCRETE CATCH BASINS AND ALL PRECAST NO. 52 CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 29 INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS.

(D) CAST-IN-PLACE CONCRETE CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 29 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

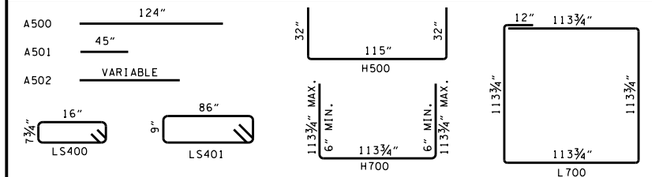
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-52.02 CATCH BASINS, TYPE 52, > 4'-8' DEPTH THROUGH 611-52.07, CATCH BASINS, TYPE 52, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

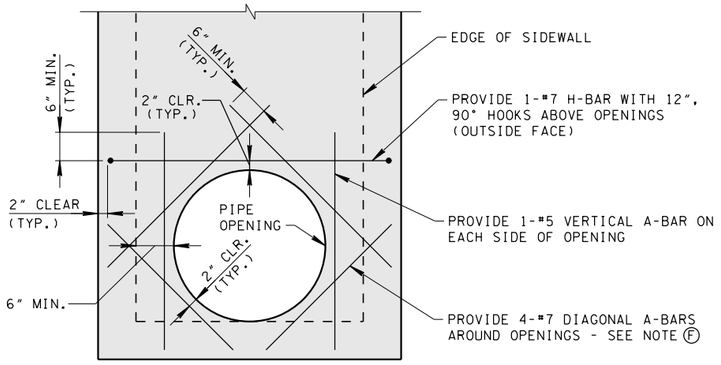
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 52 CATCH BASIN

NOT TO SCALE

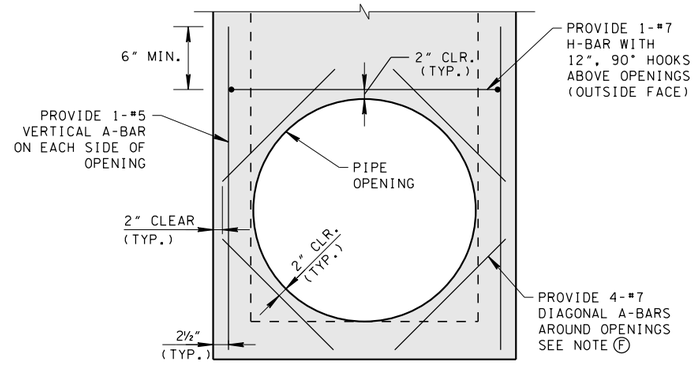
5-5-05

D-CB-52SE



ELEVATION VIEW

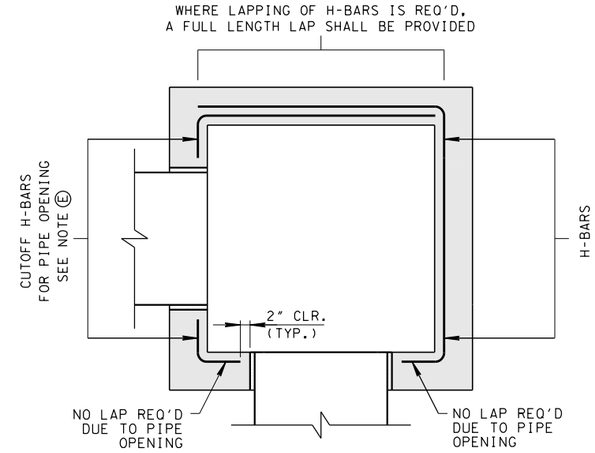
(EDGE OF PIPE OPENING IS GREATER THAN OR EQUAL TO 6" FROM SIDE WALL)



ELEVATION VIEW

(EDGE OF PIPE OPENING IS LESS THAN TO 6" FROM SIDE WALL)

ADDITIONAL REINFORCING REQUIRED FOR 30" OR LARGER PIPES

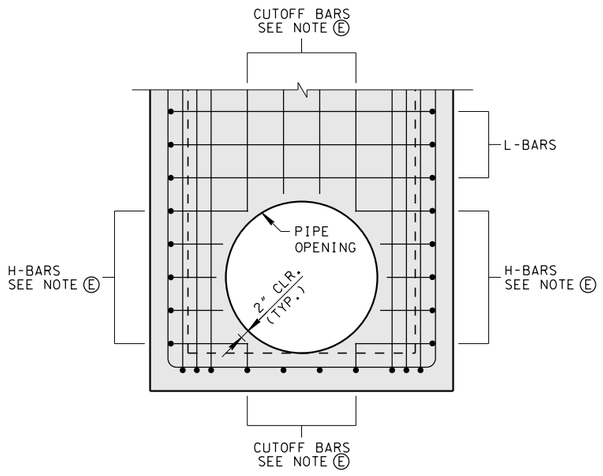


PLAN VIEW

SEE NOTE (C)

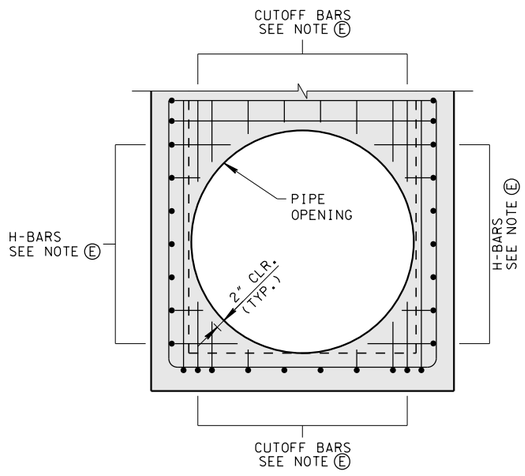
DEPICTING ADJACENT PIPE OPENINGS AND OVERLAPPING H-BARS

(VERTICAL REINFORCING NOT SHOWN FOR CLARITY)



ELEVATION VIEW

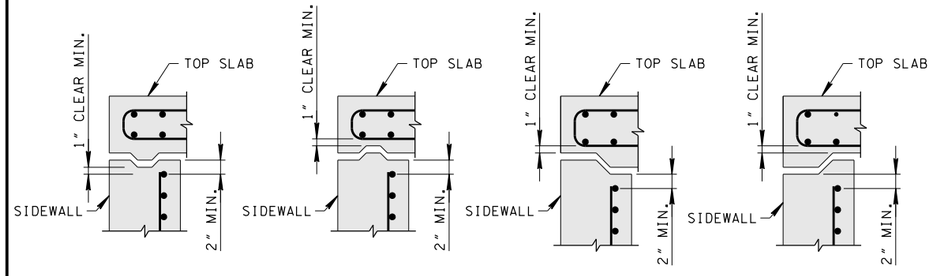
(EDGE OF PIPE OPENING IS GREATER THAN OR EQUAL TO 6" FROM SIDE WALL)



ELEVATION VIEW

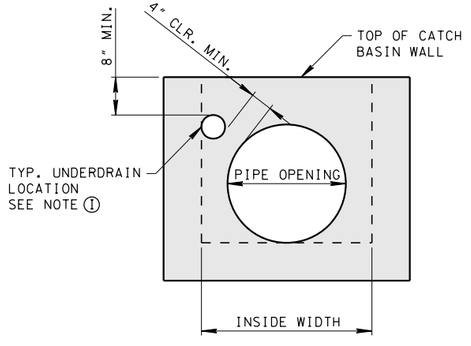
(EDGE OF PIPE OPENING IS LESS THAN 6" FROM SIDE WALL)

BAR TERMINATION TO ACCOMMODATE PIPE OPENINGS



NOTE: WHEN ALTERNATE JOINT DETAIL IS PROVIDED, MINIMUM CLEAR DIMENSIONS AND INTERIOR SLAB THICKNESS SHOWN ON STANDARDS SHALL BE MAINTAINED.

ALTERNATE JOINT DETAILS



TYPICAL UNDERDRAIN CONNECTION DETAIL

SEE NOTE (H)

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL NONCIRCULAR CAST-IN-PLACE AND ALL NONCIRCULAR PRECAST CATCH BASINS, MANHOLES, JUNCTION BOXES AND SPRING DRAINS.

(B) PLACE ALL REINFORCING STEEL AS DETAILED ON APPLICABLE STANDARD DRAWINGS. TO ACCOMMODATE A PIPE OPENING, THE REQUIRED REINFORCING SCHEMES SHALL BE MODIFIED BY CUTTING OR TRIMMING THE AFFECTED REINFORCING STEEL AS DETAILED ON THIS STANDARD DRAWING.

(C) HORIZONTAL H-BARS AS DETAILED ON THE STANDARD DRAWINGS ASSUME PIPE OPENINGS AS SHOWN ON THE APPLICABLE STANDARD DRAWING. IN THESE CASES, THE LEGS OF THE H-BARS SHALL BE TERMINATED TO ACCOMMODATE PIPE OPENINGS AND THERE WILL BE NO LAPPING OF H-BARS. IN THE CASE SHOWN ON THIS SHEET, WITH PIPE OPENINGS IN ADJACENT CATCH BASIN WALLS, A FULL LENGTH LAP SHALL BE REQUIRED IN THE SOLID WALL. IF PIPE OPENINGS ARE IN OPPOSITE WALLS BUT ROTATED 90° FROM WHAT IS DEPICTED ON THE STANDARD DRAWING (I.E. FOR A CROSS-DRAIN) THE CONTRACTOR HAS THE OPTION TO MODIFY THE H-BARS IN A SIMILAR FASHION SO AS TO ELIMINATE LAPS.

(D) L-BARS SHALL BE PLACED AS DETAILED ON THE APPLICABLE STANDARD DRAWING AND SHALL NOT BE MODIFIED.

(E) IF MODIFICATION TO STEEL REINFORCEMENT FOR A PIPE OPENING RESULTS IN ONE LEG OF AN H-BAR LESS THAN 6 INCHES LONG, THE LEG MAY BE OMITTED. IF MODIFICATION TO STEEL REINFORCEMENT FOR A PIPE OPENING RESULTS IN AN A-BAR LESS THAN 6 INCHES LONG, THEN THE A-BAR MAY BE OMITTED ENTIRELY.

(F) ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED AROUND PIPE OPENINGS AS DETAILED ON THIS SHEET. PROVIDE DIAGONAL BARS WHEN PIPE OPENING IS FOR A 30 INCH OR LARGER PIPE.

(G) TIE ADDITIONAL REINFORCEMENT TO THE EXISTING INSIDE FACE REINFORCEMENT.

(H) THE PREFERRED LOCATION OF UNDERDRAIN CONNECTIONS, WHEN REQUIRED, IS IN A WALL WITH NO PIPE OPENING. UNDERDRAIN CONNECTIONS SHALL BE LOCATED AT LEAST 8 INCHES FROM THE TOP OF THE CATCH BASIN WALL. IF PLACEMENT IN A WALL WITH A PIPE OPENING IS NECESSARY, THE OUTSIDE EDGE OF THE UNDERDRAIN SHALL BE LOCATED A MINIMUM OF 4 INCHES FROM THE OUTSIDE EDGE OF THE PIPE OPENING.

(I) UNDERDRAIN HOLE SHOULD BE PLACED BETWEEN THE REINFORCING BARS. DURING THE PLACEMENT OF THE UNDERDRAIN HOLE, EVERY EFFORT SHALL BE MADE TO AVOID CUTTING REINFORCEMENT.

REINFORCING STEEL LEGEND

DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS FOR RECTANGULAR STRUCTURES

NOT TO SCALE | 8-01-12 | D-CB-99

SUGGESTED SIZE OF WELDED WIRE FABRIC (WWF) FOR USE IN WALLS				
INSIDE DIA. OF CATCH BASIN DIA. (INCHES)	WALL THICKNESS W (INCHES)	AREA STEEL REQ'D (SQ. IN./FT.)	WWF OPTION A	WWF OPTION B
48	5	0.12	WWF 3x8-W3xW1.8	WWF 3x12-W3xW2.1
60	6	0.15	WWF 2x8-W2.5xW2.5	WWF 3x12-W3xW2.1 (2 LAYERS)
72	7	0.18	WWF 3x6-W4.5xW2.1	WWF 3x12-W3xW2.1 (2 LAYERS)
84	8	0.21	WWF 2x6-W3.5xW2.1	WWF 3x12-W3xW2.1 (2 LAYERS)
96	9	0.24	WWF 2x8-W4xW2.1	WWF 3x12-W3xW2.1 (2 LAYERS)
108	10	0.30	WWF 2x6-W5xW2.5	---
120	11	0.36	WWF 2x8-W6xW3	---

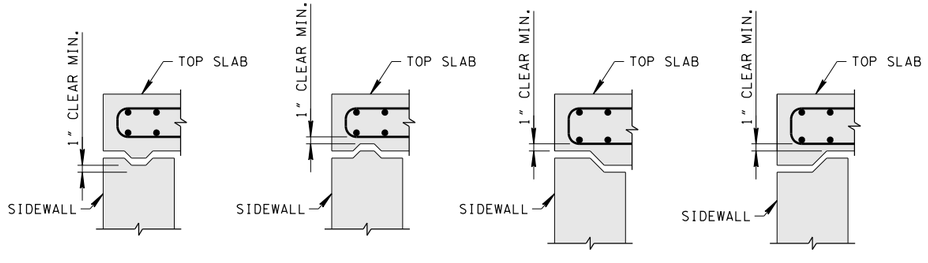
WWF A×B-WC×WD

A = SPACING OF HORIZONTAL WIRES, IN.
B = SPACING OF VERTICAL WIRES, IN.
C = HORIZONTAL WIRE SIZE
D = VERTICAL WIRE SIZE

GENERAL NOTES

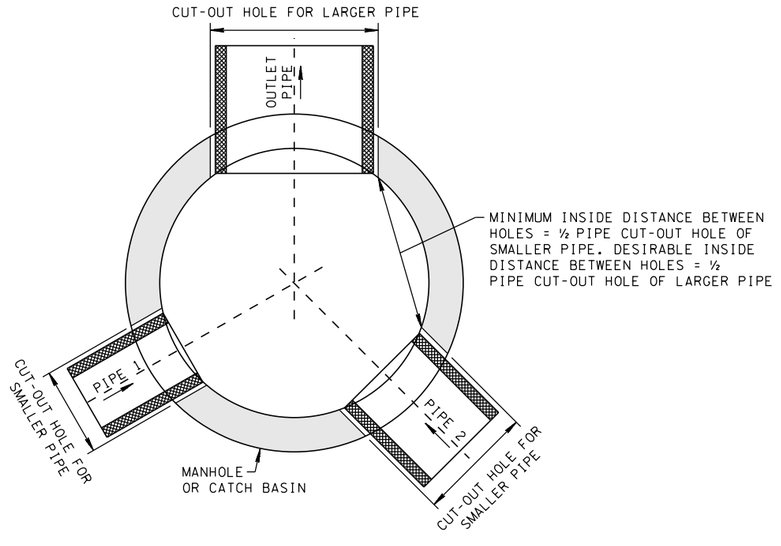
(A) DRAWING TO BE USED FOR ALL CIRCULAR PRECAST CATCH BASINS AND MANHOLES.

(B) WELDED WIRE FABRIC (WWF) SHALL BE PLACED AS DESCRIBED IN ASTM C478 LATEST EDITION. WWF TABLE IS PROVIDED FOR REFERENCE ONLY. OTHER WWF SIZES AND/OR GRID SPACING MAY BE UTILIZED TO OBTAIN THE REQUIRED AREA OF STEEL REINFORCEMENT. A MAXIMUM OF TWO LAYERS MAY BE UTILIZED. WWF SHALL NOT BE UTILIZED IN TOP SLABS.



NOTE: WHEN ALTERNATE JOINT DETAIL IS PROVIDED, MINIMUM CLEAR DIMENSIONS AND INTERIOR SLAB THICKNESS SHOWN ON STANDARDS SHALL BE MAINTAINED.

ALTERNATE JOINT DETAILS



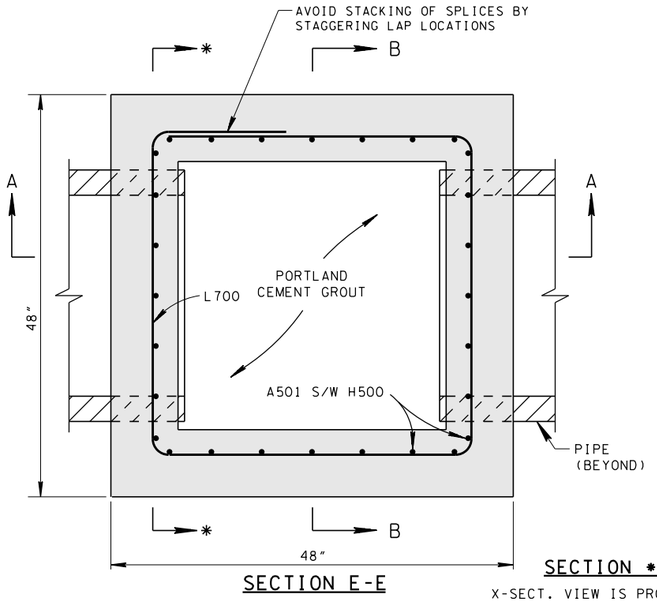
NOTE: IF SMALLER PIPE IS AN UNDERDRAIN, A 6" MINIMUM INSIDE OFFSET FROM AN ADJACENT HOLE IS REQUIRED. OFFSET MAY BE HORIZONTAL OR VERTICAL. UNDERDRAIN CONNECTIONS SHALL BE LOCATED A MINIMUM OF 8" BELOW THE BOTTOM OF THE TOP SLAB.

MULTIPLE PIPE CONNECTIONS TO A ROUND STRUCTURE

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS FOR ROUND STRUCTURES

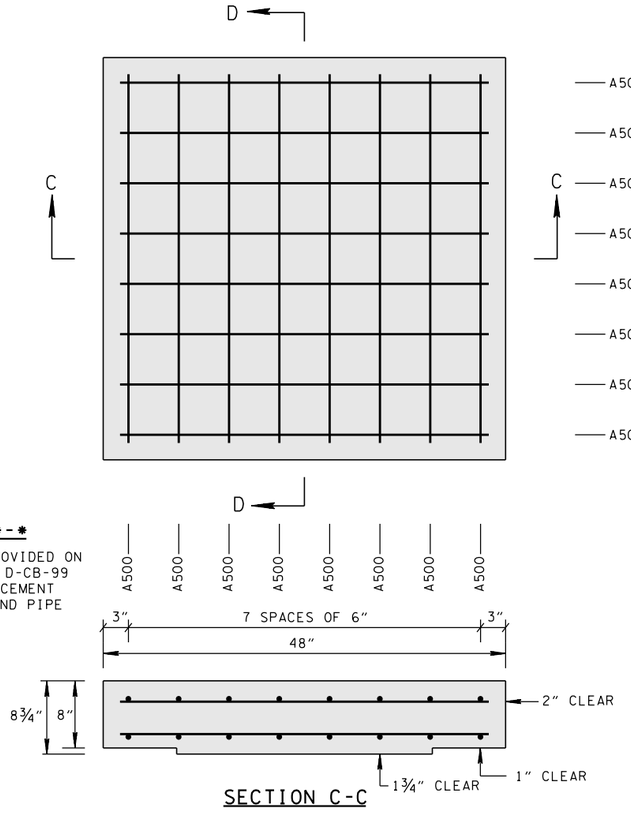
NOT TO SCALE | 8-01-12 | D-CB-99R



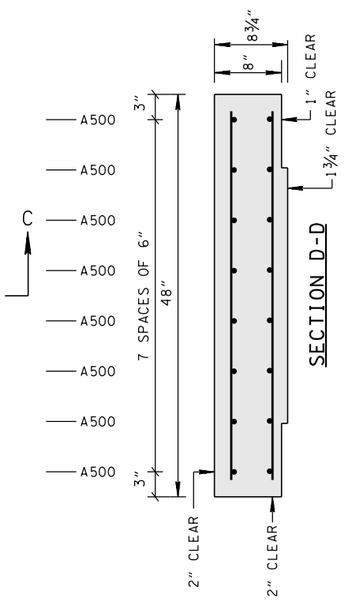
SECTION E-E

SECTION *-*

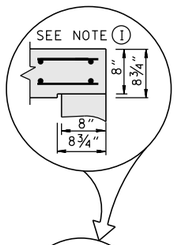
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

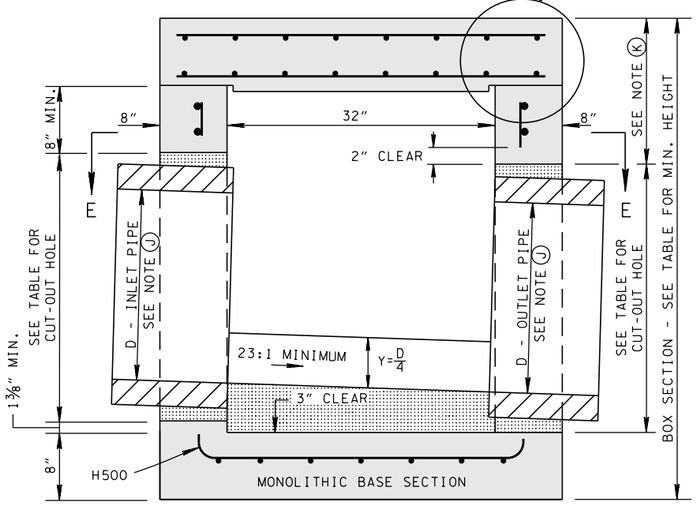


SECTION C-C



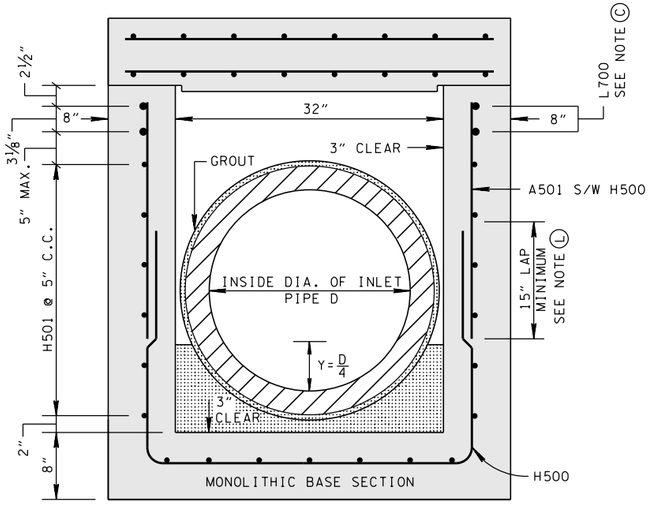
SECTION D-D





SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

- REV. 1-19-00: DELETED NOTE (2) UNDER JUNCTION BOX HEIGHT TABLE.
- REV. 6-10-01: CHANGED PAY ITEM IN GENERAL NOTE (J) TO 611-02.10.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

JUNCTION BOX DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	JUNCTION BOX MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.29
24	3	32	58	3.83

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 1 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 1 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

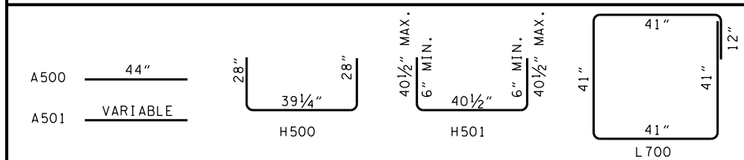
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 16 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.10 JUNCTION BOX, TYPE 1 PER EACH.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

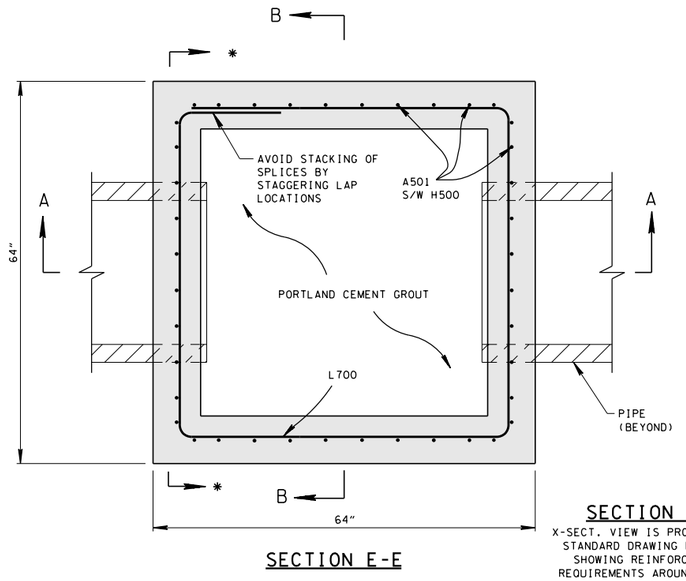
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 32" x 32" SQUARE CONCRETE NO. 1 JUNCTION BOX

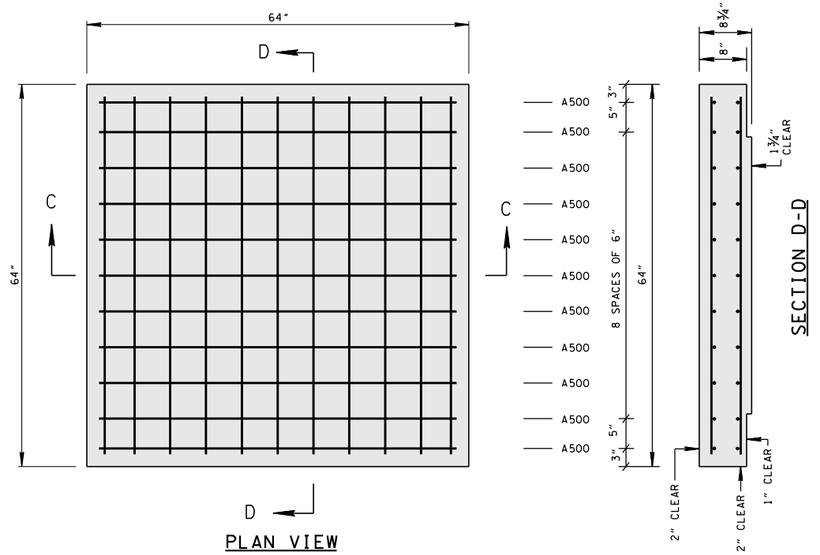
4-1-98 | D-JBS-1



SECTION E-E

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW

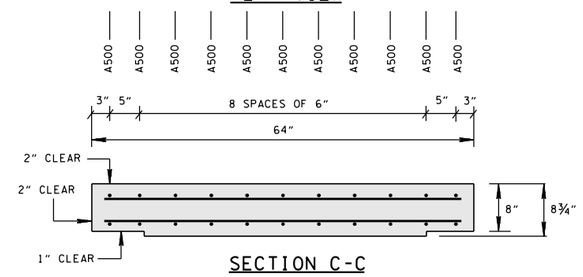
SECTION D-D

JUNCTION BOX DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	JUNCTION BOX MINIMUM DESIGN DEPTH (FEET)
18	2½	25	51	3.29
24	3	32	58	3.83
30	3½	39	65	4.38
36	4	46	72	4.92

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.



SECTION C-C

- REV.1-19-00: DELETED NOTE (2) UNDER JUNCTION BOX HEIGHT TABLE. MODIFIED GENERAL NOTE (A)
- REV. 6-10-01: CHANGED PAY ITEM IN GENERAL NOTE (J) TO 611-02.11.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

  REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 2 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 2 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f_c' = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

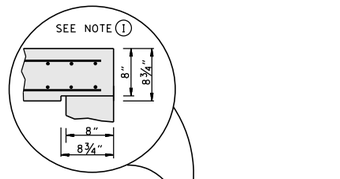
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

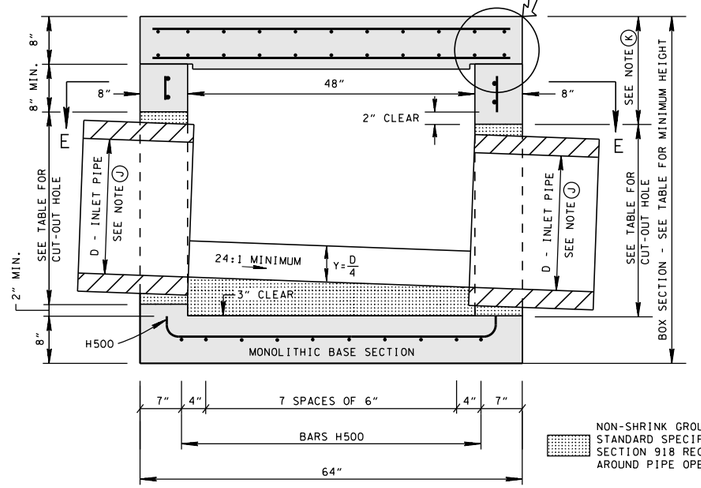
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 16 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½" OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

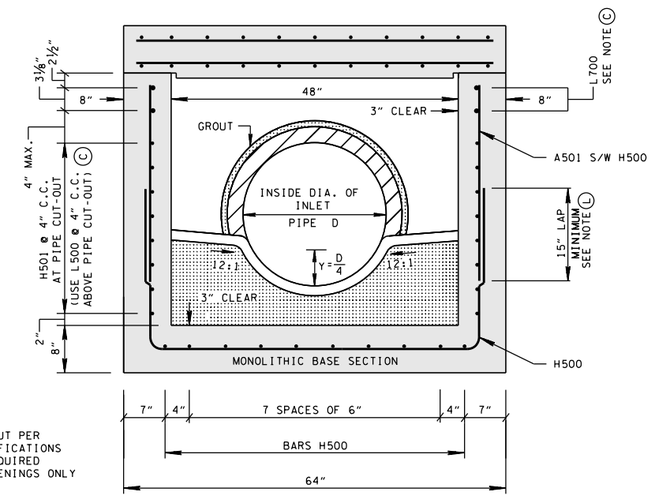
(M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.11 JUNCTION BOX, TYPE 2 PER EACH.





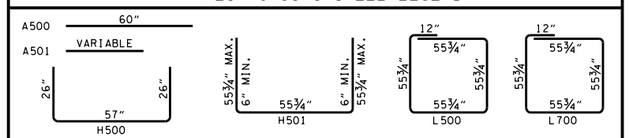
SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

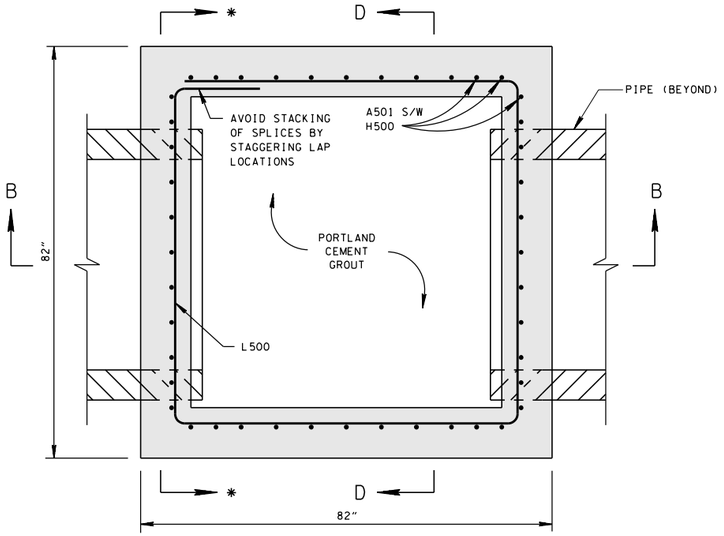
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 2 JUNCTION BOX

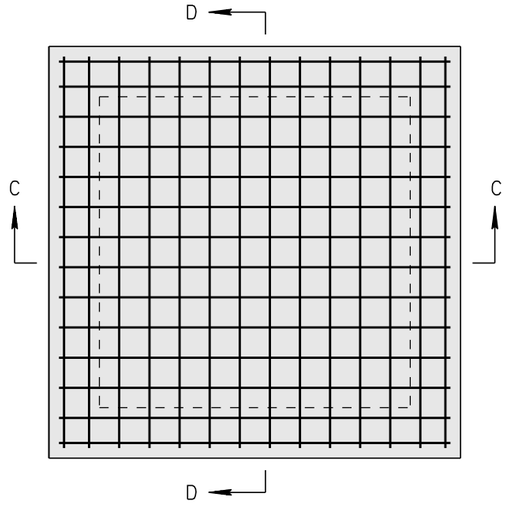
NOT TO SCALE

4-1-98

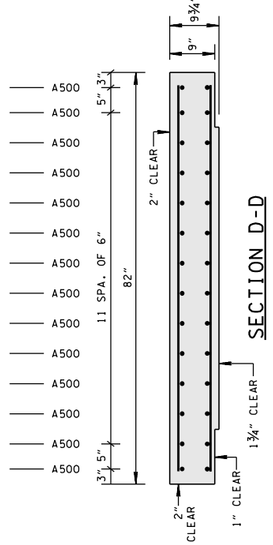
D-JBS-2



SECTION E-E



PLAN VIEW



SECTION D-D

JUNCTION BOX DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	JUNCTION BOX MINIMUM DESIGN DEPTH (FEET)
18	2½	25	56	3.63
24	3	32	63	4.17
30	3½	39	70	4.71
36	4	46	77	5.25
42	4½	53	84	5.79
48	5	60	91	6.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

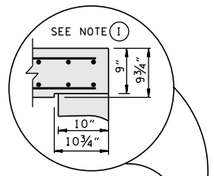
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

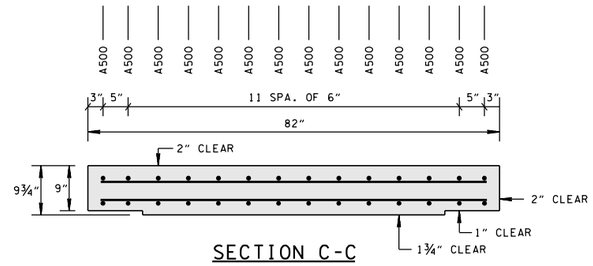
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
- REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
- REV. 6-10-01: CHANGED PAY ITEM IN GENERAL NOTE (J) TO 611-02.12.

REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

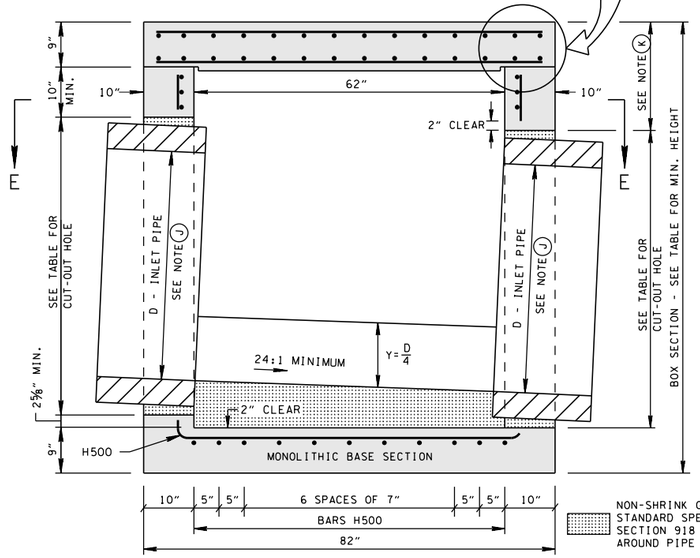
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



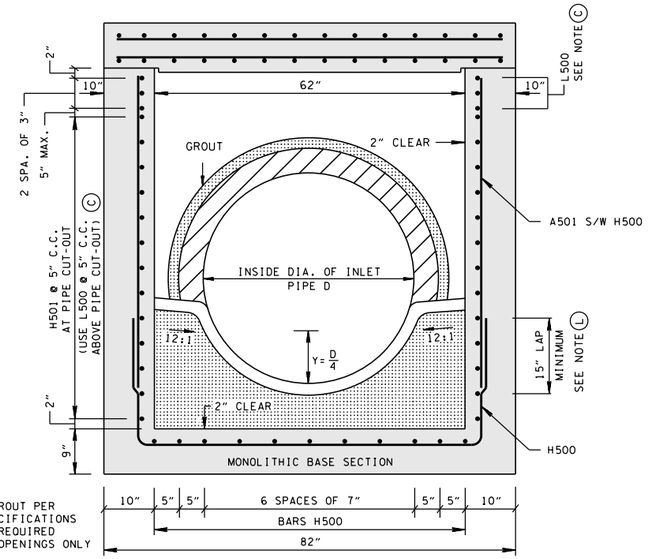


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 3 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 3 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

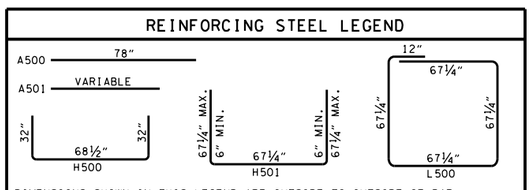
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 19 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½" OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.12 JUNCTION BOX, TYPE 3 PER EACH.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

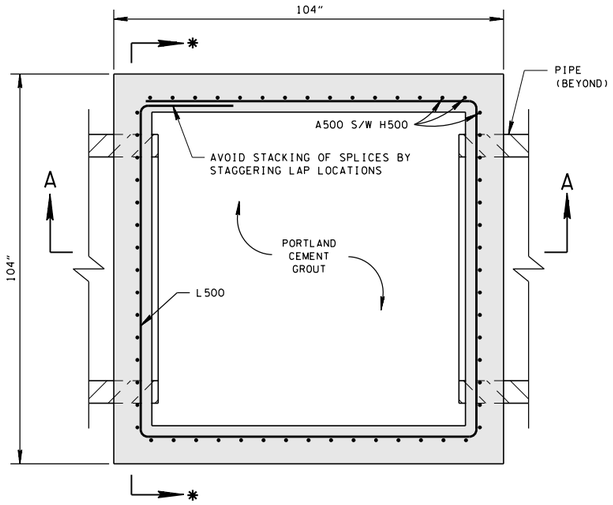
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 JUNCTION BOX

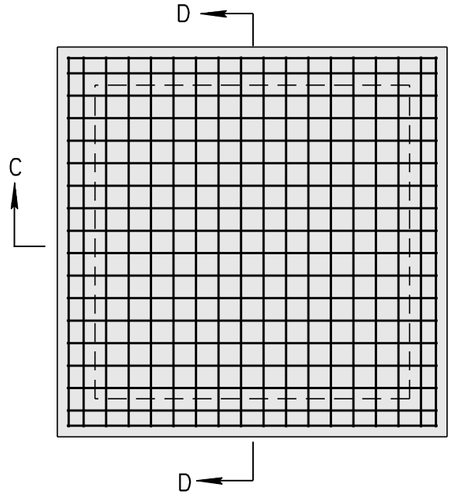
NOT TO SCALE

4-1-98

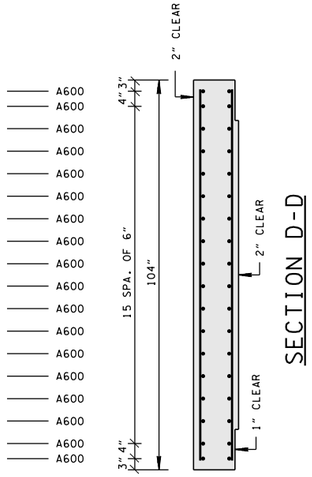
D-JBS-3



SECTION E-E



PLAN VIEW



SECTION D-D

JUNCTION BOX DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	JUNCTION BOX MINIMUM DESIGN DEPTH (FEET)
18	2½	25	58½	3.83
24	3	32	65½	4.38
30	3½	39	72½	4.92
36	4	46	79½	5.46
42	4½	53	86½	6.00
48	5	60	93½	6.54
54	5½	67	100½	7.08
60	6	74	107½	7.63
66	6½	81	114½	8.17

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

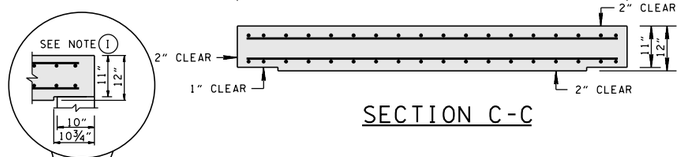
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: MODIFIED REINFORCING STEEL IN LID.
- ☐ REV. 6-10-01: CHANGED MAXIMUM EMBANKMENT DEPTH IN GENERAL NOTE (B) AND PAY ITEM IN GENERAL NOTE (J) TO 611-02.13.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

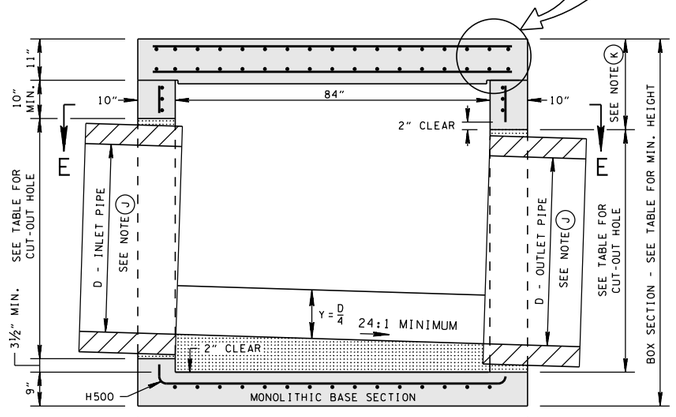
  REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

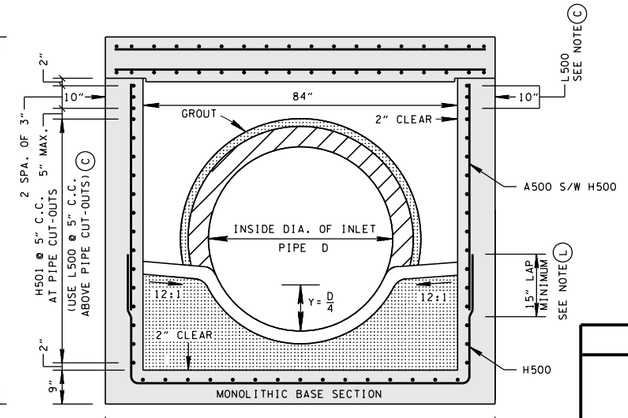


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 4 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 4 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 30 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_Y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

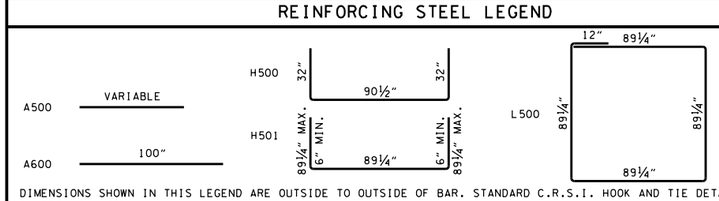
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.13 JUNCTION BOX, TYPE 4 PER EACH.

REINFORCING STEEL LEGEND



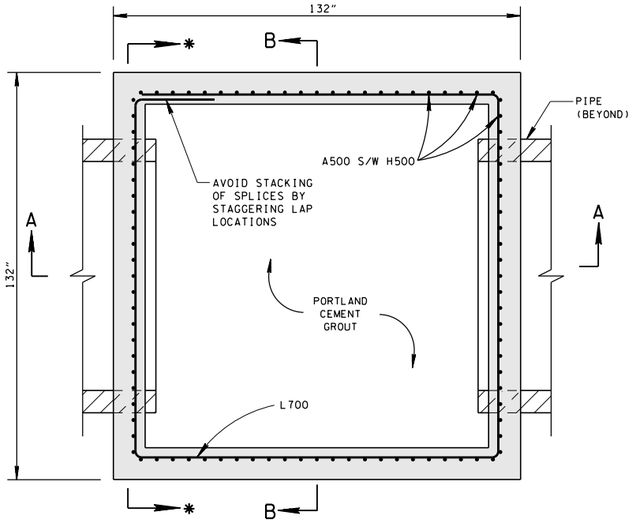
DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 7' X 7' SQUARE CONCRETE NO. 4 JUNCTION BOX

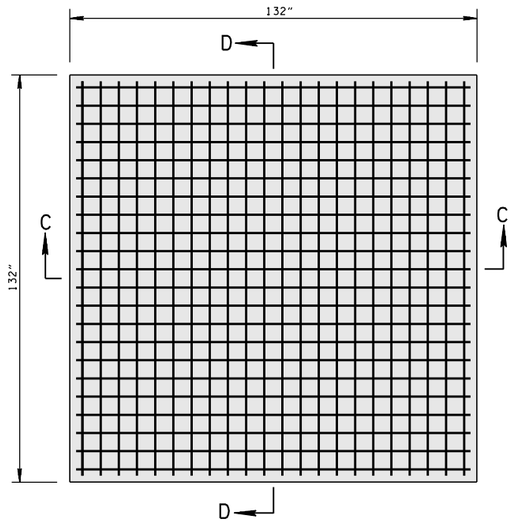
NOT TO SCALE | 1-19-00 | D-JBS-4



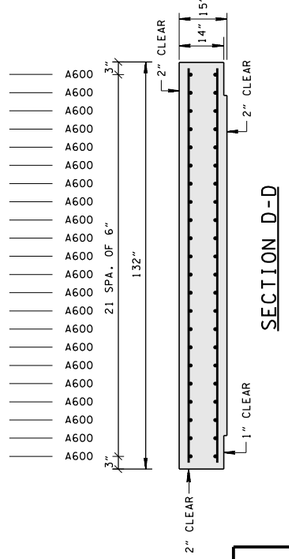
SECTION E-E

SECTION *-*

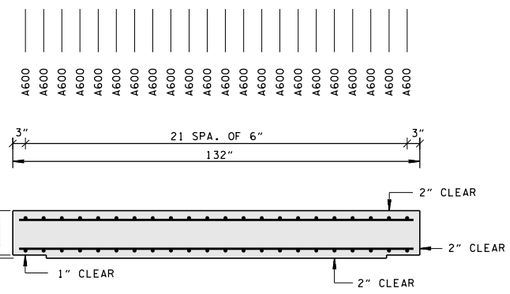
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION D-D



SECTION C-C

JUNCTION BOX DIMENSIONS				
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY JUNCTION BOX MINIMUM DESIGN DEPTH (FEET)
18	2½	25	65½	4.17
24	3	32	72½	4.71
30	3½	39	79½	5.25
36	4	46	86½	5.79
42	4½	53	93½	6.33
48	5	60	100½	6.88
54	5½	67	107½	7.42
60	6	74	114½	7.96
66	6½	81	121½	8.50
72	7	88	128½	9.04
78	7½	95	135½	9.58

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 6-10-01: CHANGED MAXIMUM EMBANKMENT DEPTH IN GENERAL NOTE (B) AND PAY ITEM IN GENERAL NOTE (J) TO 611-02.14.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 5 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 5 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 30 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

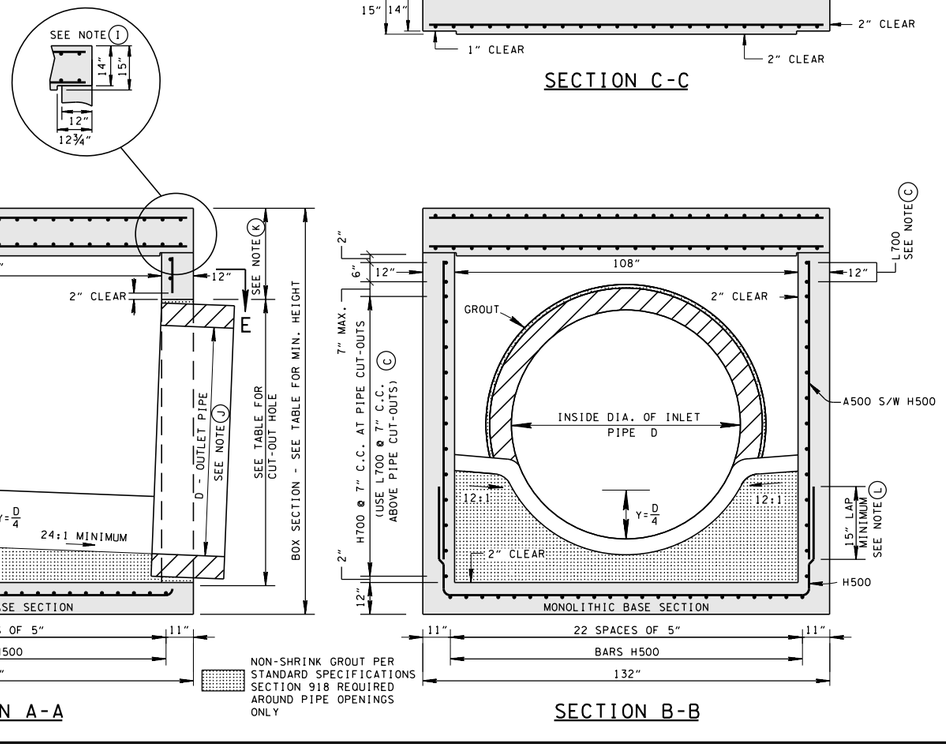
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A500 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½" OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

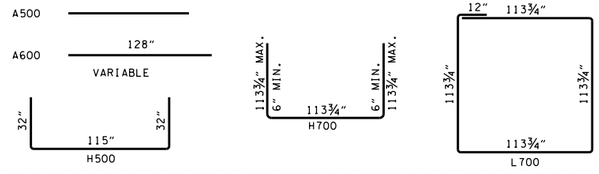
(M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.14 JUNCTION BOX, TYPE 5 PER EACH.



SECTION A-A

SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 5 JUNCTION BOX

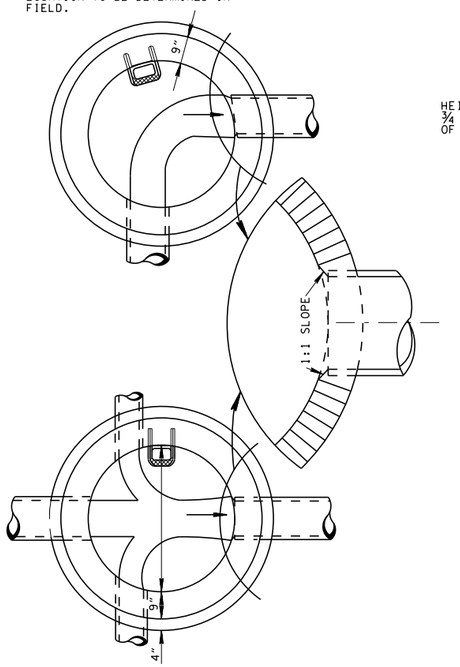
NOT TO SCALE

5-27-01

D-JBS-5

NOTE:

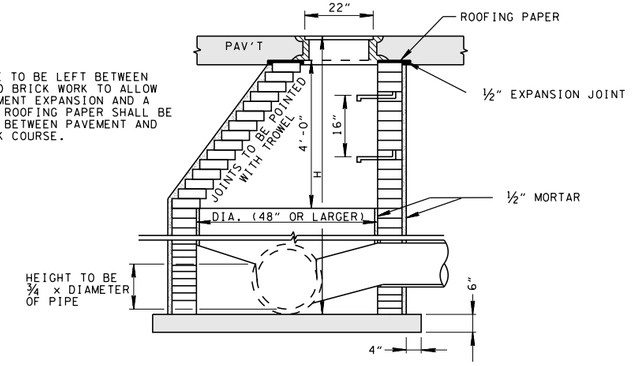
PIPE OFF CENTER. EXACT LOCATION TO BE DETERMINED IN FIELD.



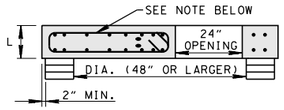
TYPICAL PLANS

NOTE:

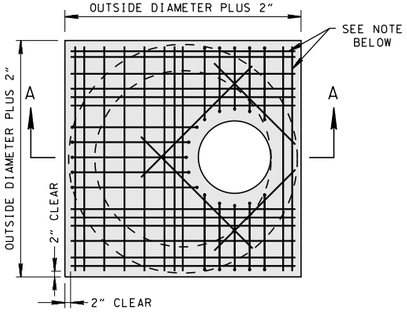
½" SPACE TO BE LEFT BETWEEN FRAME AND BRICK WORK TO ALLOW FOR PAVEMENT EXPANSION AND A LAYER OF ROOFING PAPER SHALL BE REQUIRED BETWEEN PAVEMENT AND TOP BRICK COURSE.



BRICK MANHOLE WITH ECCENTRIC TAPER



SECTION A-A



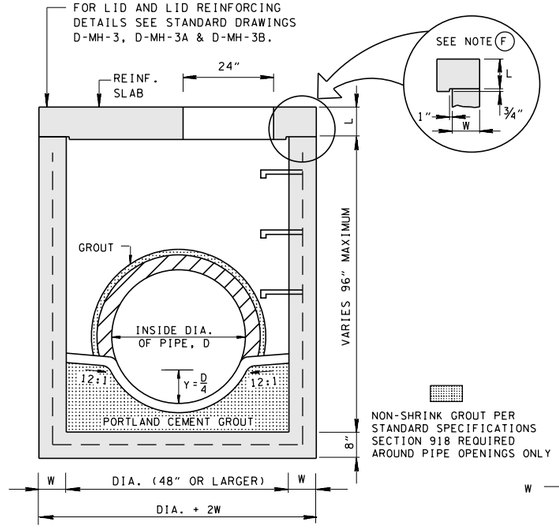
LID REINFORCING

COST OF REINFORCED CONCRETE SLAB TO BE INCLUDED IN PRICE BID FOR MANHOLE OF REQUIRED DEPTH.

SHALLOW BRICK MANHOLE TOP SLAB DETAIL

WHEN MANHOLES OF BRICK ARE TOO SHALLOW TO SECURE PROPER BATTER, THE WALLS SHALL BE BUILT VERTICALLY AND THE STRUCTURE CAPPED WITH A CONCRETE SLAB WITH HOLE FOR MANHOLE FRAME LOCATED ECCENTRICALLY IN THE SLAB. SEE TABLE FOR LID THICKNESS, (L). REINFORCEMENT IN THE TOP SLAB SHALL BE PROVIDED AS DETAILED ON STANDARD DRAWINGS D-MH-3, D-MH-3A & D-MH-3B FOR THE APPROPRIATE DIAMETER OF MANHOLE, WITH THE FOLLOWING EXCEPTIONS. T-BARS SPECIFIED AT OUTER EDGE OF SLAB SHALL BE REPLACED BY A-BARS OF THE SAME SIZE AND ALL REINFORCING SHALL EXTEND TO THE EDGE OF THE SLAB WITH 2 INCHES CLEAR AT ENDS.

FOR LID AND LID REINFORCING DETAILS SEE STANDARD DRAWINGS D-MH-3, D-MH-3A & D-MH-3B.



NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY

STANDARD FLAT TOP MANHOLE

GENERAL NOTES

(A) THIS MANHOLE WILL CONFORM TO THE STANDARD DRAWING UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER TO MEET SPECIAL CONDITIONS. THERE WILL BE NO VARIATION FROM THE CONTRACT PRICE DUE TO SUCH CHANGES. IN ALL CASES IT MUST BE BUILT LARGE ENOUGH TO ACCOMMODATE INLET AND OUTLET PIPES.

(B) THE PRECAST CONCRETE MANHOLE SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS SET OUT IN ASTM-C478 LATEST REVISION.

(C) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR MANHOLES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(D) FOR MASONRY MANHOLES, ALL WALLS WILL BE LAID IN COURSES CONSISTING OF HEADERS ONLY.

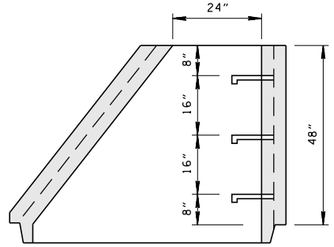
(E) THE COST OF CASTINGS FOR COVERS AND RIMS AND OF MANHOLE STEPS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR MANHOLES.

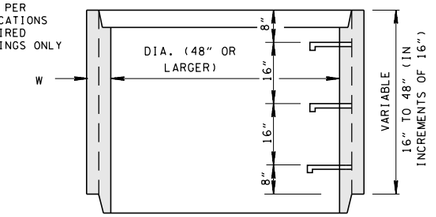
(F) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

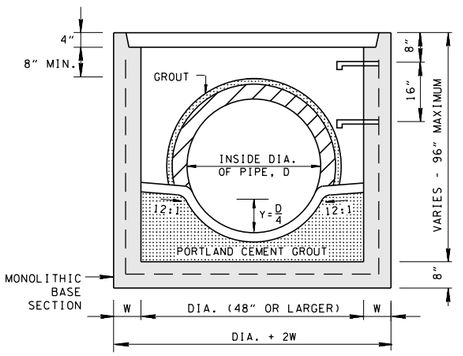
(G) THE PLACING OF CONCRETE AND FORMING OF INVERTS AS INDICATED FOR BRICK MANHOLES SHALL APPLY IN LIKE MANNER FOR PRECAST MANHOLES. COST OF FURNISHING AND PLACING THE CONCRETE TO BE INCLUDED IN UNIT PRICE BID PER MANHOLE.

(H) PAYMENT FOR BRICK MANHOLES WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH AND 611-01.03, MANHOLES, > 8'-12' DEPTH PER EACH.

(I) PAYMENT FOR PRECAST CONCRETE CIRCULAR MANHOLES WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH THROUGH 611-01.07, MANHOLES, > 24'-28' DEPTH PER EACH. PAYMENT FOR MANHOLES DEEPER THAN 28' WILL BE MADE UNDER ITEMS NUMBERS 611-01.10 THROUGH 611-01.19, MANHOLE ____' TO ____' DEPTH PER EACH.





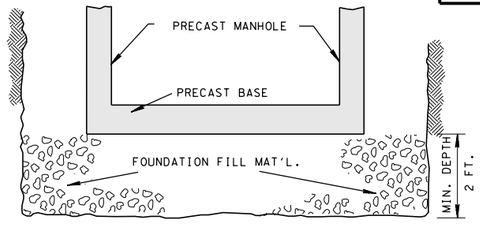


STANDARD ECCENTRIC CONCRETE RISER SECTION AND BASE SECTION

MANHOLE MAXIMUM DEPTH NOTES

(1) MAXIMUM DEPTH FOR BRICK MANHOLES IS 12.00'.

(2) MAXIMUM DEPTH FOR PRECAST CONCRETE CIRCULAR MANHOLES IS 40.00'.



FOUNDATION DETAIL FOR PRECAST BASE

NOTE:

COST OF FURNISHING AND PLACING FOUNDATION FILL MATERIAL TO BE INCLUDED IN UNIT PRICE BID FOR 611-01.XX, MANHOLES. FOUNDATION FILL MATERIAL SHALL BE IN CONFORMANCE WITH SECTION 204 OF THE T.D.O.T. STANDARD SPECIFICATIONS.

CUT-OUT HOLES

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)
18	2½	25
24	3	32
30	3½	39
36	4	46
42	4½	53
48	5	60
54	5½	67
60	6	74
66	6½	81
72	7	88
78	7½	95

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

MANHOLE DIMENSIONS

INSIDE DIA. OF MANHOLE DIA. (INCHES)	WALL THICKNESS W (INCHES)	LID THICKNESS L (INCHES)	OUTSIDE DIA. OF MANHOLE DIA. + 2W (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - STR. (INCHES)	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90° (INCHES)
48	5	8	58	24	15
60	6	8	72	36	24
72	7	9	86	48	30
84	8	9	100	60	36
96	9	10	114	66	42
108	10	10	128	72	48
120	11	10	142	78	54

REV. 11-20-72: WALL THICKNESS DELETED ON PRECAST SECTIONS.

REV. 1-15-73: ENTRANCE TO OUTLET PIPE BEVELED.

REV. 2-1-73: SKETCH ADDED SHOWING BEVELED ENTRY.

REV. 1-1-76: CHANGED DWG. NO. FROM S-M-3 TO D-MH-3 (MANSONRY DETAILS ADAPTED FROM OLD DWG. NO. S-M-2a).

REV. 7-2-84: ADDED NOTE TO FOUNDATION DETAIL.

☐ REV.7-29-96: REDREW SHEET ON CADD AND MADE MINOR CHANGES.

☐ REV. 1-19-97: ADDED GENERAL NOTE (C) ADDED CUT-OUT HOLE TABLE. ADDED MANHOLE DIMENSION TABLE.

☐ REV. 4-15-97: CHANGED MANHOLE DIMENSION TABLE.

☐ REV. 5-1-97: CHANGED DRAWING NO. FROM D-MH-3 TO D-MH-2. CHANGED BASE SECTION TO MONOLITHIC BASE SECTION.

☐ REV. 5-27-97: ADDED 108 AND 120 INCH DIAMETER MANHOLES.

☐ REV. 5-27-01: CHANGED GENERAL NOTE (G) AND ADDED GENERAL NOTE (H) ADDED MANHOLE MAXIMUM DEPTH NOTES.

REV. 8-01-12: REVISED CUT-OUT HOLES TABLE, SHALLOW BRICK MANHOLE TOP SLAB DETAIL AND ADDITIONAL MISC. DRAFTING EDITS. ADDED 48" MANHOLE.

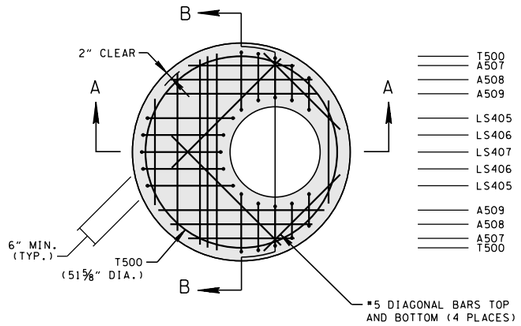
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

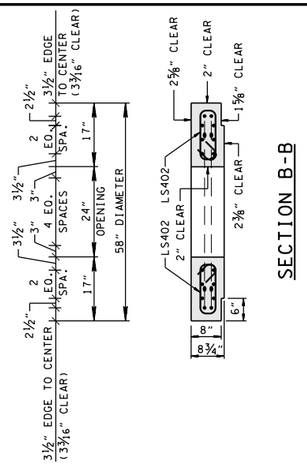
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD MASONRY & PRECAST NO. 3 MANHOLE

NOT TO SCALE | AUG 1972 | D-MH-2

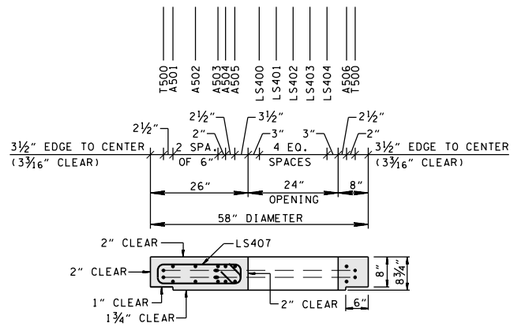
LID DETAIL FOR 48" DIAMETER NO. 3 MANHOLE





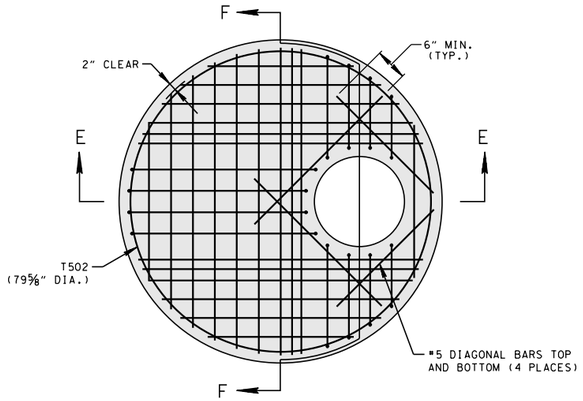
SECTION B-B

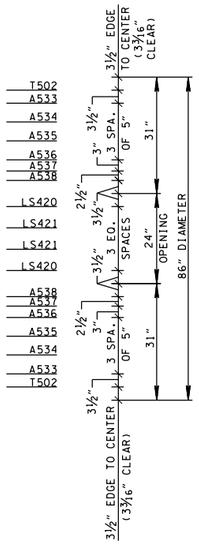
PLAN VIEW

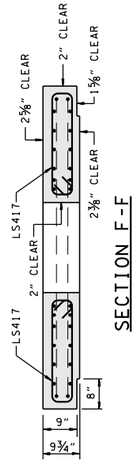


SECTION A-A

LID DETAIL FOR 72" DIAMETER NO. 3 MANHOLE

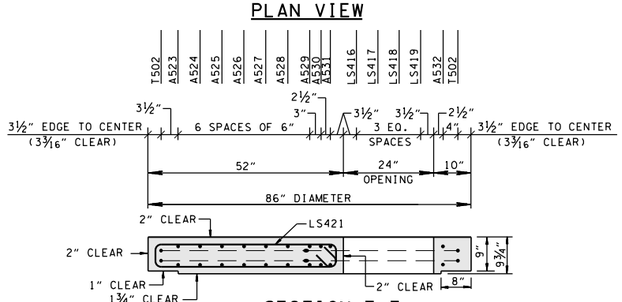






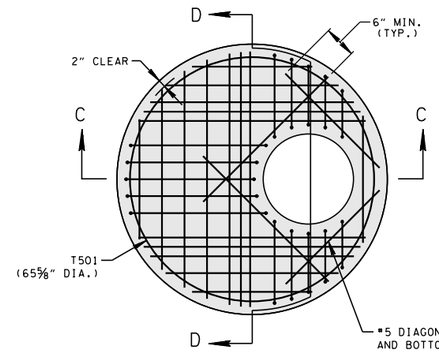
SECTION F-F

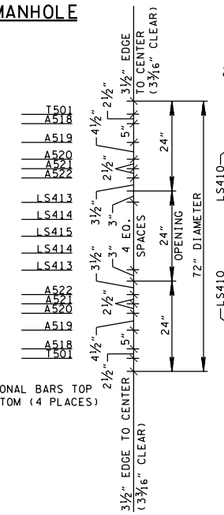
PLAN VIEW

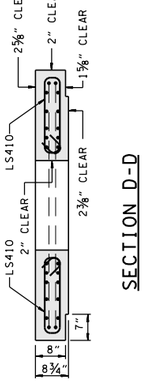


SECTION E-E

LID DETAIL FOR 60" DIAMETER NO. 3 MANHOLE

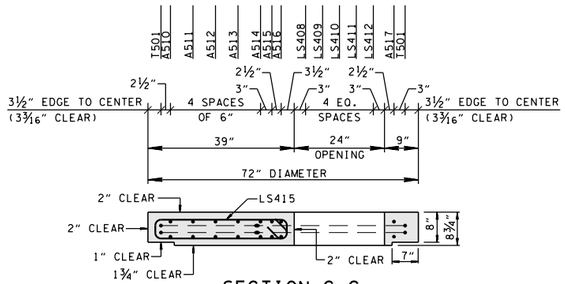






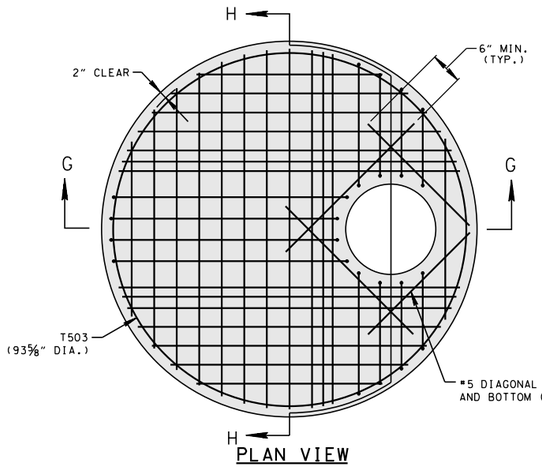
SECTION D-D

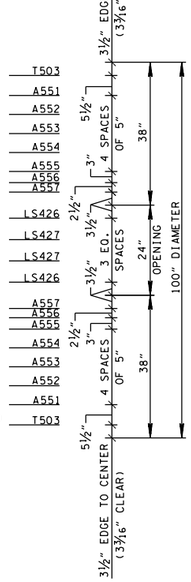
PLAN VIEW

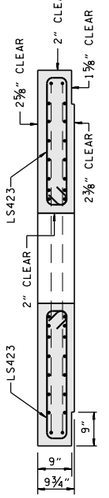


SECTION C-C

LID DETAIL FOR 84" DIAMETER NO. 3 MANHOLE

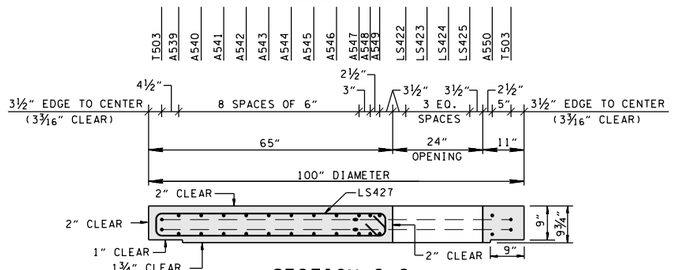






SECTION H-H

PLAN VIEW



SECTION G-G

REV. 4-15-00: CHANGED LID THICKNESS FOR 96" DIAMETER.

REV. 8-01-12: REVISED MANHOLE LIDS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING AND ADDITIONAL MISC. DRAFTING EDITS. ADDED 48" MANHOLE LID & MOVED 96" MANHOLE LID TO STANDARD DRAWING D-MH-3A.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

NOTE

WHERE VERTICAL LEGS OF LS-BARS INTERFERE WITH PLACEMENT OF A-BARS, A-BARS MAY BE SHIFTED TO INSIDE FACE OF LS-BARS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

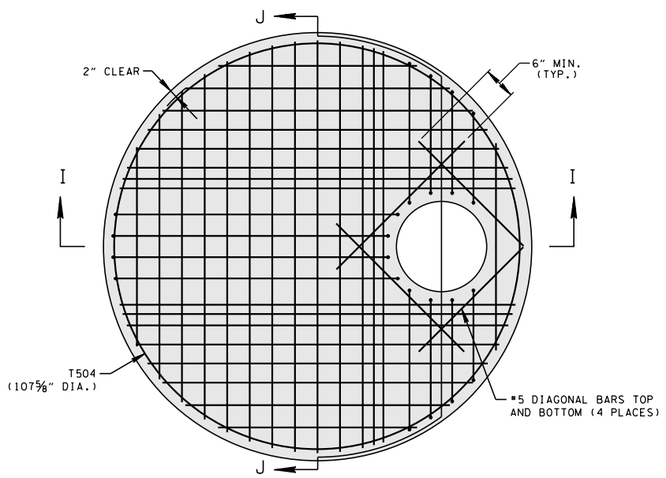
STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE

NOT TO SCALE | 5-1-97 | D-MH-3

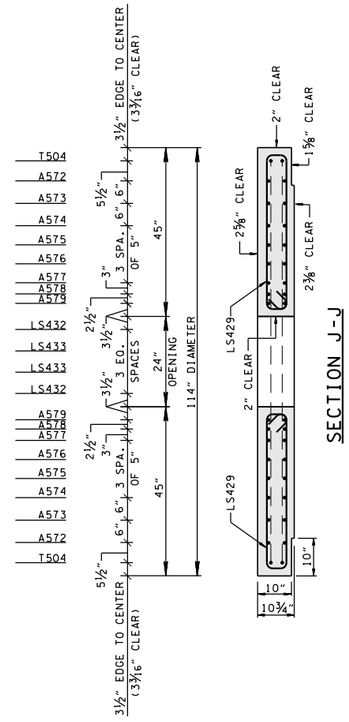
REV. 5-27-01: GENERAL REVISION.

REV. 8-01-12: REVISED MANHOLE LIDS FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING AND ADDITIONAL MISC. DRAFTING EDITS. ADDED 96" MANHOLE LID AND MOVED 120" MANHOLE TO STANDARD DRAWING D-MH-3B.

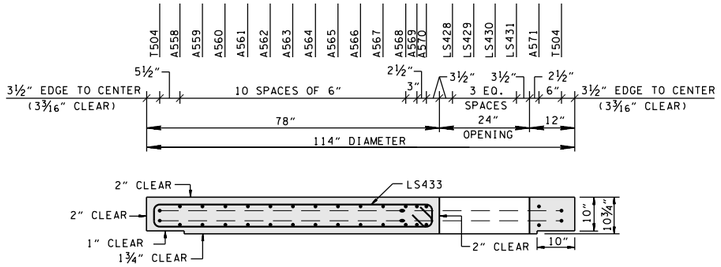
LID DETAIL FOR 96" DIAMETER NO. 3 MANHOLE



PLAN VIEW

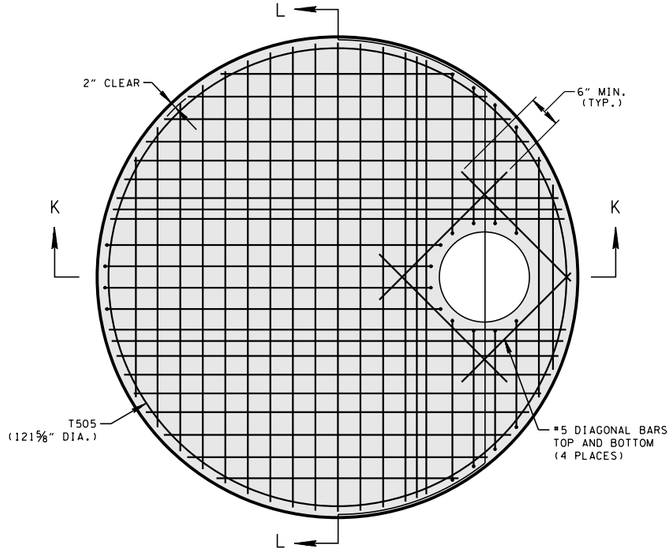


SECTION J-J

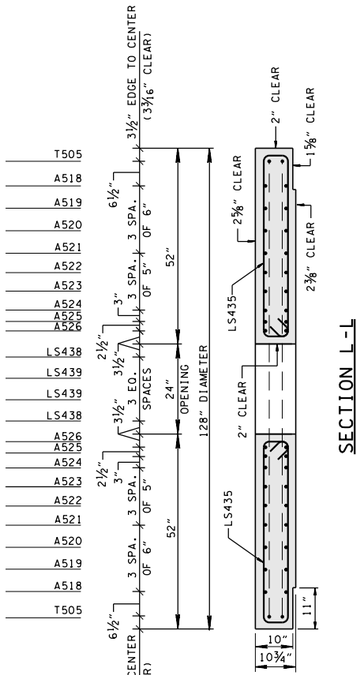


SECTION I-I

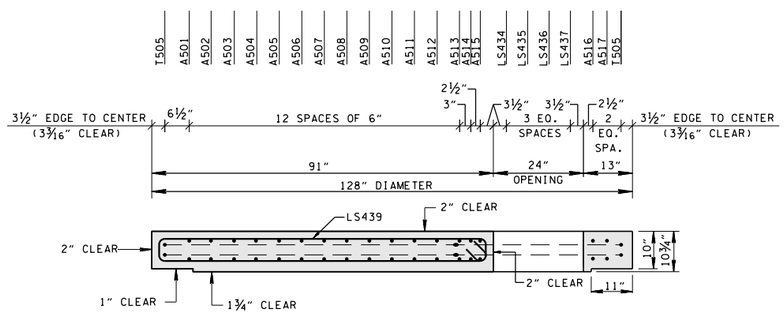
LID DETAIL FOR 108" DIAMETER NO. 3 MANHOLE



PLAN VIEW



SECTION L-L



SECTION K-K

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

NOTE

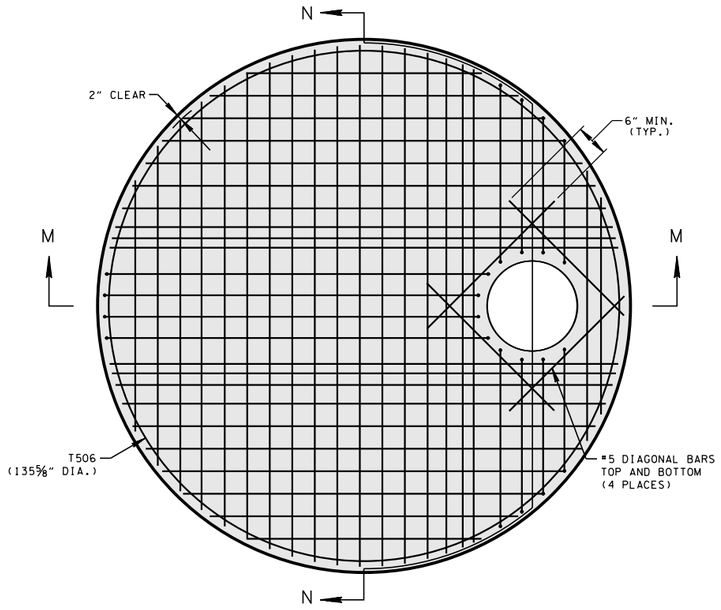
WHERE VERTICAL LEGS OF LS-BARS INTERFERE WITH PLACEMENT OF A-BARS, A-BARS MAY BE SHIFTED TO INSIDE FACE OF LS-BARS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

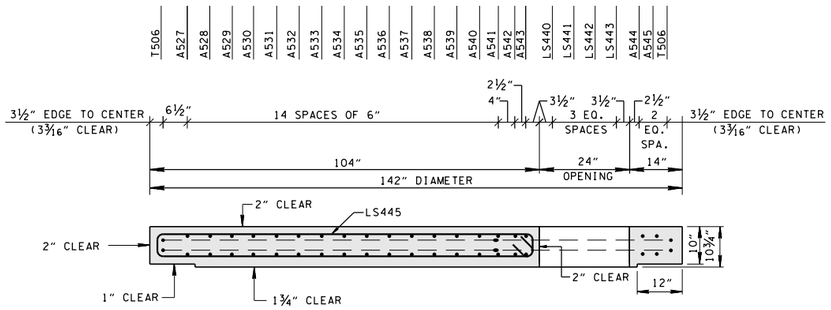
STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE (96" AND 108" DIA.)

NOT TO SCALE | 5-27-97 | D-MH-3A

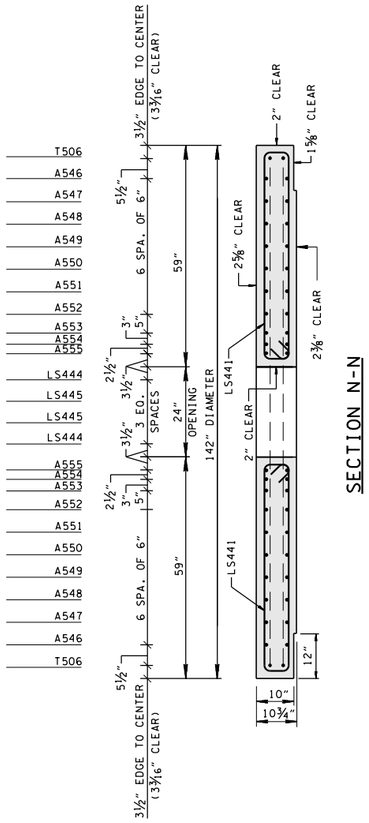
LID DETAIL FOR 120" DIAMETER NO. 3 MANHOLE



PLAN VIEW



SECTION M-M



SECTION N-N

NOTE

WHERE VERTICAL LEGS OF LS-BARS INTERFERE WITH PLACEMENT OF A-BARS, A-BARS MAY BE SHIFTED TO INSIDE FACE OF LS-BARS.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

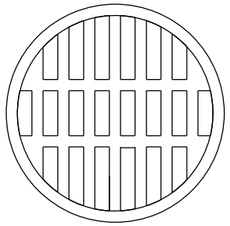
STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE

(120" DIA.)

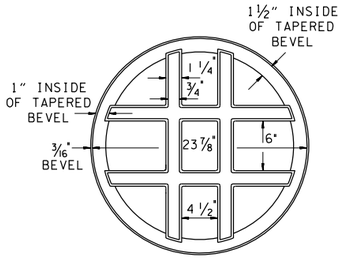
NOT TO SCALE

8-01-12

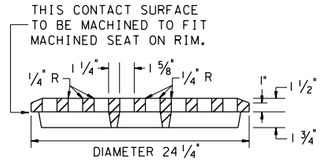
D-MH-3B



TOP VIEW



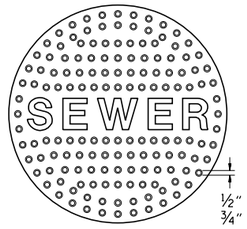
BOTTOM VIEW



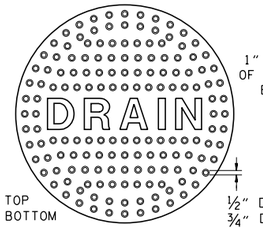
SECTIONAL VIEW

TYPE A MANHOLE COVER WITH OPEN GRATE

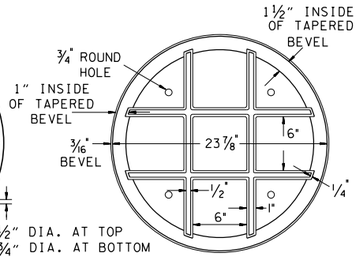
(WEIGHT OF COVER - 150 POUNDS)



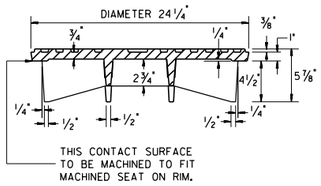
TOP VIEW
TYPE B MANHOLE COVER
(SANITARY SEWER)



TOP VIEW
TYPE C MANHOLE COVER
(STORM SEWER)



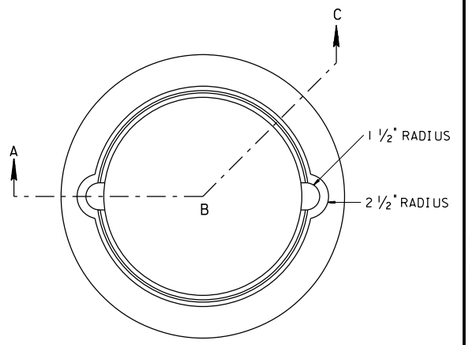
BOTTOM VIEW
FOR BOTH TYPE B AND C COVERS



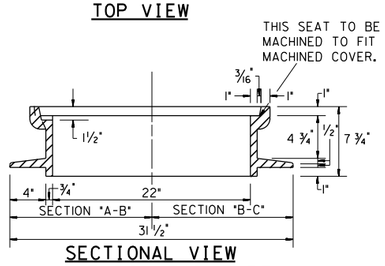
SECTIONAL VIEW
FOR BOTH TYPE B AND C COVERS

TYPE B AND C MANHOLE COVERS

(WEIGHT OF EITHER COVER - 165 POUNDS)



TOP VIEW



SECTIONAL VIEW

MANHOLE RIM FOR TYPE A, B AND C COVERS

(WEIGHT OF RIM-229 POUNDS)

REV. 1-15-73: USE OF ALUMINUM STEPS RESTRICTED.

REV. 1-01-76: CHANGED DRAWING NUMBER FROM S-M-3 TO D-MH-4 (CASTINGS DETAILS ADAPTED FROM OLD DRAWING NUMBER S-M-2a).

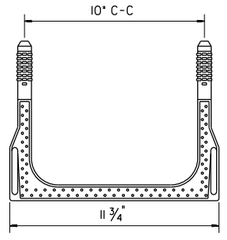
REV. 7-17-81: CORRECTED THICKNESS ON ALUMINUM STEP. DELETED NOTE REGARDING STEP SUBSTITUTION.

REV. 7-11-88: ADDED POLYETHYLENE COATED ALUMINUM STEPS.

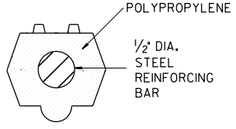
REV. 2-14-91: REDREW AND REORGANIZED SHEET. ADDED STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC MANHOLE SAFETY STEP.

☐ REV. 5-27-01: GENERAL REVISION.

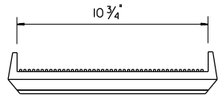
☐ REV. 8-01-12: GENERAL REVISION.



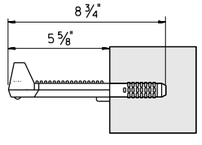
PLAN VIEW



SECTIONAL VIEW

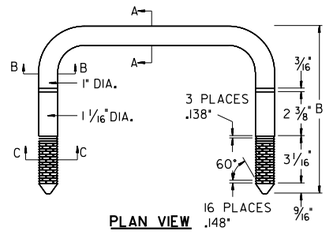


FRONT VIEW

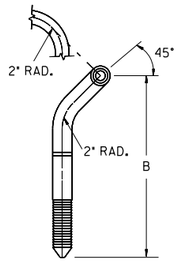


MATERIAL SPECIFICATIONS
THE POLYPROPYLENE, CONFORMING TO AN ASTM D-4101 SPECIFICATION, IS INJECTION MOLDED AROUND A 1/2" ASTM A-615 GRADE 60 STEEL REINFORCING BAR. THIS STEP EASILY MEETS THE REQUIREMENTS OF ASTM C-478, AASHTO M-199 AND OSHA INSTRUCTION STD 1-1.9.

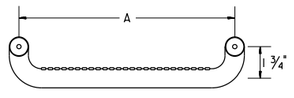
10 INCH PLASTIC MANHOLE STEP



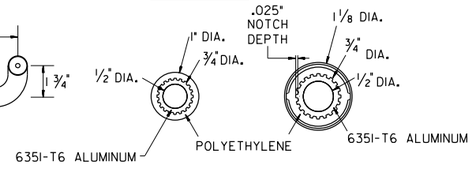
PLAN VIEW



SECTION A-A



FRONT VIEW

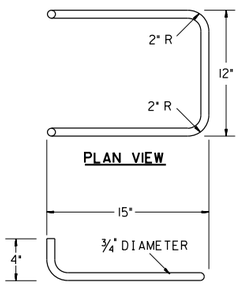


SECTION B-B SECTION C-C

WIDTH OF STEP TABLE	
DIMENSION A	DIMENSION B
12"	8 3/4"
14"	8 3/4"
16"	8 3/4"
16"	9 7/8"

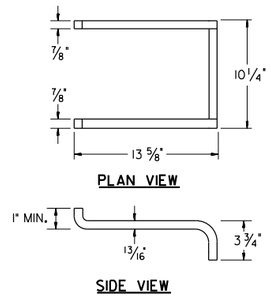
MATERIAL SPECIFICATIONS
① ALUMINUM: 6351-T6, CSA-S157-1969(CSA-HA5)
② POLYETHYLENE: LOW DENSITY, VIRGIN MATERIAL.

POLYETHYLENE COATED ALUMINUM STEPS



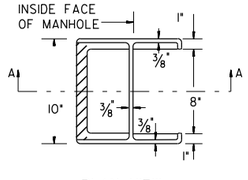
SIDE VIEW

WROUGHT IRON STEPS

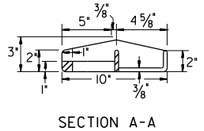


SIDE VIEW

ALUMINUM STEPS
(FOR USE WITH BRICK MASONRY MANHOLES ONLY)



PLAN VIEW



SECTION A-A

CAST-IRON STEPS

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

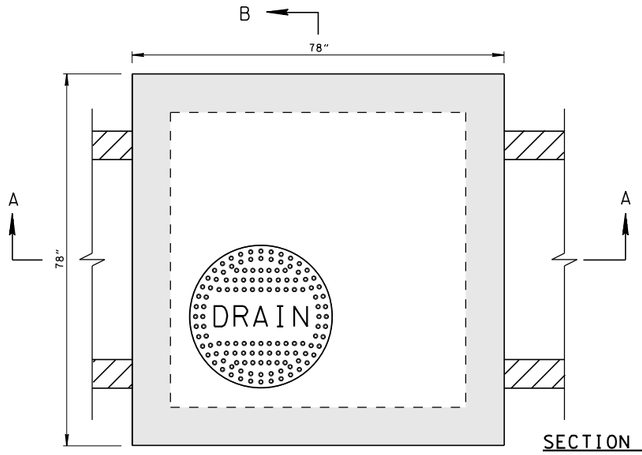
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD NO.3
MANHOLE CASTINGS AND STEPS

NOT TO SCALE

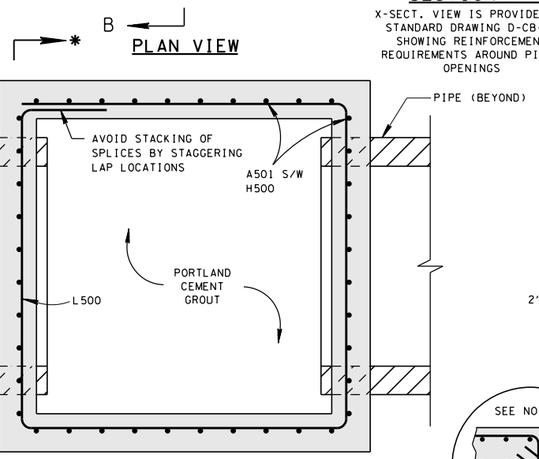
AUG. 72

D-MH-4

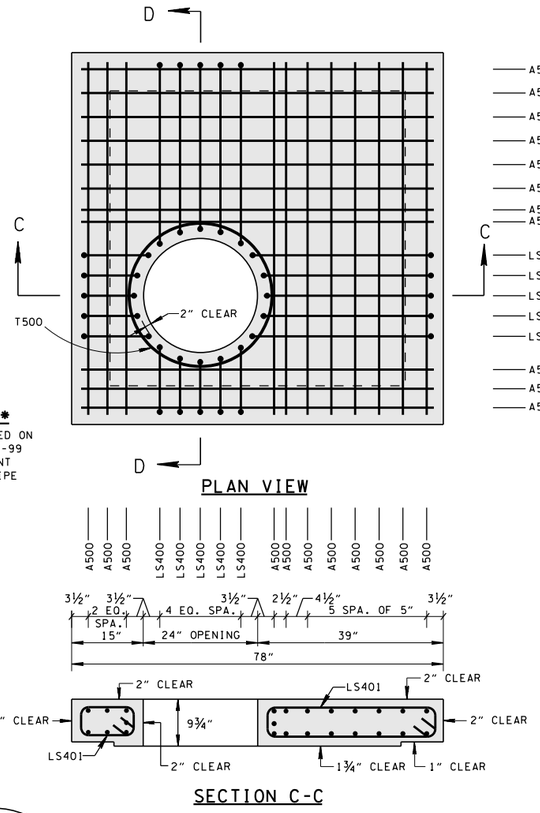


SECTION *-*

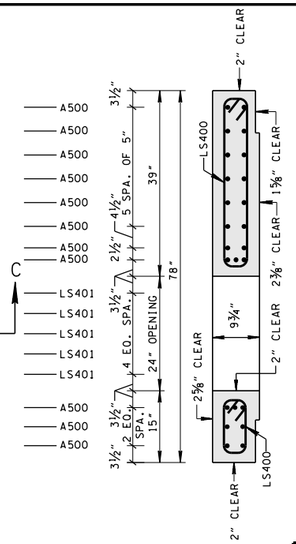
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



SECTION E-E



SECTION C-C



SECTION D-D

MANHOLE MAXIMUM DEPTH NOTE
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

MANHOLE DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	MANHOLE MINIMUM DESIGN DEPTH (FEET)
18	2½	25	55	4.19
24	3	32	62	4.73
30	3½	39	69	5.27
36	4	46	76	5.81
42	4½	53	83	6.35
48	5	60	90	6.90

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- REV. 10-26-98: MODIFIED DRAWING BY CHANGING SIZE STRUCTURE FROM 7' X 7' TO 5'2" X 5'2".
- REV. 5-27-01: CHANGED ITEM NUMBERS IN GENERAL NOTE (1) ADDED MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)
- REV. 9-11-12: CHANGED REINFORCING STEEL IN BASE SECTION.

  REV. 8-01-12: REVISED MANHOLE FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE 5'-2" X 5'-2" NO. 3 CONCRETE MANHOLES AND ALL PRECAST 5'-2" X 5'-2" NO. 3 CONCRETE MANHOLES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 25¾ INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF MANHOLE WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST MANHOLES FOR CAST-IN-PLACE MANHOLES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: $f_c' = 4{,}000$ POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, $F_y = 60{,}000$ POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST MANHOLE UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED MANHOLE UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

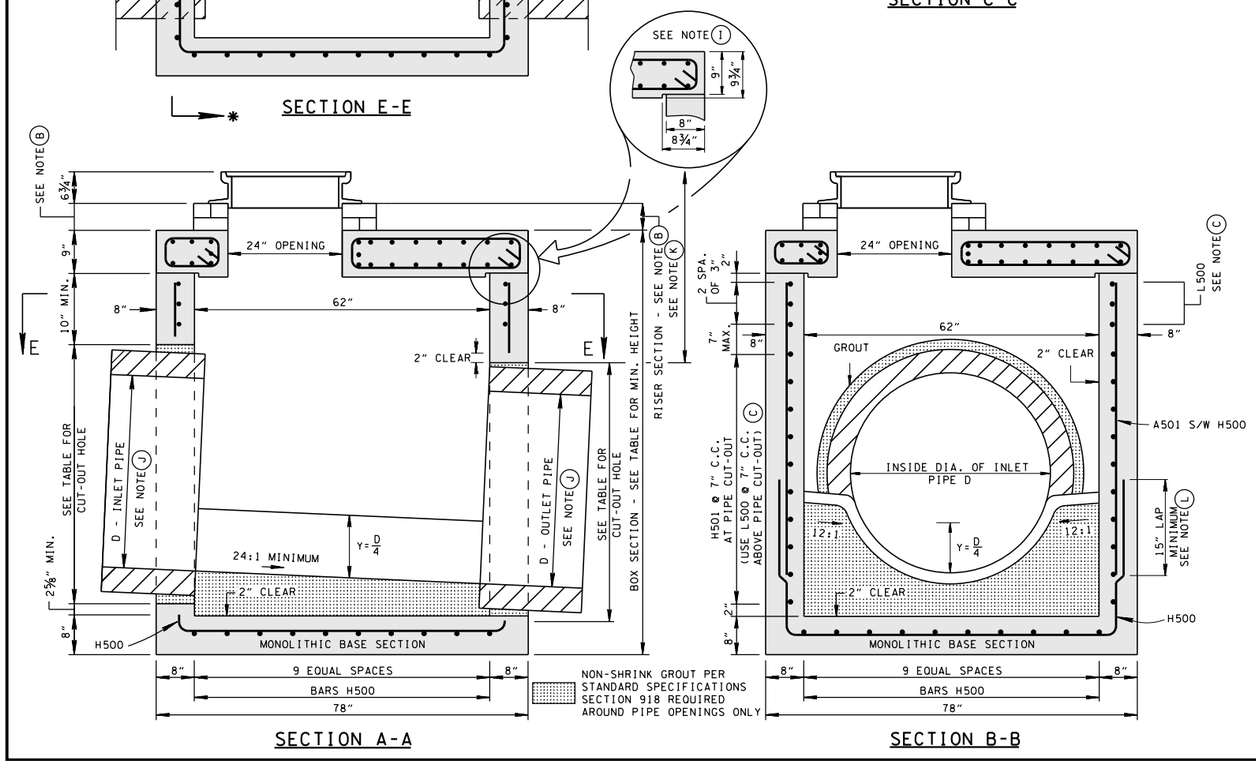
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25¾ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½" OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) SEE STANDARD DRAWING D-MH-4 FOR DETAILS REGARDING CAST IRON COVERS AND FRAMES, AND DETAILS FOR VARIOUS STEPS.

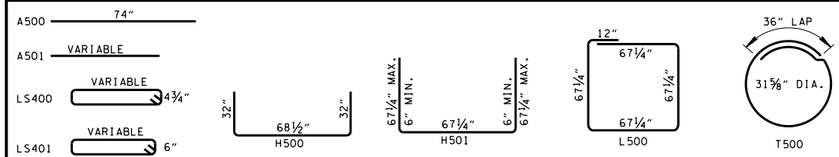
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF MANHOLE LID TO OUTLET FLOW ELEVATION. PAYMENT FOR MANHOLE WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH THROUGH 611-01.07 MANHOLE, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND LID.



SECTION A-A

SECTION B-B

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

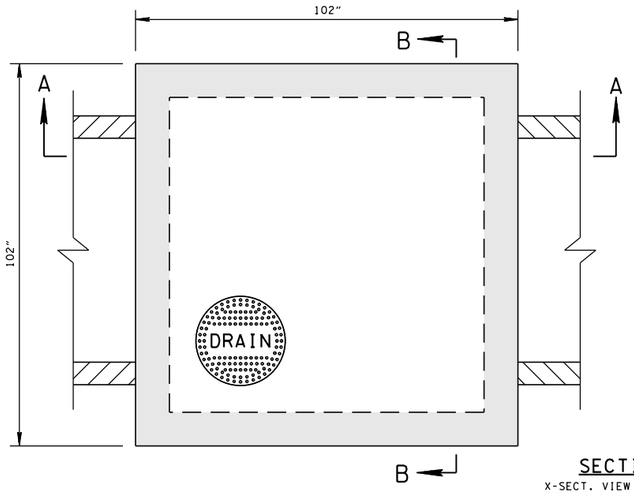
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

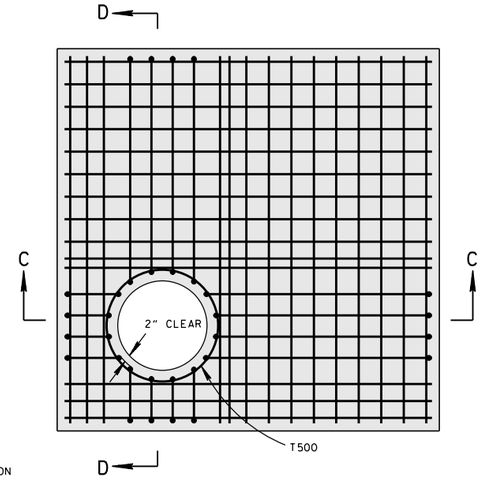
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
5'2" X 5'2" SQUARE
CONCRETE NO.3
MANHOLE

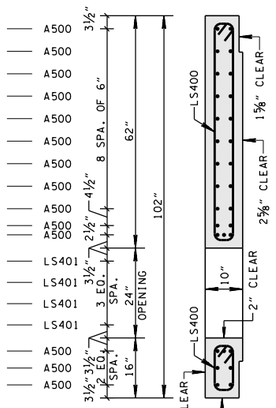
10-26-98 D-MH-5



PLAN VIEW



PLAN VIEW



SECTION D-D

MANHOLE DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	MANHOLE MINIMUM DESIGN DEPTH (FEET)
18	2½	25	57½	4.40
24	3	32	64½	4.94
30	3½	39	71½	5.48
36	4	46	78½	6.02
42	4½	53	85½	6.56
48	5	60	92½	7.10
54	5½	67	99½	7.65
60	6	74	106½	8.19
66	6½	81	113½	8.73

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

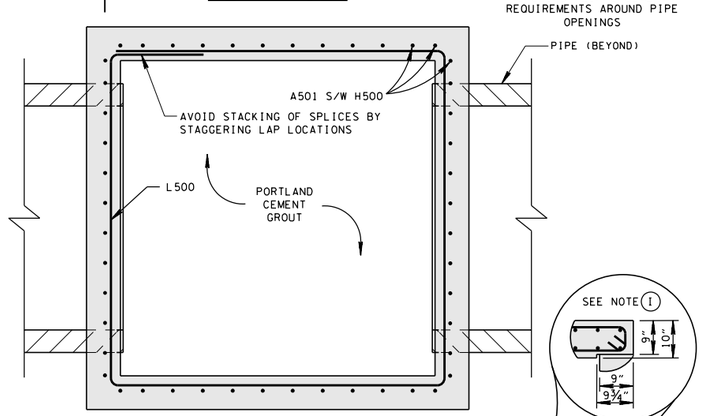
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: CHANGED ITEM NUMBERS IN GENERAL NOTE (I) ADDED MAXIMUM DEPTH NOTE.
- ☐ REV.5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)
- ☐ REV.9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

REV. 8-01-12: REVISED MANHOLE FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

MANHOLE MAXIMUM DEPTH NOTE

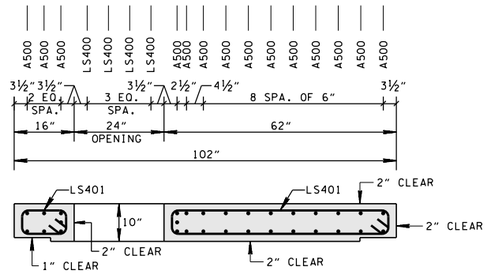
MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.



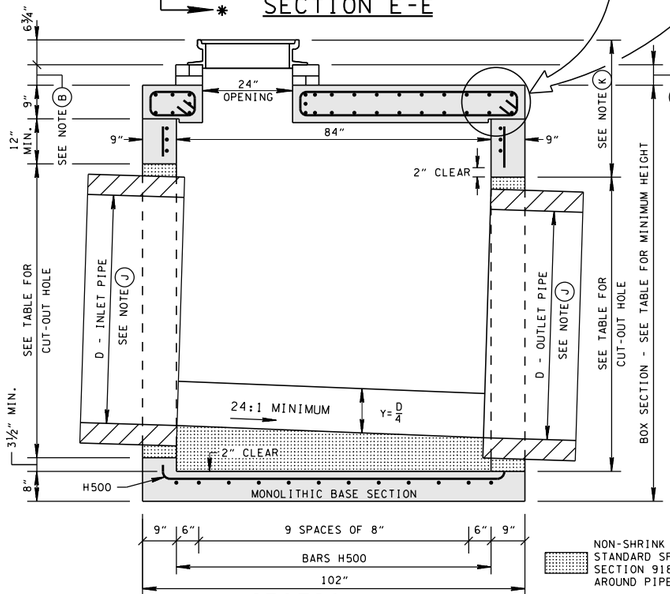
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

PLAN VIEW

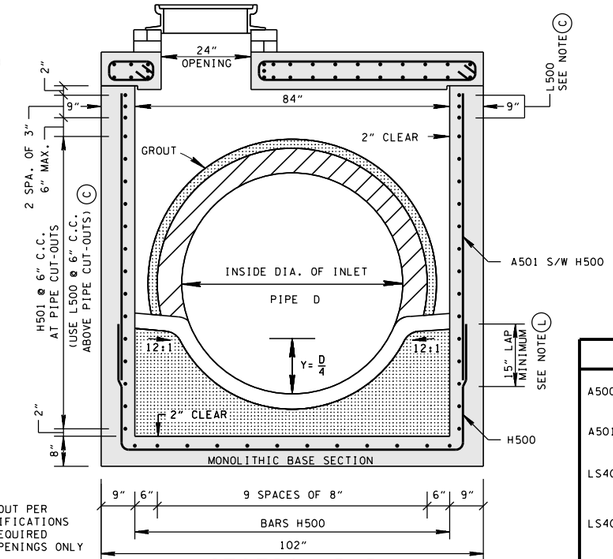


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE 7' X 7' NO. 3 CONCRETE MANHOLES AND ALL PRECAST 7' X 7' NO. 3 CONCRETE MANHOLES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27¾ INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF MANHOLE WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST MANHOLES FOR CAST-IN-PLACE MANHOLES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST MANHOLE UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED MANHOLE UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

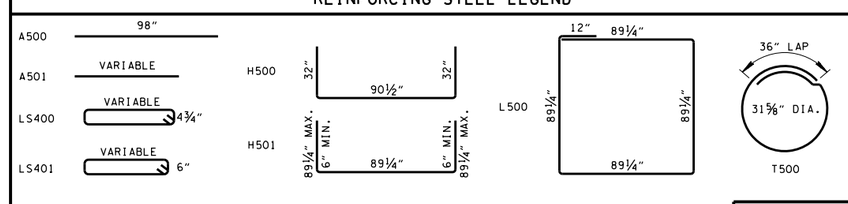
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27¾ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½" OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) SEE STANDARD DRAWING D-MH-4 FOR DETAILS REGARDING CAST IRON COVERS AND FRAMES, AND DETAILS FOR VARIOUS STEPS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF MANHOLE LID TO OUTLET FLOW ELEVATION. PAYMENT FOR MANHOLE WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH THROUGH 611-01.07 MANHOLE, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND MANHOLE LID.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

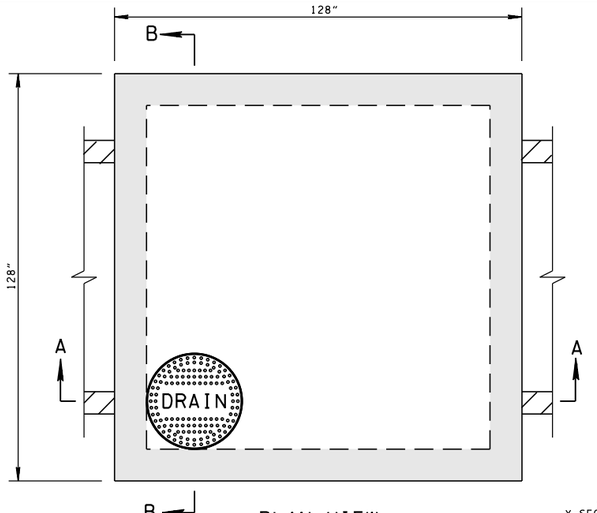
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

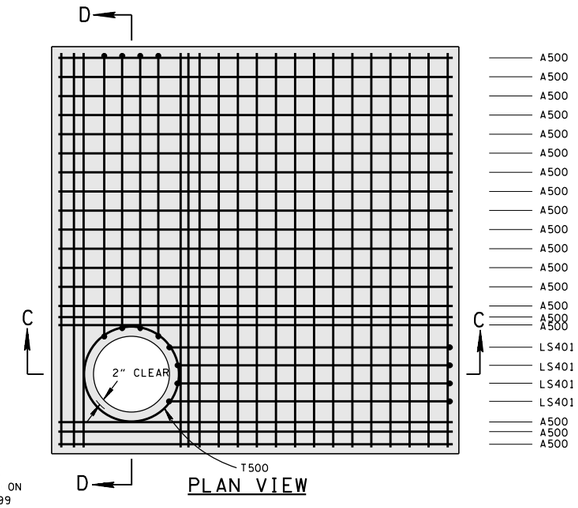
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 7' X 7' SQUARE CONCRETE NO. 3 MANHOLE

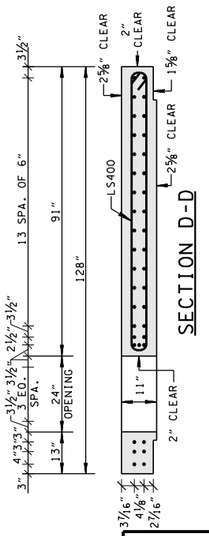
9-5-97 | D-MH-6



PLAN VIEW



PLAN VIEW



SECTION D-D

MANHOLE MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

MANHOLE DIMENSIONS

INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	FOR DESIGN USE ONLY MANHOLE MINIMUM DESIGN DEPTH (FEET)
18	2½	25	59½	4.40
24	3	32	66½	4.94
30	3½	39	73½	5.48
36	4	46	80½	6.02
42	4½	53	87½	6.56
48	5	60	94½	7.10
54	5½	67	101½	7.65
60	6	74	108½	8.19
66	6½	81	115½	8.73
72	7	88	122½	9.27
78	7½	95	129½	9.81

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

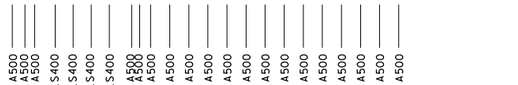
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

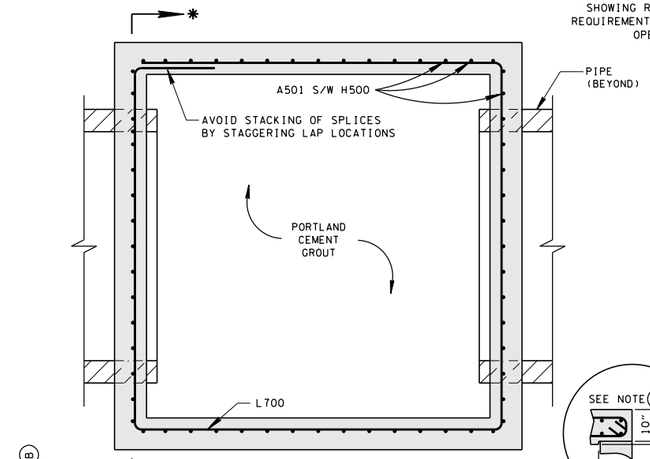
- ☐ REV. 5-27-01: CHANGED ITEM NUMBERS IN GENERAL NOTE (I) ADDED MAXIMUM DEPTH NOTE.
- ☐ REV. 5-30-02: MODIFIED REINFORCING STEEL.
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (B)
- ☐ REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.

REV. 8-01-12: REVISED MANHOLE FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

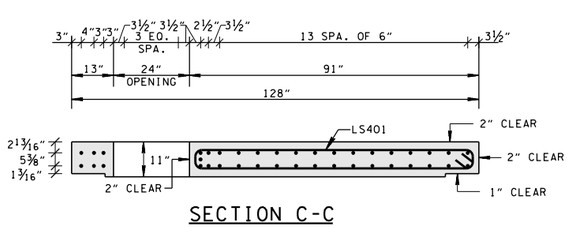
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

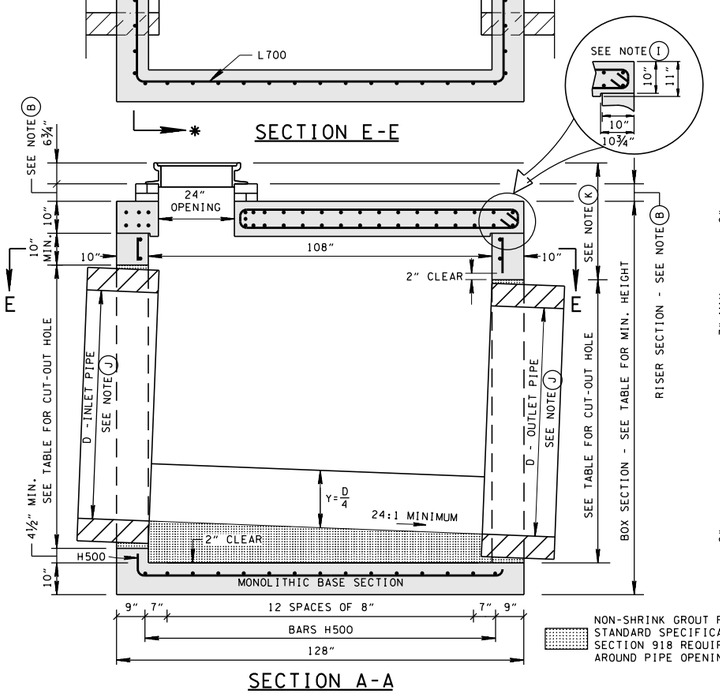




SECTION E-E

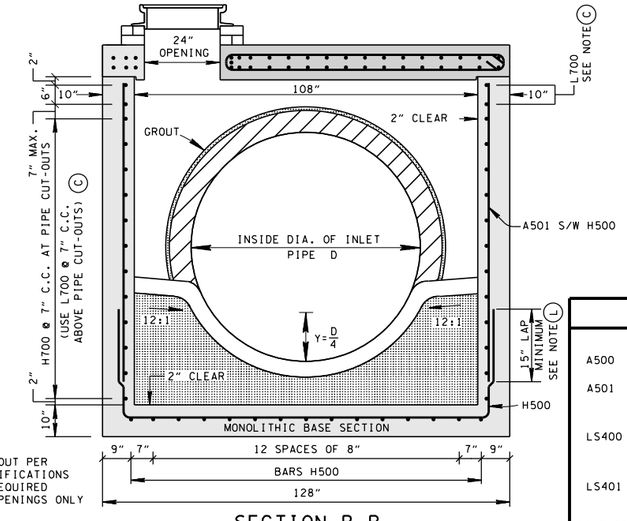


SECTION C-C



SECTION A-A

NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENINGS ONLY



SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE 9' X 9' NO. 3 CONCRETE MANHOLES AND ALL PRECAST 9' X 9' NO. 3 CONCRETE MANHOLES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF 0 INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26¾ INCHES IS SATISFIED. THE CONTRACTOR HAS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE USED AS SHOWN ON STANDARD DRAWING D-RF-1.

(C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF MANHOLE WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

(D) CAST-IN-PLACE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST MANHOLES FOR CAST-IN-PLACE MANHOLES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(F) PRECAST MANHOLE UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED MANHOLE UNITS AT HIS OWN EXPENSE.

(G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

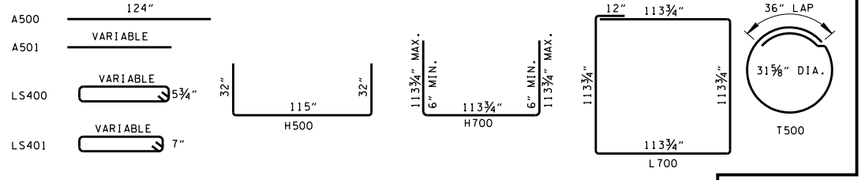
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26¾ INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(M) SEE STANDARD DRAWING D-MH-4 FOR DETAILS REGARDING CAST IRON COVERS AND FRAMES, AND DETAILS FOR VARIOUS STEPS.

(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF MANHOLE LID TO OUTLET FLOW ELEVATION. PAYMENT FOR MANHOLE WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH THROUGH 611-01.07 MANHOLE, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND MANHOLE LID.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

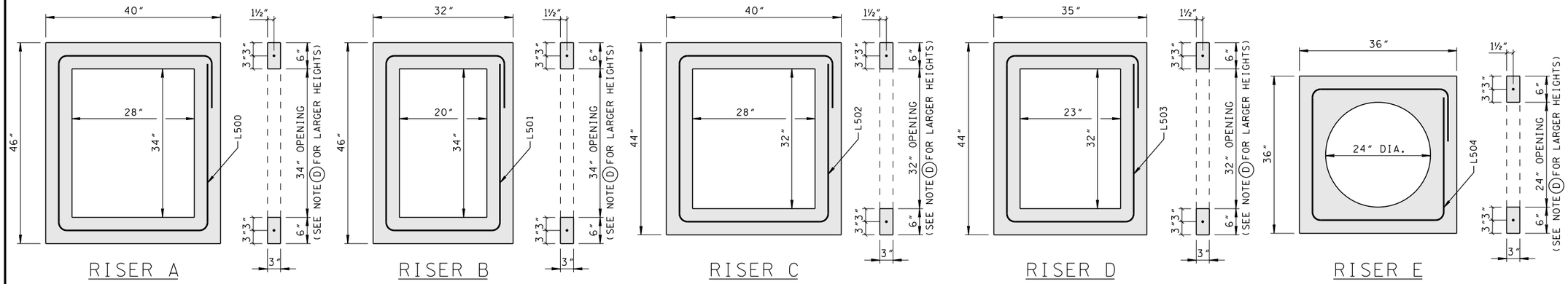
NOT TO SCALE

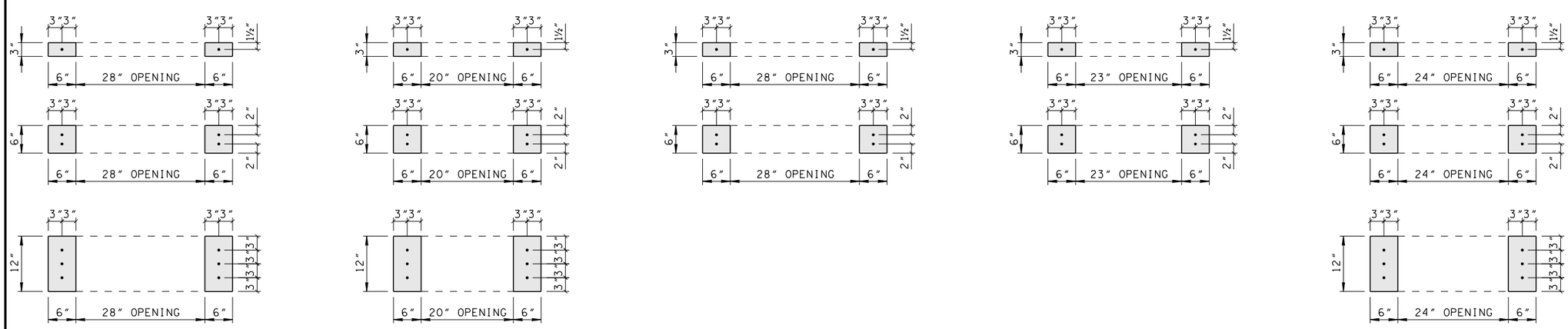
☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 9' X 9' SQUARE CONCRETE NO. 3 MANHOLE

9-5-98 | D-MH-7





RISER A MAY BE USED WITH THE FOLLOWING STANDARD DRAWINGS:

D-CB-12B
D-CB-12P
D-CB-12RA
D-CB-12RB
D-CB-12RC
D-CB-12S
D-CB-12SB
D-CB-12SC
D-CB-12SD
D-CB-12SE
D-CB-13B
D-CB-13P
D-CB-13RA
D-CB-13RB
D-CB-13RC
D-CB-13S
D-CB-14B
D-CB-14P
D-CB-14RB
D-CB-14S
D-CB-14SE
D-CB-16B
D-CB-16S
D-CB-17S
D-CB-25B
D-CB-25P
D-CB-25RA
D-CB-25RB
D-CB-25S
D-CB-25SC
D-CB-25SD
D-CB-25SE
D-CB-25S
D-CB-25SB
D-CB-26P
D-CB-26S
D-CB-27S
D-CB-28B
D-CB-28P
D-CB-28RA
D-CB-28RB
D-CB-28S
D-CB-29P
D-CB-29S
D-CB-31R
D-CB-31SD
D-CB-31SE
D-CB-41P
D-CB-41RB
D-CB-41SC
D-CB-41SD
D-CB-41SE
D-CB-41S
D-CB-41SB
D-CB-46SE
D-CB-51SC
D-CB-51SD
D-CB-51SE
D-CB-52SE

RISER B MAY BE USED WITH THE FOLLOWING STANDARD DRAWINGS:

D-CB-10RA
D-CB-10S
D-CB-10SB

RISER C MAY BE USED WITH THE FOLLOWING STANDARD DRAWINGS:

D-CB-12LP
D-CB-25LP
D-CB-28LP
D-CB-41LP

RISER D MAY BE USED WITH THE FOLLOWING STANDARD DRAWING:

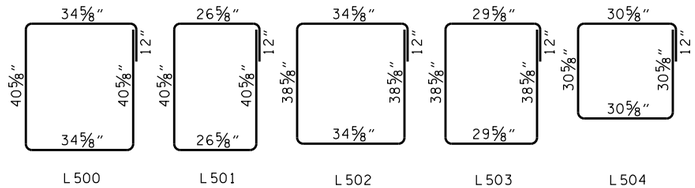
D-CB-10LPC

RISER E MAY BE USED WITH THE FOLLOWING STANDARD DRAWINGS:

D-MH-5
D-MH-6
D-MH-7

NOTE:
CIRCULAR RISER SECTION WITH A 24 INCH INSIDE DIAMETER AND A 30 INCH OUTSIDE DIAMETER WITH T500 DIA. 30⅝ INCHES IS AN ACCEPTABLE ALTERNATE.

REINFORCING STEEL LEGEND



GENERAL NOTES

Ⓐ RISER FRAMES MAY BE USED TO SUBSTITUTE BRICK RISERS AS SHOWN ON STANDARD DRAWINGS. THE REQUIRED ADJUSTMENT HEIGHT MAY BE ACCOMPLISHED BY STACKING TWO RISER FRAMES. GROUT OR CONCRETE SEAL IS REQUIRED BETWEEN STACKED FRAMES.

Ⓑ CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.
MIN. 1″ CONCRETE COVER SHALL BE MAINTAINED DURING MANUFACTURING.

Ⓒ PAYMENT OF PRECAST RISER FRAMES SHALL BE INCLUDED IN THE TOTAL COST OF STRUCTURE.

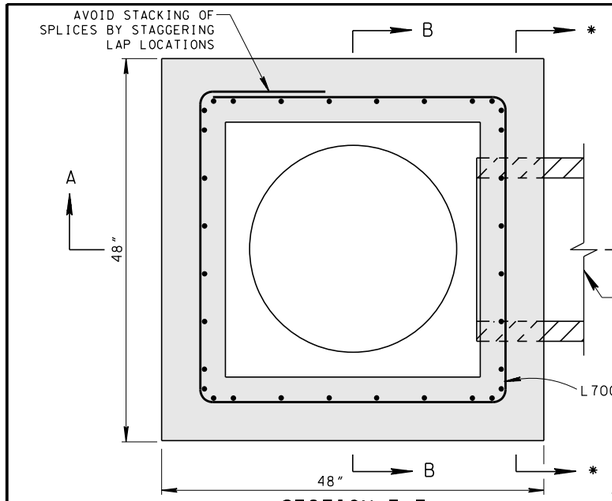
Ⓓ VERTICAL SPACING OF REINFORCING STEEL IS TYPICAL FOR ALL PRECAST RISER HEIGHTS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD PRECAST RISER

8-01-12

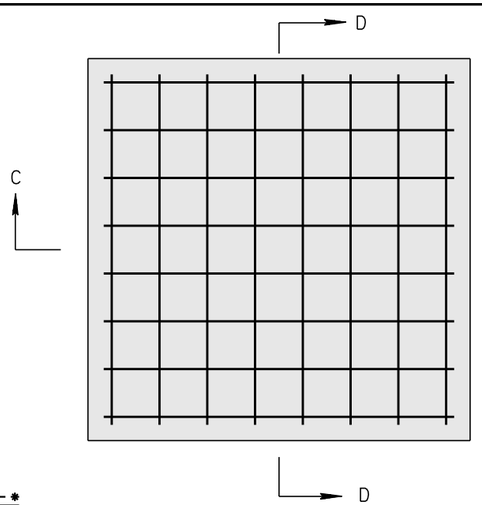
D-RF-1



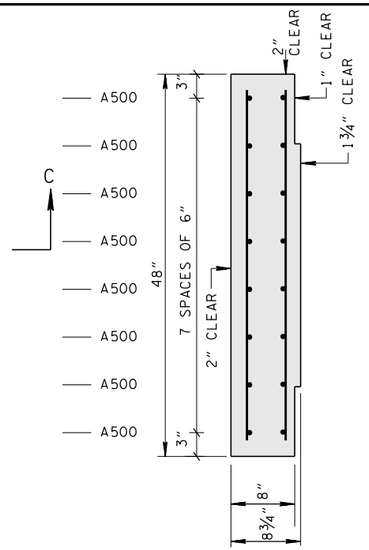
SECTION E-E

SECTION *-*

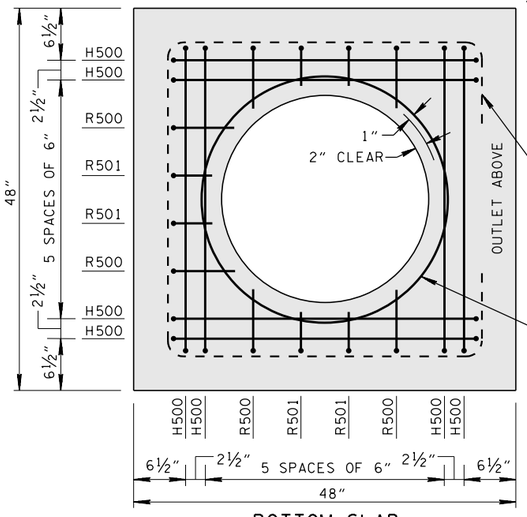
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



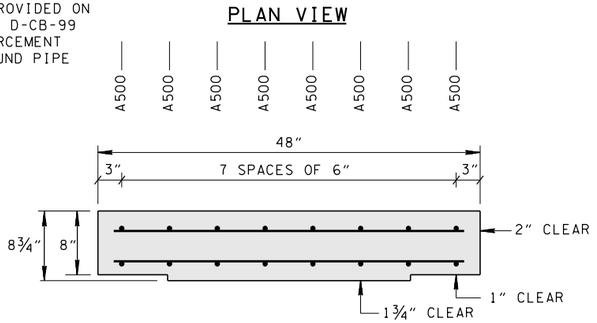
PLAN VIEW



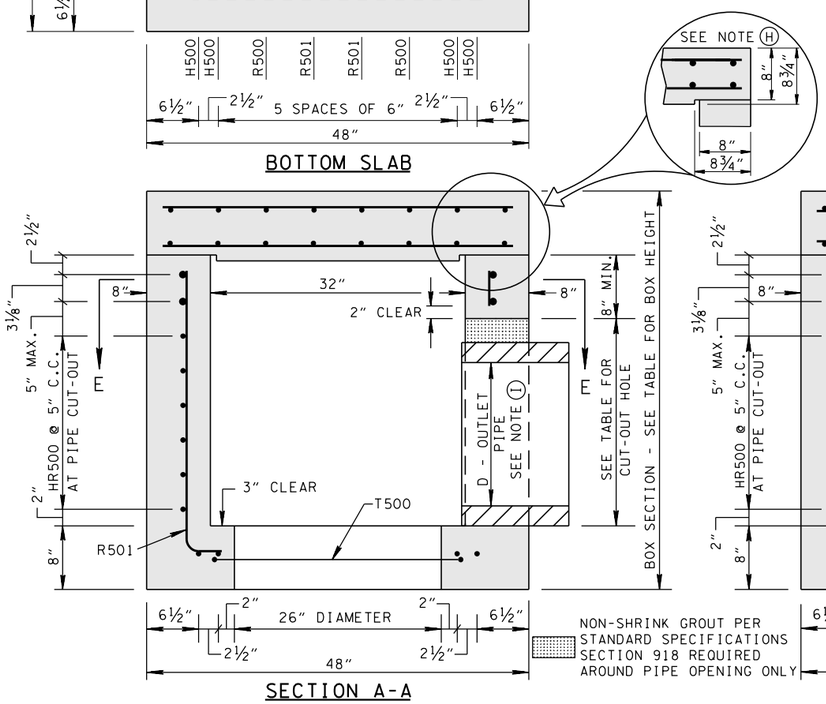
SECTION D-D



BOTTOM SLAB



SECTION C-C



SECTION A-A

SECTION B-B

- ☐ REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (J)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

REV. 8-01-12: REVISED SPRING DRAIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

SPRING DRAIN BOX DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	SPRING DRAIN HEIGHT (INCHES)	SPRING DRAIN MINIMUM DESIGN DEPTH (FEET)
18	2½	25	49	3.13
24	3	32	56	3.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 1 CONCRETE SPRING DRAIN BOXES AND ALL PRECAST NO. 1 CONCRETE SPRING DRAIN BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) CAST-IN-PLACE CONCRETE SPRING DRAIN BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST SPRING DRAIN BOXES FOR CAST-IN-PLACE SPRING DRAIN BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST SPRING DRAIN BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED SPRING DRAIN BOX UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

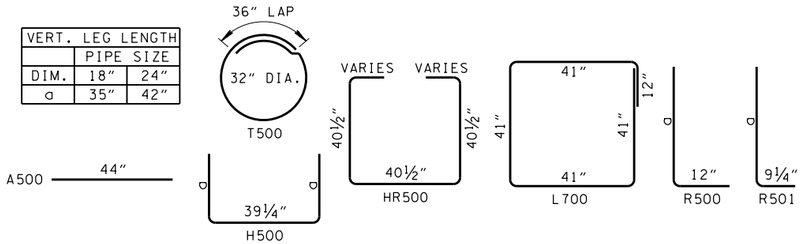
(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE OUTLET PIPES.

(J) PAYMENT FOR SPRING DRAIN BOX WILL BE MADE UNDER ITEM NUMBER 611-02.01 SPRING DRAIN BOX, TYPE 1 PER EACH.

REINFORCING STEEL LEGEND

VERT. LEG LENGTH	PIPE SIZE	
	18″	24″
DIM. a	35″	42″



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

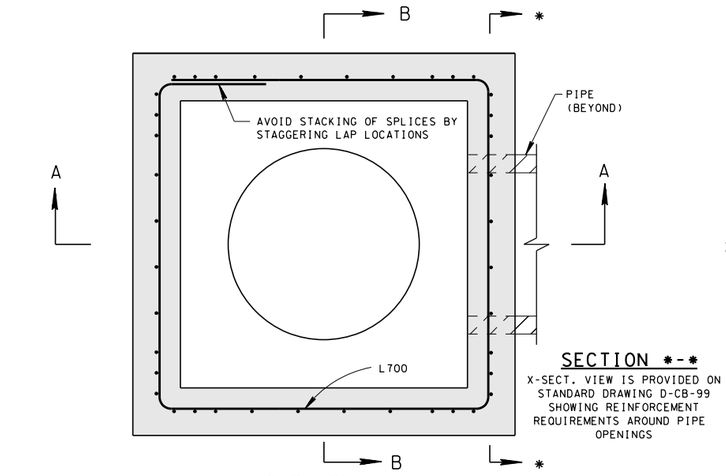
NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
32″ x 32″ SQUARE
CONCRETE NO. 1
SPRING DRAIN BOX

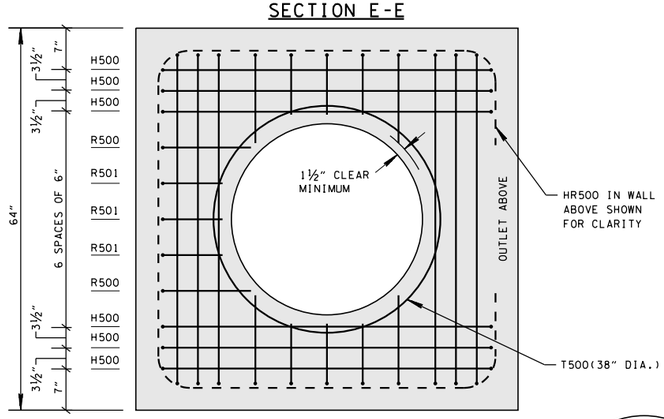
4-15-98 | D-SDS-1

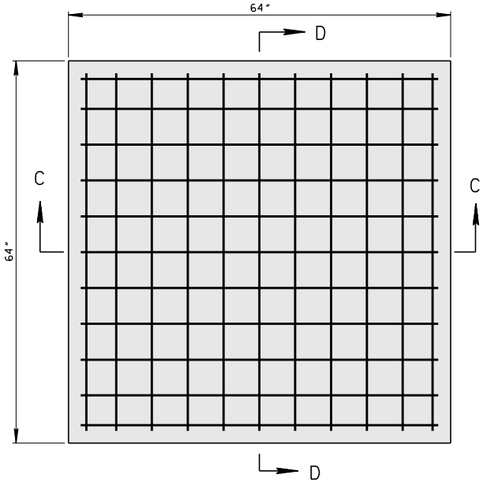


SECTION *-*

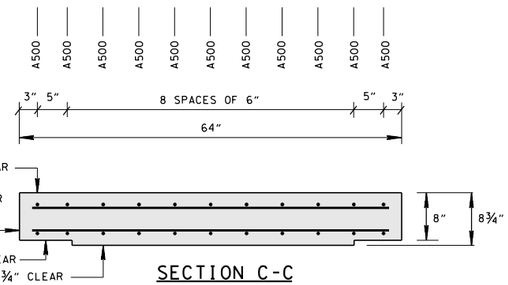
X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

SECTION E-E

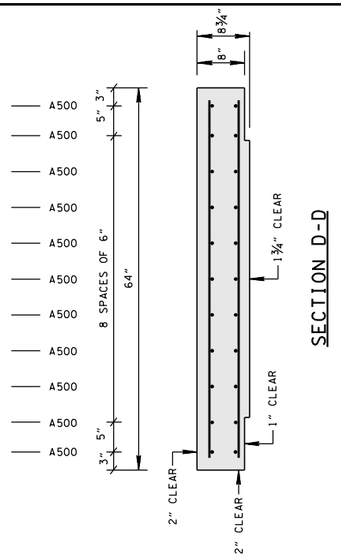




PLAN VIEW



SECTION C-C



SECTION D-D

SPRING DRAIN BOX HEIGHT				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	SPRING DRAIN HEIGHT (INCHES)	SPRING DRAIN MINIMUM DESIGN DEPTH (FEET)
24	3	32	56	3.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

☐ REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (J)

☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

REV. 8-01-12: REVISED SPRING DRAIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 2A CONCRETE SPRING DRAIN BOXES AND ALL PRECAST NO. 2A CONCRETE SPRING DRAIN BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) CAST-IN-PLACE CONCRETE SPRING DRAIN BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST SPRING DRAIN BOXES FOR CAST-IN-PLACE SPRING DRAIN BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST SPRING DRAIN BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED SPRING DRAIN BOX UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

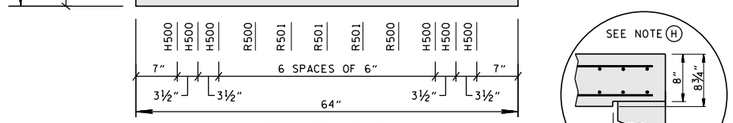
(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE(1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

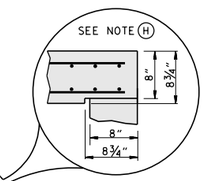
(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE OUTLET PIPES.

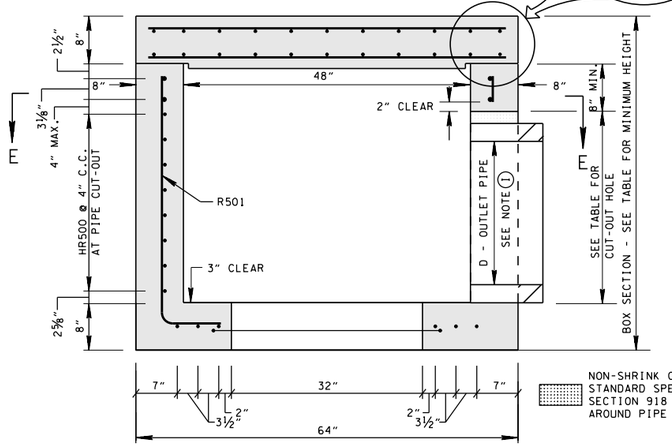
(J) PAYMENT FOR SPRING DRAIN BOX WILL BE MADE UNDER ITEM NUMBER 611-02.02 SPRING DRAIN BOX, TYPE 2A PER EACH.

BOTTOM SLAB



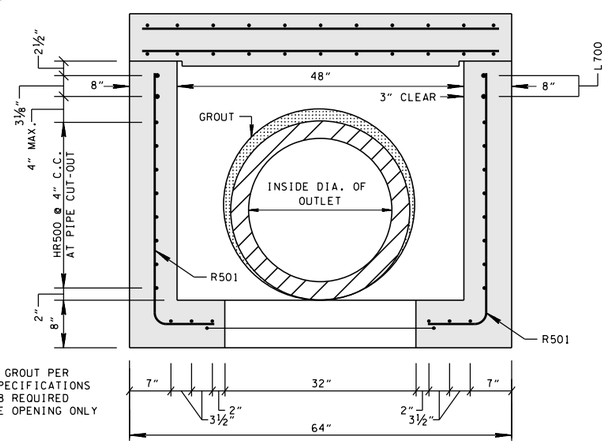


SECTION A-A

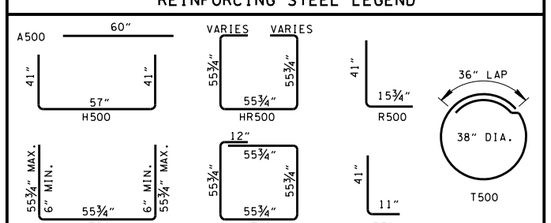


NON-SHRINK GROUT PER STANDARD SPECIFICATIONS SECTION 918 REQUIRED AROUND PIPE OPENING ONLY

SECTION B-B



REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

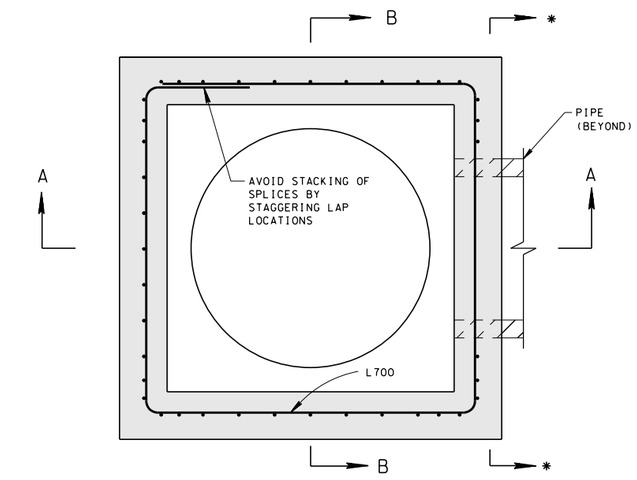
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 2A SPRING DRAIN BOX

NOT TO SCALE

4-15-98

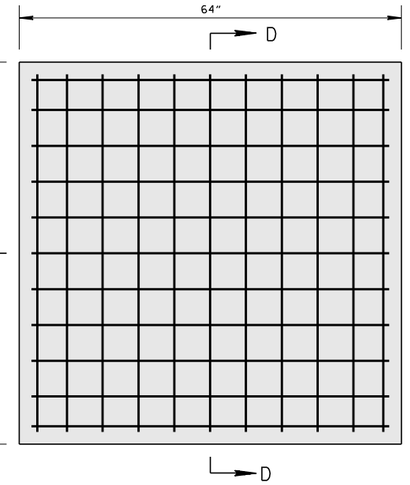
D-SDS-2A



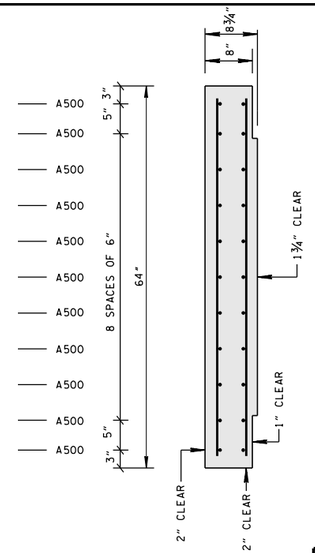
SECTION E-E

SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS



PLAN VIEW



SECTION D-D

SPRING DRAIN BOX HEIGHT				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	SPRING DRAIN HEIGHT (INCHES)	SPRING DRAIN MINIMUM DESIGN DEPTH (FEET)
30	3½	39	63	4.21

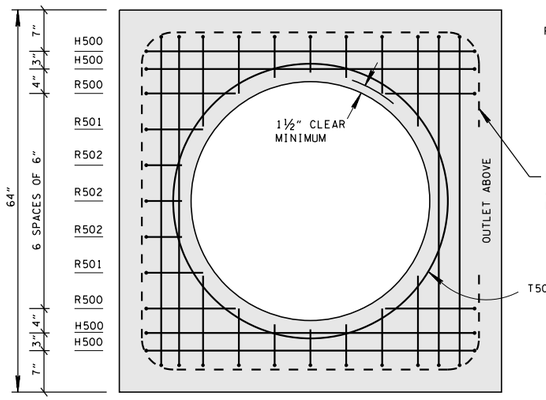
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

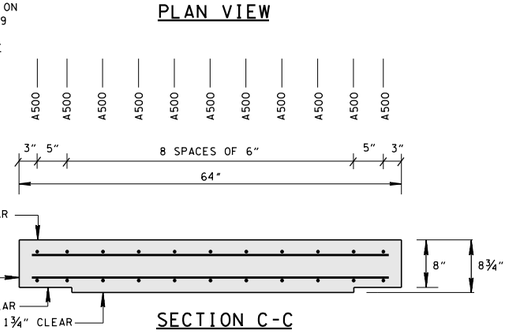
(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

- ☐ REV. 5-27-01: CHANGED PAY ITEMI IN GENERAL NOTE (J)
- ☐ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

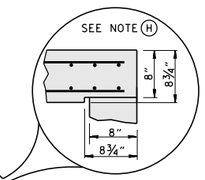
REV. 8-01-12: REVISED SPRING DRAIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

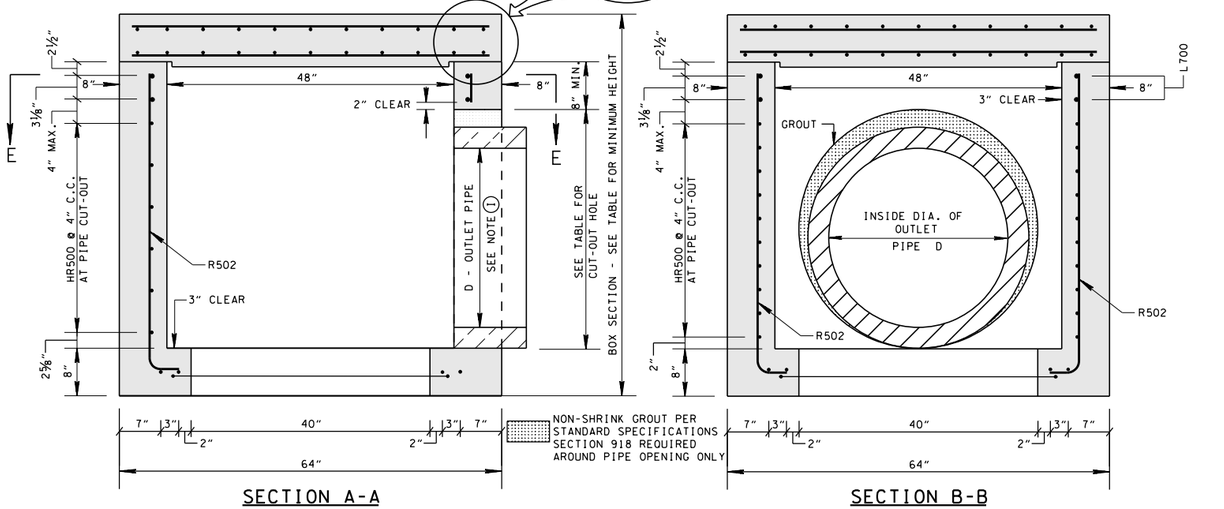


BOTTOM SLAB



SECTION C-C





SECTION A-A

SECTION B-B

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 2B CONCRETE SPRING DRAIN BOXES AND ALL PRECAST NO. 2B CONCRETE SPRING DRAIN BOXES. SEE STANDARD DRAWING D-CB-99 ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) CAST-IN-PLACE CONCRETE SPRING DRAIN BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST SPRING DRAIN BOXES FOR CAST-IN-PLACE SPRING DRAIN BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

(E) PRECAST SPRING DRAIN BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED SPRING DRAIN BOX UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

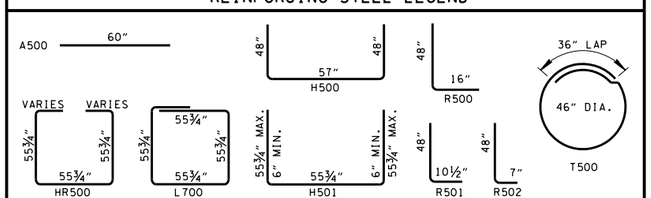
(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE(1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE OUTLET PIPES.

(J) PAYMENT FOR SPRING DRAIN BOX WILL BE MADE UNDER ITEM NUMBER 611-02.03 SPRING DRAIN BOX, TYPE 2B PER EACH.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

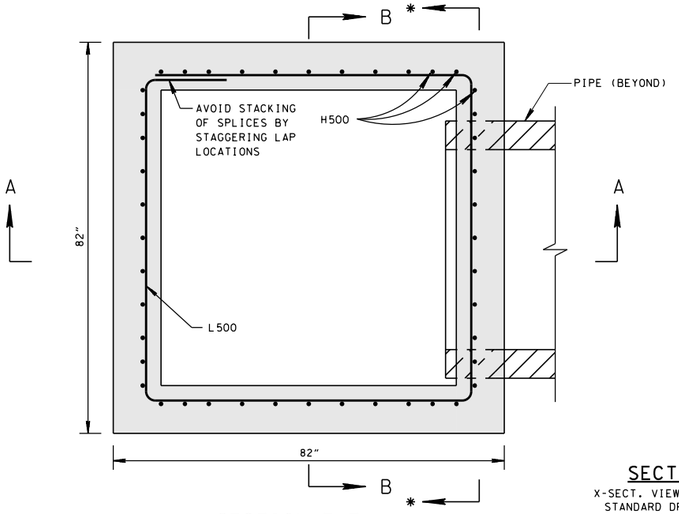
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 4' X 4' SQUARE CONCRETE NO. 2B SPRING DRAIN BOX

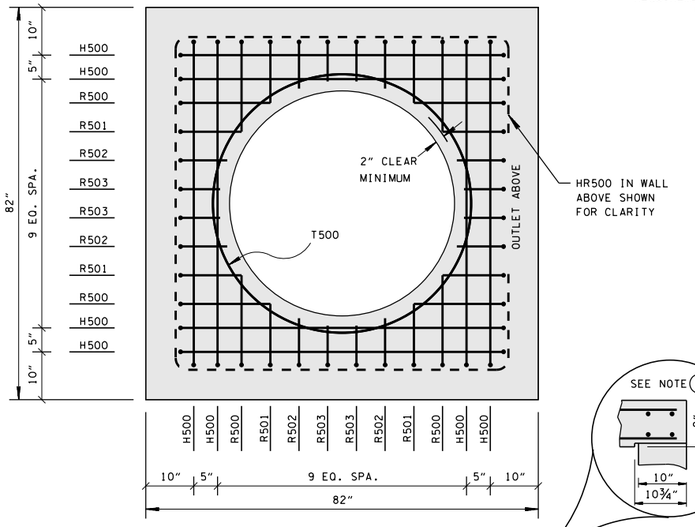
NOT TO SCALE

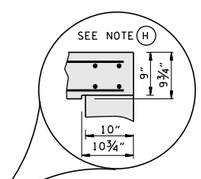
4-15-98

D-SDS-2B

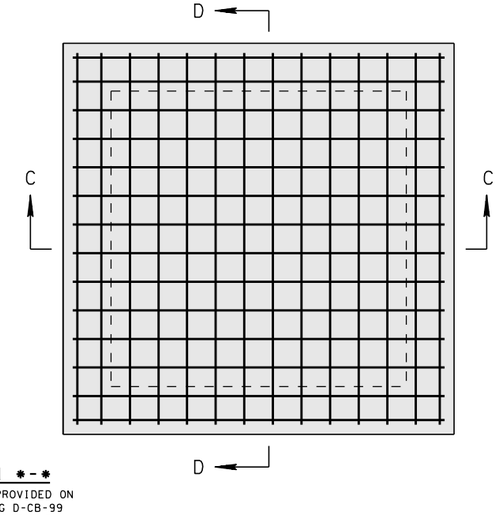


SECTION E-E





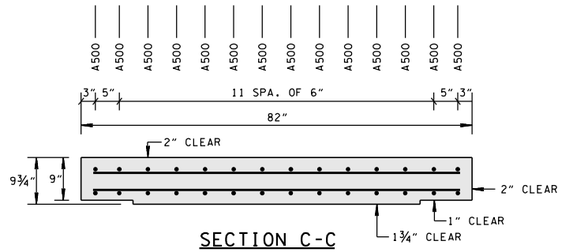
BOTTOM SLAB



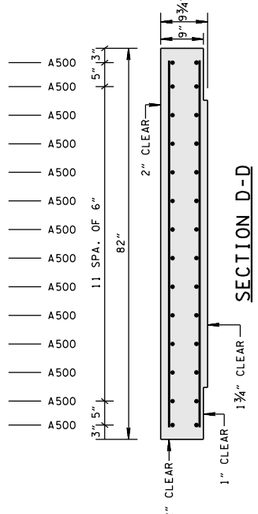
SECTION *-*

X-SECT. VIEW IS PROVIDED ON STANDARD DRAWING D-CB-99 SHOWING REINFORCEMENT REQUIREMENTS AROUND PIPE OPENINGS

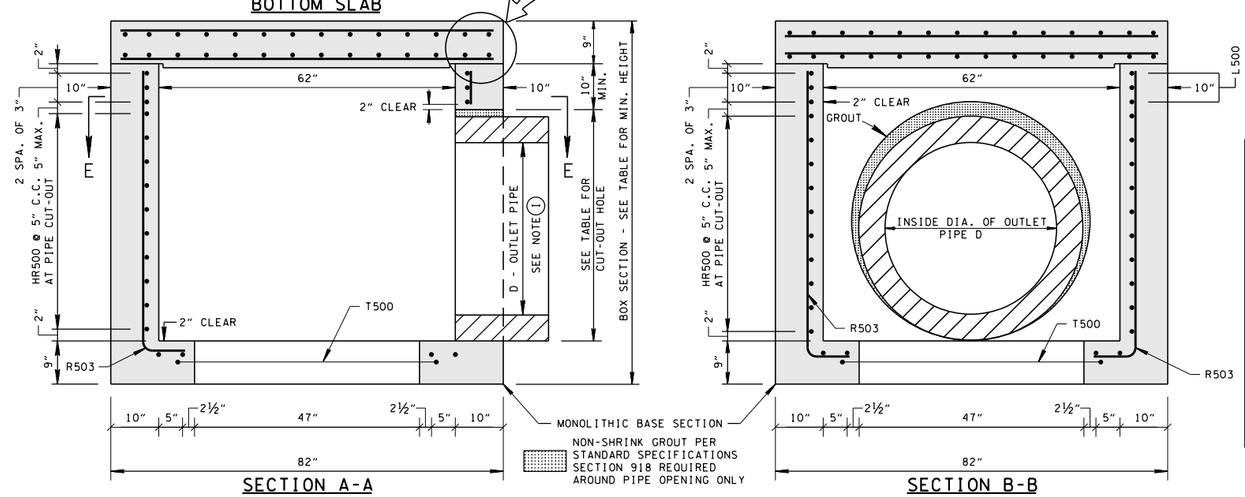
PLAN VIEW



SECTION C-C



SECTION D-D



- REV. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (J)
- REV. 7-29-01: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (D)

REV. 8-01-12: REVISED SPRING DRAIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

SPRING DRAIN DIMENSIONS				FOR DESIGN USE ONLY
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION HEIGHT (INCHES)	SPRING DRAIN MINIMUM DESIGN DEPTH (FEET)
36	4	46	74	5.00

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.

(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

(A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 3A CONCRETE SPRING DRAIN BOXES AND ALL PRECAST NO. 3A CONCRETE SPRING DRAIN BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

(B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.

(C) CAST-IN-PLACE CONCRETE SPRING DRAIN BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH PERMISSION FROM THE ENGINEER SUBSTITUTE PRECAST SPRING DRAIN BOXES FOR CAST-IN-PLACE SPRING DRAIN BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

(D) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

CONCRETE: f'_c = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS
REINFORCING STEEL: ASTM A615, F_y = 60,000 POUNDS PER SQUARE INCH
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(E) PRECAST SPRING DRAIN BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED SPRING DRAIN BOX UNITS AT HIS OWN EXPENSE.

(F) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

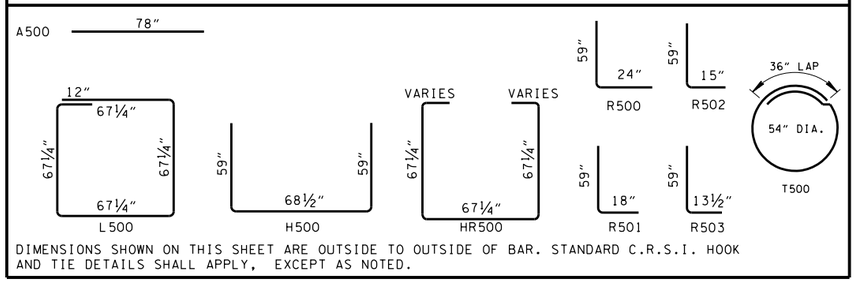
(G) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE(1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

(H) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE OUTLET PIPES.

(J) PAYMENT FOR SPRING DRAIN BOX WILL BE MADE UNDER ITEM NUMBER 611-02.04 SPRING DRAIN BOX, TYPE 3A PER EACH.

REINFORCING STEEL LEGEND



DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOT TO SCALE

☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3A SPRING DRAIN BOX

4-15-98 D-SDS-3A

SECTION V - LIST OF CURRENT STANDARD DRAWINGS

CHAPTER 1 – STANDARD ROADWAY DRAWINGS

ROADWAY DESIGN STANDARD DRAWINGS

ROADWAY DESIGN STANDARDS

DRAINAGE - CULVERTS AND ENDWALL

DRAINAGE - CATCH BASINS AND MANHOLES

DRAINAGE - NATURAL STREAM DESIGN

ROADWAY AND PAVEMENT APPURTENANCES

SAFETY APPURTENANCES AND FENCE

TRAFFIC CONTROL APPURTENANCES

EROSION PREVENTION AND SEDIMENT CONTROL

CHAPTER 2 – STANDARD STRUCTURE DRAWINGS

STRUCTURE DESIGN STANDARD DRAWINGS

BRIDGE APPURTENANCES ENGLISH (NEW STRUCTURES)

BRIDGE APPURTENANCES ENGLISH (BOX CULVERTS)

BRIDGE APPURTENANCES ENGLISH (LRFD BOX CULVERTS)

BRIDGE APPURTENANCES ENGLISH (BRIDGE REPAIRS)

NOTE: New or revised standard drawings will be initially published in an Instructional Bulletin and distributed at: http://www.tdot.state.tn.us/Chief_Engineer/engr_library/design/Std_Drwg_Eng.htm on their effective date. If a project is turned in prior to the effective date of the revision the existing drawing shall use the current drawing. The previous practice of printing new drawings with plans is no longer required.

SECTION V - LIST OF CURRENT STANDARD DRAWINGS

CHAPTER 1 – STANDARD ROADWAY DRAWINGS

ROADWAY DESIGN STANDARD DRAWINGS

ROADWAY DESIGN STANDARDS

RD-A-1	12-18-99	STANDARD ABBREVIATIONS
RD-L-1	10-26-94	STANDARD LEGEND
RD-L-2	09-05-01	STANDARD LEGEND FOR UTILITY INSTALLATIONS
RD-L-3	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-4	04-15-04	STANDARD LEGEND FOR SIGNALIZATION AND LIGHTING
RD-L-5	05-01-08	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-6	03-30-10	STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-7		STANDARD LEGEND FOR EROSION PREVENTION AND SEDIMENT CONTROL
RD-L-8		STANDARD LEGEND FOR NATURAL STREAM DESIGN
RD-S-11	03-31-03	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT
RD-S-11A	03-31-03	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION
RD-SA-1	03-31-03	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION
RD-SE-2	10-26-95	URBAN SUPERELEVATION DETAILS
RD-SE-3	10-26-95	RURAL SUPERELEVATION DETAILS
RD-TS-1	03-31-03	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS
RD-TS-2	03-31-03	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS

RD-TS-2A	03-31-03	DESIGN STANDARDS FOR 4-6 LANE COLLECTOR HIGHWAYS WITH DEPRESSED MEDIANS
RD-TS-2B	03-31-03	DESIGN STANDARDS FOR 4-6 LANE COLLECTOR HIGHWAYS WITH FLUSH MEDIANS
RD-TS-3	03-31-03	DESIGN STANDARDS FOR 2-LANE ARTERIAL HIGHWAYS
RD-TS-3A	03-31-03	DESIGN STANDARDS 4-6 LANE ARTERIAL HIGHWAYS WITH DEPRESSED MEDIANS
RD-TS-3B	03-31-03	DESIGN STANDARDS 4-6 LANE ARTERIALS WITH INDEPENDENT ROADWAYS
RD-TS-3C	03-31-03	DESIGN STANDARDS 4-6 LANE ARTERIAL HIGHWAYS WITH FLUSH MEDIANS
RD-TS-4	03-31-03	DESIGN STANDARDS 1 & 2 LANE RAMPS
RD-TS-5	03-31-03	DESIGN STANDARDS FREEWAYS WITH DEPRESSED MEDIANS
RD-TS-5A	03-31-03	DESIGN STANDARDS FREEWAYS WITH INDEPENDENT ROADWAYS
RD-TS-5B	03-31-03	DESIGN STANDARDS FREEWAYS WITH MEDIAN BARRIER
RD-TS-6	03-31-03	TYPICAL CURB AND GUTTER SECTIONS WITH SHOULDER
RD-TS-6A	03-31-03	TYPICAL CURB AND GUTTER SECTIONS WITHOUT SHOULDER
RD-TS-7	03-31-03	DESIGN STANDARDS 2-LANE HIGHWAY WITH CONTINUOUS 2-WAY LEFT-TURN LANE
RD-TS-7A	03-31-03	DESIGN STANDARDS 2-LANE CURB & GUTTER WITH CONTINUOUS 2-WAY LEFT-TURN LANE
RD-TS-8		SHARED USE PATH TYPICAL SECTIONS
RD-TS-9	02-01-12	DESIGN STANDARDS FOR SINGLE LANE URBAN AND RURAL ROUNDABOUTS
RD-TS-10	02-01-12	DESIGN STANDARDS FOR MULTI-LANE URBAN AND RURAL ROUNDABOUTS
RD-UD-3	09-05-96	UNDERDRAIN DETAILS
RD-UD-4	05-27-01	UNDERDRAIN LATERAL DETAILS

RD-UD-6	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 1:1 & 2:1 SLOPES
RD-UD-7	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 3:1 & 4:1 SLOPES
RD-UD-8		LATERAL UNDERDRAIN ENDWALL DETAIL FOR 5:1 SLOPES
RD-UD-9	12-18-94	LATERAL UNDERDRAIN ENDWALL DETAIL FOR 6:1 SLOPES
RD01-S-11	04-04-03	DESIGN AND CONSTRUCTION DETAILS FOR ROADSIDE SLOPE DEVELOPMENT
RD01-S-11A	10-15-02	ROADSIDE DITCH DETAILS FOR DESIGN AND CONSTRUCTION
RD01-S-11B	10-15-02	DESIGN AND CONSTRUCTION DETAILS FOR ROCK CUT SLOPE AND CATCHMENT
RD01-S-12	08-01-09	CLEAR ZONE CRITERIA
RD01-SA-1	10-15-02	SAFETY APPROACH TO UNDERPASSES GRADING DESIGN AND SLOPE PROTECTION
RD01-SD-1		INTERSECTION SIGHT DISTANCE DESIGN AND GENERAL NOTES
RD01-SD-2		INTERSECTION SIGHT DISTANCE LANDSCAPE AND OBSTRUCTION
RD01-SD-3		INTERSECTION SIGHT DISTANCE 2-LANE ROADWAYS
RD01-SD-4		INTERSECTION SIGHT DISTANCE 5-LANE AND 4-LANE UNDIVIDED ROADWAYS
RD01-SD-5		INTERSECTION SIGHT DISTANCE 4-LANE DIVIDED HIGHWAYS
RD01-SD-6		INTERSECTION SIGHT DISTANCE 6-LANE DIVIDED HIGHWAYS
RD01-SD-7		INTERSECTION SIGHT DISTANCE FOR PASSIVE RAILROAD HIGHWAY GRADE CROSSINGS
RD01-SE-2	10-15-02	URBAN SUPERELEVATION DETAILS
RD01-SE-3	10-15-02	RURAL SUPERELEVATION DETAILS
RD01-TS-1	10-15-02	DESIGN STANDARDS FOR LOCAL ROADS AND STREETS

RD01-TS-1A		DESIGN STANDARDS FOR LOW-VOLUME LOCAL ROADS (ADT<=400)
RD01-TS-2	10-15-02	DESIGN STANDARDS FOR COLLECTOR ROADS AND STREETS
RD01-TS-2A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH DEPRESSED MEDIANS
RD01-TS-2B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE COLLECTOR HIGHWAYS WITH FLUSH MEDIANS
RD01-TS-3	10-15-02	DESIGN STANDARD FOR 2-LANE ARTERIAL HIGHWAYS
RD01-TS-3A	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH DEPRESSED MEDIANS
RD01-TS-3B	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIALS WITH INDEPENDENT ROADWAYS
RD01-TS-3C	10-15-02	DESIGN STANDARDS 4 AND 6 LANE ARTERIAL HIGHWAYS WITH FLUSH MEDIANS
RD01-TS-4	10-15-02	DESIGN STANDARDS 1 AND 2 LANE RAMPS
RD01-TS-5	10-15-02	DESIGN STANDARDS FREEWAYS WITH DEPRESSED MEDIANS
RD01-TS-5A	10-15-02	DESIGN STANDARDS FREEWAYS WITH INDEPENDENT ROADWAYS
RD01-TS-5B	10-15-02	DESIGN STANDARDS FREEWAYS WITH MEDIAN BARRIER
RD01-TS-6	10-15-02	TYPICAL CURB AND GUTTER SECTIONS WITH SHOULDER
RD01-TS-6A	01-24-12	TYPICAL CURB AND GUTTER SECTIONS WITHOUT SHOULDER
RD01-TS-7	10-15-02	DESIGN STANDARDS 2-LANE HIGHWAY WITH CONTINUOUS 2-WAY LEFT-TURN LANE
RD01-TS-7A	10-15-02	DESIGN STANDARDS 2-LANE CURB AND GUTTER WITH CONTINUOUS 2-WAY LEFT-TURN LANE

DRAINAGE - CULVERTS AND ENDWALL

D-FLU-1		FLUME DETAILS
D-PB-1	04-15-07	STANDARD DETAILS, CLASS "B" BEDDING AND CULVERT EXCAVATION

D-PB-2	02-01-12	STANDARD DETAILS FOR PLASTIC PIPE INSTALLATION
D-PE-1	02-12-76	TYPE “A” CONCRETE ENDWALL (2:1 SLOPE. 36” TO 78”)
D-PE-3B(1)	07-17-07	CONCRETE ENDWALL TYPE “U” WITH STEEL PIPE GRATE (FOR 18” THRU 48” PIPE) (3:1 SLOPE)
D-PE-3B(2)	05-27-01	CONCRETE ENDWALL TYPE ”U” WITH STEEL PIPE GRATE (FOR 18” THRU 48” PIPE) (3:1 SLOPE)
D-PE-4	07-19-10	STRAIGHT “L” AND “U’ TYPE CONCRETE ENDWALL
D-PE-4B(1)	03-30-00	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) (4:1 SLOPE)
D-PE-4B(2)	07-17-07	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) (4:1 SLOPE)
D-PE-5	05-27-01	WINGWALLS HORIZONTAL OVAL CONCRETE PIPES
D-PE-6	05-27-01	STRAIGHT ENDWALLS VERTICAL OVAL CONCRETE PIPES
D-PE-6A	05-27-01	WINGWALLS VERTICAL OVAL CONCRETE PIPES
D-PE-6B(1)	03-30-00	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) (6:1 SLOPE)
D-PE-6B(2)	07-19-10	CONCRETE ENDWALL TYPE "U" WITH STEEL PIPE GRATE (FOR 18" THRU 48" PIPES) (6:1 SLOPE)
D-PE-7	05-27-01	STRAIGHT ENDWALLS FLATBASE CONCRETE PIPES
D-PE-7A	05-27-01	WINGWALLS FLATBASE CONCRETE PIPES
D-PE-8	01-19-97	DETAIL OF STANDARD PIPE AND PIPE-ARCH CULVERT WITH BEVELED ENDS AND RIP-RAP
D-PE-9	04-25-90	CONCRETE ENDWALLS TYPE "B" (FOR ROUND & SIDE TAPERED INLETS, PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 AND 4:1 SLOPES) 1976
D-PE-9A	10-25-82	GENERAL DIMENSIONS QUANTITIES, ROUND PIPE CONCRETE ENDWALLS TYPE “B” (PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 AND 4:1 SLOPES) 1976
D-PE-9B		GENERAL DIMENSIONS AND QUANTITIES, SIDE TAPER INLETS, CONCRETE ENDWALLS TYPE “B” (PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 AND 4:1 SLOPES) 1976

D-PE-9C	BILL OF STEEL (SHEET 1 OF 4) CONCRETE ENDWALLS TYPE “B” (FOR CONCRETE ROUND AND SIDE TAPERED INLET, PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 SLOPE) 1976
D-PE-9D	BILL OF STEEL (SHEET 2 OF 4) CONCRETE ENDWALLS TYPE “B” (FOR CONCRETE ROUND AND SIDE TAPERED INLET, PIPE SIZES 15" TO 78", ALL SKEWS, 4:1 SLOPE) 1976
D-PE-9E	BILL OF STEEL (SHEET 3 OF 4) CONCRETE ENDWALLS TYPE “B” (FOR STEEL ROUND AND SIDE TAPERED INLET, PIPE SIZES 15" TO 78", ALL SKEWS, 2:1 SLOPE) 1976
D-PE-9F	BILL OF STEEL (SHEET 4 OF 4) CONCRETE ENDWALLS TYPE “B” (FOR STEEL ROUND AND SIDE TAPERED INLET, PIPE SIZES 15" TO 78", ALL SKEWS, 4:1 SLOPE) 1976
D-PE-15A	15” CONCRETE ENDWALL CROSS DRAIN
D-PE-15B	15” CONCRETE ENDWALL CROSS DRAIN
D-PE-18A	18” CONCRETE ENDWALL CROSS DRAIN
D-PE-18B	18” CONCRETE ENDWALL CROSS DRAIN
D-PE-24A	24” CONCRETE ENDWALL CROSS DRAIN
D-PE-24B	24” CONCRETE ENDWALL CROSS DRAIN
D-PE-30A	30” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-30B	30” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-36A	36” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-36B	36” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-42A	42” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-42B	42” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-48A	48” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE

D-PE-48B		48” CONCRETE ENDWALL CROSS DRAIN WITH STEEL PIPE GRATE
D-PE-99		PIPE GRATE & SKEWED CONNECTION DETAILS FOR “U” ENDWALLS
D-PG-3	04-15-97	FERROUS AND ALUMINUM CORRUGATED METAL PIPE
D-PG-4	07-29-94	FERROUS AND ALUMINUM CORR. METAL PIPE-ARCHES
D-PO-1	05-27-01	OVAL & FLAT BASE CONCRETE CULVERT PIPE
D-PS-1	03-15-76	STRUTTING DETAILS FOR CORRUGATED METAL & STRUCTURAL PLATE ROUND PIPE
D-SEW-1A		SIDE DRAIN CONCRETE ENDWALL WITH STEEL PIPE GRATE
D-SEW-6DA	07-19-10	CONCRETE ENDWALL TYPE "SD" WITH STEEL PIPE GRATE (FOR 15" THRU 48" PIPES) (6:1 SLOPE)
D-SEW-6DB	10-26-92	CONCRETE ENDWALL TYPE "SD" WITH STEEL PIPE GRATE (FOR 15" THRU 48" PIPES) (6:1 SLOPE)
D-SEW-6DC	07-19-10	CONCRETE ENDWALL TYPE "SD" WITH STEEL PIPE GRATE (FOR 18" THRU 30" PIPES) (6:1 SLOPE)
D-SEW-6DD	04-15-05	CONCRETE ENDWALL TYPE "SD" WITH STEEL PIPE GRATE (FOR 18" THRU 30" PIPES) (6:1 SLOPE)
D-SEW-12D	04-20-12	CONCRETE ENDWALL TYPE “SD” WITH STEEL PIPE GRATE (FOR 15” AND 18” PIPES) (12:1 SLOPE)

DRAINAGE - CATCH BASINS AND MANHOLES

D-CB-10LPC	08-01-12	LOW PROFILE LOWERED CURB 32" X 26" RECTANGULAR CONCRETE NO. 10LPC CATCH BASIN
D-CB-10RA	08-01-12	STANDARD PRECAST 48" CIRCULAR NO. 10 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-10S	08-01-12	STANDARD RECTANGULAR CONCRETE N0. 10 CATCH BASIN
D-CB-10SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 10 CATCH BASIN
D-CB-12B	08-01-12	STANDARD RECTANGULAR BRICK NO. 12 CATCH BASIN
D-CB-12LP	08-01-12	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 12LP CATCH BASIN

D-CB-12P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO.12 CATCH BASIN
D-CB-12RA	08-01-12	STANDARD PRECAST 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RB	08-01-12	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RC	08-01-12	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-13B	08-01-12	STANDARD RECTANGULAR BRICK NO. 13 CATCH BASIN
D-CB-13P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-13RA	08-01-12	STANDARD PRECAST 48" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13RB	08-01-12	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13RC	08-01-12	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-14B	08-01-12	STANDARD RECTANGULAR BRICK NO. 14 CATCH BASIN
D-CB-14P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 14 CATCH BASIN
D-CB-14RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN
D-CB-14S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 14 CATCH BASIN

D-CB-14SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 14 CATCH BASIN
D-CB-16B	08-01-12	STANDARD RECTANGULAR BRICK NO. 16 CATCH BASIN
D-CB-16S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 16 CATCH BASIN
D-CB-17S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 17 CATCH BASIN
D-CB-25B	08-01-12	STANDARD RECTANGULAR BRICK NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25LP	08-01-12	STANDARD LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 25LP CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25RA	08-01-12	STANDARD PRECAST 48" CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-26P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 26 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-26S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 26 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-27S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 27 CATCH

		BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-28B	08-01-12	STANDARD RECTANGULAR BRICK NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28LP	08-01-12	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 28LP CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28RA	08-01-12	STANDARD PRECAST 48" CIRCULAR NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-29P	08-01-12	STANDARD PRECAST RECTANGULAR CONCRETE NO. 29 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-29S	08-01-12	STANDARD RECTANGULAR CONCRETE NO. 29 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-31R	08-01-12	STANDARD PRECAST CIRCULAR NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-32LP	08-01-12	STANDARD 80” X 32” RECTANGULAR CONCRETE NO. 32 CATCH BASIN (FOR USE UNDER CONCRETE MEDIUM BARRIER WALL)
D-CB-38RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN
D-CB-38S	08-01-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-39RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 39 CATCH BASIN

D-CB-39S	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-40S	08-01-12	STANDARD 4' X 8' RECTANGULAR CONCRETE NO. 40 CATCH BASIN
D-CB-40SE	08-01-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 40. CATCH BASIN
D-CB-41LP	08-01-12	LOW PROFILE 32" X 32" SQUARE CONCRETE NO. 41LP CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41P	08-01-12	STANDARD 4' X 3' PRECAST RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41S	08-01-12	STANDARD 4' X 3' RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-42RB	08-01-12	STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN
D-CB-42S	08-01-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SB	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 42 CATCH BASIN

D-CB-42SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-42SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 42 CATCH BASIN
D-CB-43R	08-01-12	STANDARD PRECAST CIRCULAR NO. 43R CATCH BASIN
D-CB-43SB	08-01-12	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 43SB CATCH BASIN
D-CB-43SC	08-01-12	STANDARD 8' X 5'2" RECTANGULAR CONCRETE NO. 43SC CATCH BASIN
D-CB-44SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 44 CATCH BASIN
D-CB-45S	08-01-12	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 45 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-46SE	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 46 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-51SC	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SD	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 51 CATCH BASIN FOR USE IN FRONT OF CONCRETE RETAINING WALL)
D-CB-51SE	08-01-12	STANDARD 9’ X 9’ SQUARE CONCRETE NO. 51 CATCH BASIN
D-CB-52SE	08-01-12	STANDARD 9’ x 9’ SQUARE CONCRETE NO. 52 CATCH BASIN
D-CB-99		MISCELLANEOUS DETAILS FOR RECTANGULAR STRUCTURES
D-CB-99R		MISCELLANEOUS DETAILS FOR ROUND STRUCTURES
D-CBB-12A	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & NONMOUNTABLE INLET DETAILS FOR NOS. 10, 12, 14, 16, AND 17 TYPE CATCH BASINS
D-CBB-12B	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & 6" MOUNTABLE INLET DETAILS FOR NOS. 25, 26 AND 27 TYPE CATCH BASINS
D-CBB-12C	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & 4" MOUNTABLE INLET DETAILS FOR NOS. 28 AND 29 TYPE CATCH BASINS
D-CBB-13	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & NONMOUNTABLE

		INLET DETAILS FOR NO. 13 TYPE CATCH BASINS
D-CBB-31	05-27-01	TYPE "B" CAST IRON FRAME, GRATE & INLET DETAILS FOR NOS. 31, 41, 45, 46, & 51 TYPE CATCH BASINS
D-CBB-42	05-27-01	CAST IRON GRATE DETAILS FOR NOS. 42, 43 & 44 TYPE CATCH BASINS
D-JBS-1	08-01-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 JUNCTION BOX
D-JBS-2	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2 JUNCTION BOX
D-JBS-3	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 JUNCTION BOX
D-JBS-4	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 4 JUNCTION BOX
D-JBS-5	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 5 JUNCTION BOX
D-MH-2	08-01-12	STANDARD MASONRY & PRECAST NO. 3 MANHOLE
D-MH-3	08-01-12	STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE
D-MH-3A	08-01-12	STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE (96" AND 108” DIA.)
D-MH-3B		STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE (120’ DIA)
D-MH-4	08-01-12	STANDARD NO. 3 MANHOLE CASTINGS AND STEPS
D-MH-5	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 MANHOLE
D-MH-6	08-01-12	STANDARD 7' X 7' SQUARE CONCRETE NO. 3 MANHOLE
D-MH-7	08-01-12	STANDARD 9' X 9' SQUARE CONCRETE NO. 3 MANHOLE
D-RF-1		STANDARD PRECAST RISER
D-SDS-1	08-01-12	STANDARD 32" X 32" SQUARE CONCRETE NO. 1 SPRING DRAIN BOX
D-SDS-2A	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2A SPRING DRAIN BOX

D-SDS-2B	08-01-12	STANDARD 4' X 4' SQUARE CONCRETE NO. 2B SPRING DRAIN BOX
D-SDS-3A	08-01-12	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3A SPRING DRAIN BOX
D-SLD-1	05-27-01	SLOTTED DRAINS
D-SLD-2	05-27-01	SLOTTED DRAINS
D-SLD-3	05-27-01	SLOTTED DRAINS
D-TD-1		TRENCH DRAIN

DRAINAGE – NATURAL STREAM DESIGN

D-NSD-1		BOULDER CLUSTERS
D-NSD-2		ROCK VANES
D-NSD-3		LOG DEFELECTORS AND LOG VANES
D-NSD-4		LOG DROPS AND STEP POOLS
D-NSD-5		BOULDER RIFFLES
D-NSD-6		CONSTRUCTED RIFFLES
D-NSD-7		COCONUT FIBER ROLLS AND LIVE SILTATION
D-NSD-8		LIVE FASCINES AND WILLOW CUTTINGS
D-NSD-9		BRUSH MATTRESS
D-NSD-10		LARGE WOODY DEBRIS
D-NSD-11		VEGETATED RIPRAP AND GABIONS
D-NSD-12		VEGETATED MSE WALLS
D-NSD-13		LONGITUDINAL STONE TOE AND ARTICULATED CONCRETE MAT

ROADWAY AND PAVEMENT APPURTENANCES

RP-CS-1	09-29-10	CONCRETE SHOULDER RUMBLE STRIP DETAIL (FOR 4-LANE DIVIDED HIGHWAY)
RP-CS-2	09-29-10	CONCRETE SHOULDER RUMBLE STRIP DETAIL (FOR 6-LANE

		OR WIDER DIVIDED HIGHWAY)
RP-D-15	07-15-08	DETAILS OF STANDARD CONCRETE DRIVEWAYS
RP-D-16	07-15-08	DETAILS OF LOWERED STANDARD CONCRETE DRIVEWAYS
RP-DHO-1	10-26-93	MEDIAN OPENINGS ON 4-LANE DIVIDED HIGHWAY
RP-H-3	04-13-11	HANDICAP RAMP AND TRUNCATED DOME SURFACE DETAIL
RP-H-4	04-13-11	PERPENDICULAR CURB RAMP
RP-H-5	04-13-11	PARALLEL CURB RAMP
RP-H-6	04-13-11	MEDIAN CROSSING
RP-H-7	04-13-11	PERPENDICULAR HANDICAP RAMP FOR 20’ THRU 75’ RADIUS
RP-H-8	04-13-11	PERPENDICULAR HANDICAP RAMP FOR 20’ THRU 75’ RADIUS
RP-H-9	04-13-11	PARALLEL HANDICAP RAMP FOR 20’ THRU 75’ RADIUS
RP-I-5	12-18-96	EXAMPLES OF STREET AND ALLEY INTERSECTIONS
RP-J-1	10-26-00	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING
RP-J-3	10-26-00	PORTLAND CEMENT CONCRETE PAVEMENT JOINT TYPES AND SPACING
RP-J-5	07-01-01	TYPICAL ACCELERATION AND DECELERATION LANE JOINT TYPES AND SPACING FOR CONCRETE RAMPS
RP-J-7	01-30-12	CONCRETE RAMP JOINT TYPES AND SPACING
RP-J-9	02-02-12	CONTRACTION AND CONSTRUCTION JOINTS FOR CONCRETE PAVEMENT
RP-J-11	07-29-96	3/4" AND 1-3/4" EXPANSION AND EDGE PAVEMENT JOINTS
RP-J-13	03-20-91	3/4" AND 1-3/4" ELASTOMERIC COMPRESSION JOINT SEALS
RP-J-15	01-19-02	LONGITUDINAL CONTRACTION AND CONSTRUCTION JOINTS
RP-J-17	02-02-12	DOWEL ASSEMBLY DEVICES
RP-J-18	02-02-12	DOWEL ASSEMBLY DEVICES

RP-J-19	02-02-12	DOWEL ASSEMBLY DEVICES
RP-J-23	01-24-12	CONCRETE PAVEMENT REPAIR DETAILS
RP-J-24	05-27-01	CONCRETE PAVEMENT SPALL AND RANDOM CRACK REPAIR DETAILS
RP-J-25	05-27-01	CONCRETE PAVEMENT JOINT REPAIR DETAILS
RP-MC-1	02-28-02	STANDARD 4" SLOPING (MOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-MC-2	02-28-02	STANDARD 6" SLOPING (MOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-NMC-10	07-29-03	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-NMC-11	02-28-02	STANDARD VERTICAL (NONMOUNTABLE) CONCRETE CURBS AND CONCRETE CURBS AND GUTTERS
RP-PMR-1	05-27-01	STANDARD DETAILS FOR PROPOSED PERMANENT MAINTENANCE RAMP
RP-R-1	05-27-01	STANDARD RAMPS TO SIDE ROADS
RP-R-2		STANDARD CONSTRUCTION DETAILS FOR ROUNDABOUTS
RP-S-7	07-29-96	DETAILS FOR STANDARD CONCRETE SIDEWALKS
RP-S-8	01-19-93	DETAILS FOR STANDARD CONCRETE STEPS AND PIPE HANDRAILS

SAFETY APPURTENANCES AND FENCE

S-F-1		HIGH VISIBILITY FENCE
S-F-10	06-01-09	STANDARD RIGHT-OF-WAY STOCK FENCE
S-F-10A	06-01-09	STANDARD RIGHT-OF-WAY STOCK FENCE WITH TIMBER POSTS
S-F-10B	05-14-10	STANDARD RIGHT-OF-WAY CHAIN LINK FENCE
S-F-10C	05-14-10	RIGHT-OF-WAY FENCE AT BRIDGES AND BOX CULVERTS
S-F-10D		RIGHT-OF-WAY FENCE LOCATIONS AT INTERCHANGES
S-FG-11	05-14-10	STANDARD STOCK FENCE GATE

S-FG-20	01-24-08	EXAMPLES OF WATER GATES AND WATER CROSSINGS
S-GR-11	11-26-07	W-BEAM & THRIE BEAM BARRIER RAIL AND RUB RAIL ALTERNATES
S-GR-12	05-27-03	W-BEAM BARRIER POST DETAILS AND SPECIFICATIONS
S-GR-13	05-27-03	BARRIER RAIL MOUNTING, POST BLOCK-OUTS WITH VERTICAL ADJUSTMENT HOLES
S-GR-13A		BARRIER RAIL MOUNTING POST FOR PLASTIC BLOCK-OUTS WITH HORIZONTAL ADJUSTMENT HOLES
S-GR-14	04-17-12	W-BEAM BARRIER FASTENING HARDWARE AND BRIDGE APPROACH DELINEATORS
S-GR-15	06-30-05	W-BEAM BARRIER TERMINAL ELEMENT DETAILS
S-GR-16	05-27-01	GUARDRAIL BARRIER TREATMENT FOR PIERS IN MEDIAN
S-GR-17	09-11-02	BRIDGE END PROTECTION IN MEDIAN FOR DUAL BRIDGE
S-GR-18	05-15-08	GUARDRAIL TERMINAL (TYPE IN-LINE) AND SHOULDER LINE DETAIL
S-GR-19	06-01-09	GUARDRAIL TERMINAL ANCHORS, TYPE 12 AND TYPE 13
S-GR-19A	06-30-09	TYPE 12 BURIED-IN-BACKSLOPE GUARDRAIL TERMINAL
S-GR-19B	05-15-08	TYPE 12 ALTERNATE BURIED IN BACKSLOPE GUARDRAIL TERMINAL
S-GR-19C		GUARDRAIL TERMINAL ANCHOR, TYPE 13 ALTERNATE
S-GR-20	05-27-01	MEDIAN DIVIDER GUARDRAIL AND GUARDRAIL TERMINAL ANCHORS
S-GR-21	06-30-09	LENGTH OF NEED AND TERMINAL REQUIREMENTS IN FILLS
S-GR-22	03-10-10	GUARDRAIL ATTACHMENT TO CONCRETE DECKS OF BOX AND SLAB CULVERTS AND BRIDGES
S-GR-23	09-11-02	GUARDRAIL ATTACHMENT TO STRUCTURES AND PROTECTIVE GUARDRAIL AT BRIDGE ENDS DETAILS
S-GR-23A		GUARDRAIL ATTACHMENT TO BRIDGE END FOR LOW-VOLUME LOCAL ROADS (ADT<400)
S-GR-24	05-15-08	GUARDRAIL END TERMINALS AT BRIDGE ENDS

S-GR-26	03-15-08	SLOTTED GUARDRAIL TERMINAL ANCHOR (TYPE 21)
S-GR-27	05-27-03	GUARDRAIL TERMINAL ANCHOR (TYPE 21) ELEMENT ASSEMBLY DETAILS
S-GR-28	06-30-05	GUARDRAIL TERMINAL ANCHOR (TYPE 21) POST AND ASSEMBLY DETAILS
S-GR-38	06-30-09	DETAILS FOR CONSTRUCTION OF EARTH PAD FOR TYPE 38 GUARDRAIL END TERMINALS
S-GR-38A	06-30-05	DETAILS FOR CONSTRUCTION OF ALTERNATE EARTH PAD FOR TYPE 38 GUARDRAIL END TERMINALS
S-GR-39	05-27-01	DETAILS FOR CONSTRUCTION OF EARTH PAD FOR TYPE 21 GUARDRAIL END TERMINALS
S-GR-43		TANGENTIAL GUARDRAIL TERMINAL ANCHOR (TYPE 38) POST LAYOUT AND ERECTION DETAILS
S-GR-44		TANGENTIAL GUARDRAIL TERMINAL ANCHOR (TYPE 38) (2 TUBE) GUARDRAIL ELEMENT POST AND ASSEMBLY DETAILS
S-GR-45		LONG SPAN GUARDRAIL-ONE POST OMITTED
S-GR-46		CURVED GUARDRAIL
S-MB-1	06-06-11	STANDARD CONCRETE MEDIAN BARRIER
S-MB-2	05-27-01	STANDARD CONCRETE MEDIAN BARRIER (BRIDGE PIER PROTECTION)
S-MB-3	10-26-99	STANDARD CONCRETE GLARE SCREEN MEDIAN BARRIER
S-MB-3A	10-26-99	STANDARD CONCRETE GLARE SCREEN MEDIAN BARRIER
S-MB-4	05-27-01	STANDARD CONCRETE GLARE SCREEN MEDIAN BARRIER (BRIDGE PIER PROTECTION)
S-MB-7		STANDARD DETAILS FOR CONCRETE BARRIER WALL INCLUDING GUARDRAIL ATTACHMENT
S-MB-8		STANDARD DETAILS FOR CONCRETE BARRIER WALL AT BRIDGE BENTS INCLUDING GUARDRAIL ATTACHMENT
S-RP-2	01-19-99	STANDARD CONCRETE RIGHT-OF-WAY MARKERS
S-SSMB-1		32” SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-2		51” SINGLE SLOPE CONCRETE BARRIER WALL

S-SSMB-3	07-30-10	51” HALF SIZE SINGLE SLOPE CONCRETE BARRIER WALL (BRIDGE PIER PROTECTION)
S-SSMB-4	07-30-10	FLARED SINGLE SLOPE CONCRETE MEDIAN BARRIER WALL
S-SSMB-5		SINGLE SLOPE MEDIAN BARRIER WALL CATCH BASIN DETAIL
S-SSMB-6		GUARDRAIL ATTACHMENT TO SINGLE SLOPE CONCRETE BARRIER WALL
S-SSMB-7		FOOTING DETAILS FOR OVERHEAD SIGN STRUCTURE 32” MEDIAN BARRIER WALL
S-SSMB-8		FOOTING DETAILS FOR OVERHEAD SIGN STRUCTURE 51” MEDIAN BARRIER WALL
S-SSMB-9		SINGLE SLOPE BARRIER WALL FOR GRADE SEPARATED MEDIAN

TRAFFIC CONTROL APPURTENANCES

T-FAB-1	05-27-97	FLASHING YELLOW ARROW BOARD
T-FO-1		FIBER OPTIC AERIAL ENTRANCE DETAILS
T-FO-2		FIBER OPTIC UNDERGROUND ENTRANCE DETAILS
T-FO-3		FIBER OPTIC AERIAL CONNECTION DETAILS
T-FO-4		FIBER OPTIC PULL BOX, CABINET & POLE DETAILS
T-L-1	02-15-07	STANDARD LIGHTING DETAILS - FOUNDATIONS
T-L-1SA	07-29-04	STANDARD LIGHTING DETAILS FOR SINGLE ARM SUPPORTS
T-L-1TM		STANDARD LIGHTING DETAILS TENON MOUNTED OFFSET LIGHTING SUPPORTS
T-L-2	09-11-03	FOUNDATION DETAIL FOR LUMINAIRE MOUNTED ON CONCRETE MEDIAN BARRIER
T-L-3	04-15-96	STANDARD LIGHTING DETAILS - PULL BOXES
T-L-4	05-25-11	STANDARD LIGHTING DETAILS CONDUIT, CABLE INSTALLATION

T-M-1	11-01-11	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS AND MARKING ABBREVIATIONS
T-M-2	01-12-12	DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS
T-M-3	09-19-91	MARKING STANDARDS FOR TRAFFIC ISLANDS, MEDIANS & PAVED SHOULDERS ON CONVENTIONAL ROADS
T-M-4	11-01-11	STANDARD INTERSECTION PAVEMENT MARKINGS
T-M-5	01-12-12	MARKING DETAILS FOR EXPRESSWAYS & FREEWAYS
T-M-6	01-12-12	MARKING DETAIL FOR EXPRESSWAY & FREEWAY INTERCHANGES
T-M-7	01-12-12	GORE MARKING DETAILS FOR EXPRESSWAY & FREEWAY INTERCHANGES
T-M-8	01-12-12	MARKING DETAILS FOR EXPRESSWAYS & FREEWAYS
T-M-9	11-01-11	MARKING DETAILS FOR RAMP INTERSECTIONS
T-M-10	11-01-11	SIGNING AND PAVEMENT MARKINGS FOR SHARED-USE PATHS
T-M-11	11-01-11	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES AND ROUTES ON RURAL ROADS
T-M-12	11-01-11	SIGNING AND PAVEMENT MARKINGS FOR URBAN BICYCLE LANES
T-M-13		SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES
T-M-14	11-01-11	SIGNING AND PAVEMENT MARKINGS FOR BICYCLE LANES AT INTERSECTIONS
T-M-15		ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED ROUTES
T-M-15A	11-01-11	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR INTERSTATE AND ACCESS CONTROLLED ROUTES
T-M-16	11-01-11	ASPHALT SHOULDER RUMBLE STRIP INSTALLATION DETAILS FOR NON-ACCESS CONTROLLED ROUTES
T-PBR-1	06-30-09	INTERCONNECTED PORTABLE BARRIER RAIL
T-PBR-2	11-01-11	DETAIL FOR VERTICAL PANELS AND FLEXIBLE

		DELINEATORS
T-RR-1	11-01-11	TYPICAL PAVEMENT MARKING AT RAILROAD-HIGHWAY GRADE CROSSINGS AND RAILROAD ADVANCE WARNING SIGN
T-RR-2	11-01-11	STANDARD DRAWING FOR RAILROAD AND HIGHWAY CROSSING SIGNAL WITH GATE
T-RR-3	11-01-11	STANDARD DRAWING FOR RAILROAD-HIGHWAY CROSSING SIGNAL
T-RR-4	11-01-11	STANDARD DRAWING FOR TYPICAL CURB & GUTTER PLAN FOR RAILROAD-HIGHWAY CROSSING WITH OR WITHOUT GATES
T-RR-5	11-01-11	STANDARD DRAWING FOR RAILROAD-HIGHWAY CROSSING SIGNAL TYPICAL CANTILEVER SIGN
T-RR-6		TYPICAL SIGNING AND MARKING AT PASSIVE RAILROAD HIGHWAY GRADE CROSSINGS
T-S-6	02-12-91	STANDARD MOUNTING DETAILS - BOLTED EXTRUDED PANELS
T-S-7	02-12-91	HIGHWAY SHIELDS USED ON INTERSTATE AND U.S. NUMBERED ROUTES
T-S-8	07-15-91	HIGHWAY SHIELDS USED ON STATE NUMBERED ROUTES AND ARROWS
T-S-9	11-01-11	STANDARD LAYOUT - GROUND MOUNTED SIGNS
T-S-10	04-04-12	STANDARD MOUNTING DETAILS - FLAT SHEET SIGNS, ALUMINUM-STEEL DESIGN
T-S-11	06-06-11	DELINEATOR AND MILEPOST DETAILS
T-S-12	05-27-03	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, SQUARE TUBES
T-S-13	05-27-01	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, I-BEAMS
T-S-14	05-27-01	STANDARD STEEL GROUND MOUNTED SIGNS, BREAK-AWAY TYPE POST FOOTING DETAILS, WF-BEAMS
T-S-15	12-07-90	STANDARD CONDUIT & GROUND DETAILS FOR OVERHEAD & CANTILEVER SIGN STRUCTURES

T-S-16	11-01-11	GROUND MOUNTED ROADSIDE SIGN AND DETAILS
T-S-16A	11-01-11	GROUND MOUNTED ROADSIDE SIGN PLACEMENT DETAILS
T-S-17	10-26-96	STANDARD GROUND MOUNTED SIGN USING PERFORATED/KNOCKOUT SQUARE TUBE
T-S-18	05-27-01	END OF ROADWAY AND DEAD END SIGNS, METAL BARRICADES (TYPE III) & WORK ZONE SPEED SIGNS
T-S-19	07-29-91	STANDARD MEMBERS BENDAWAY SIGN SUPPORTS STEEL DESIGN
T-S-20	11-01-11	SIGN DETAILS
T-S-21		DETAILS FOR SIGN MOUNTS ON CONCRETE MEDIAN BARRIERS
T-SG-1	11-01-11	WOOD POLE, DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-2	07-29-04	LOOP LEAD-INS CONDUIT AND PULL BOXES
T-SG-3	11-11-04	STANDARD NOTES AND DETAILS OF INDUCTIVE LOOPS
T-SG-3A		ALTERNATE DETECTION DETAILS
T-SG-4		SPAN WIRE AND MESSENGER CABLE DETAILS
T-SG-5	07-29-04	CONTROLLER CABINET DETAILS
T-SG-7	11-01-11	SIGNAL HEAD ASSEMBLIES AND PEDESTRIAN PUSH BUTTON SIGNS
T-SG-7A	11-01-11	TYPICAL SIGNAL HEAD PLACEMENT
T-SG-8	11-01-11	STRAIN POLE DETAILS FOR SPAN MOUNTED SIGNALS
T-SG-9	11-16-07	DETAILS OF CANTILEVER SIGNAL SUPPORT
T-SG-9A		MISCELLANEOUS SIGNAL DETAILS
T-SG-10	01-05-10	MAST ARM POLE AND STRAIN POLES FOUNDATION DETAILS
T-SG-11	07-29-04	MAINTENANCE OF EXISTING SIGNALS DURING HIGHWAY CONSTRUCTION
T-SG-12	11-01-11	TYPICAL WIRING FOR SIGNAL HEADS AND DETECTION LOOPS

T-SG-13	06-01-09	FLASHING BEACON DETAIL
T-WZ-10	04-02-12	ADVANCE ROAD WORK SIGNING ON HIGHWAYS AND FREEWAYS
T-WZ-11	03-13-09	ONE LANE CLOSURE DETAIL ON DIVIDED HIGHWAYS
T-WZ-12	03-13-09	ONE LANE CLOSURE DETAIL FOR BRIDGES ON DIVIDED HIGHWAYS
T-WZ-13	03-13-09	TWO-OUTSIDE LANE CLOSURE ON FREEWAY OR EXPRESSWAY
T-WZ-14	03-13-09	TWO-OUTSIDE LANE CLOSURE ON INTERSTATE AND EXPRESSWAY (PORTABLE BARRIER RAIL)
T-WZ-15	04-02-12	INTERIOR LANE CLOSURE ON FREEWAYS OR EXPRESSWAYS
T-WZ-16	03-13-09	LANE SHIFT ON DIVIDED HIGHWAYS AND FREEWAYS
T-WZ-18	03-13-09	SHOULDER CLOSURE DETAIL FOR FREEWAYS AND DIVIDED HIGHWAYS
T-WZ-19	04-02-12	MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS
T-WZ-20	12-18-99	GEOMETRIC MEDIAN CROSS-OVER DETAIL ON DIVIDED HIGHWAYS
T-WZ-21	03-15-11	LANE CLOSURE WITH LEFT HAND MERGE AND LANE SHIFT
T-WZ-30	09-01-05	TRAFFIC CONTROL 2-LANE, 2-WAY DIVERSION (40 MPH OR LESS)
T-WZ-31	09-01-05	TRAFFIC CONTROL 2-LANE, 2-WAY DIVERSION (GREATER THAN 40 MPH)
T-WZ-32	03-03-06	TRAFFIC CONTROL PLAN SIGNAL LAYOUT FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-33	05-27-98	TRAFFIC CONTROL PLAN FOR CLOSE INTERSECTION CONDITIONS USING TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-34	09-01-05	TRAFFIC CONTROL PLAN GENERAL NOTES FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-35	04-02-12	TRAFFIC CONTROL PLAN PAY ITEM AND SIGN DETAILS FOR

		TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE
T-WZ-36	04-02-12	LANE CLOSURE ON LOW-VOLUME 2-LANE HIGHWAY
T-WZ-40	04-02-12	RIGHT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-41	04-02-12	LEFT LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-42	04-02-12	CENTER LANE CLOSURES AT NEAR SIDE OF INTERSECTIONS
T-WZ-50	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 2 OR 3 LANE MAJOR ROUTES
T-WZ-51	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR ROUTES
T-WZ-52	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR 5 LANE MAJOR AND MINOR ROUTES
T-WZ-53	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR MORE LANE DIVIDED MAJOR ROUTES
T-WZ-54	04-02-12	TRAFFIC CONTROL FOR SIGNALS ONLY PROJECTS ON 4 OR MORE LANE DIVIDED MAJOR ROUTES AND 4 OR MORE LANE MINOR ROUTES
T-WZ-55		SIDEWALK TRAFFIC CONTROL

EROSION PREVENTION AND SEDIMENT CONTROL

EC-STR-1	04-01-08	DEWATERING STRUCTURE
EC-STR-2	05-14-10	SEDIMENT FILTER BAG
EC-STR-3B	04-01-08	SILT FENCE
EC-STR-3C	04-01-08	SILT FENCE WITH WIRE BACKING
EC-STR-3D	04-01-08	ENHANCED SILT FENCE
EC-STR-3E	04-01-08	SILT FENCE FABRIC JOINING DETAILS
EC-STR-4	01-01-10	ENHANCED SILT FENCE CHECK (TRAPEZOIDAL DITCH)
EC-STR-4A	01-01-10	ENHANCED SILT FENCE CHECK (V-DITCH)

EC-STR-4B		ENHANCED SILT FENCE CHECK DETAILS
EC-STR-6	04-01-08	ROCK CHECK DAM
EC-STR-6A		ENHANCED ROCK CHECK DAM
EC-STR-7	04-01-08	SEDIMENT TRAP WITH CHECK DAM
EC-STR-8		FILTER SOCK
EC-STR-11	04-01-08	CULVERT PROTECTION TYPE 1
EC-STR-11A		CULVERT PROTECTION TYPE 2
EC-STR-12	04-01-08	ROCK SEDIMENT DAM
EC-STR-13	04-01-08	ROCK AND EARTH SEDIMENT EMBANKMENT
EC-STR-15	04-01-08	SEDIMENT BASIN
EC-STR-16	04-01-08	SEDIMENT BASINS RISER AND COLLAR APPURTENANCES
EC-STR-17	04-01-08	SEDIMENT BASIN EMBANKMENT DETAILS
EC-STR-19	04-01-08	CATCH BASIN PROTECTION
EC-STR-21	04-01-08	PERMANENT RIPRAP BASIN ENERGY DISSIPATOR
EC-STR-25	04-01-08	TEMPORARY CULVERT CROSSING, CONSTRUCTION EXIT, CONSTRUCTION FORD
EC-STR-27	04-01-08	TEMPORARY SLOPE DRAIN AND BERM
EC-STR-29	04-01-08	PERMANENT SLOPE DRAIN PIPE
EC-STR-30		INSTREAM DIVERSION (WITHOUT TRAFFIC)
EC-STR-30A		INSTREAM DIVERSION (WITH TRAFFIC)
EC-STR-31	04-01-08	TEMPORARY DIVERSION CHANNEL
EC-STR-31A	04-01-08	TEMPORARY DIVERSION CHANNEL DESIGN
EC-STR-32	04-01-08	TEMPORARY DIVERSION CULVERTS
EC-STR-33	04-01-08	SUSPENDED PIPE DIVERSION (DOWNSTREAM)
EC-STR-33A	04-01-08	SUSPENDED PIPE DIVERSION (UPSTREAM)
EC-STR-34	04-01-08	EROSION CONTROL BLANKET FOR SLOPE INSTALLATION

EC-STR-35	04-01-08	FILTER BERMS
EC-STR-36	04-01-08	TURF REINFORCEMENT MAT FOR CHANNEL INSTALLATION
EC-STR-37	04-01-08	SEDIMENT TUBE
EC-STR-38	04-01-08	FLOATING TURBIDITY CURTAIN
EC-STR-39	04-01-08	CURB INLET PROTECTION TYPE 1 & 2
EC-STR-39A	06-24-10	CURB INLET PROTECTION TYPE 3 & 4
EC-STE-40		CATCH BASIN FILTER ASSEMBLY FOR CIRCULAR STRUCTURES
EC-STR-41		CATCH BASIN FILTER ASSEMBLY (TYPE 1)
EC-STR-41A		CATCH BASIN FILTER ASSEMBLY (TYPE 1) SLIPCOVER DETAILS
EC-STR-42		CATCH BASIN FILTER ASSEMBLY (TYPE 2)
EC-STR-42A		CATCH BASIN FILTER ASSEMBLY (TYPE 2) SLIPCOVER DETAILS
EC-STR-43		CATCH BASIN FILTER ASSEMBLY (TYPE 3)
EC-STR-43A		CATCH BASIN FILTER ASSEMBLY (TYPE 3) SLIPCOVER DETAILS
EC-STR-44		CATCH BASIN FILTER ASSEMBLY (TYPE 4)
EC-STR-44A		CATCH BASIN FILTER ASSEMBLY (TYPE 4) SLIPCOVER DETAILS
EC-STR-45		CATCH BASIN FILTER ASSEMBLY (TYPE 5)
EC-STR-45A		CATCH BASIN FILTER ASSEMBLY (TYPE 5) SLIPCOVER DETAILS
EC-STR-46		CATCH BASIN FILTER ASSEMBLY (TYPE 6)
EC-STR-46A		CATCH BASIN FILTER ASSEMBLY (TYPE 6) SLIPCOVER DETAILS
EC-STR-47		CATCH BASIN FILTER ASSEMBLY (TYPE 7)
EC-STR-47A		CATCH BASIN FILTER ASSEMBLY (TYPE 7) SLIPCOVER DETAILS

EC-STR-48		CATCH BASIN FILTER ASSEMBLY (TYPE 8)
EC-STR-48A		CATCH BASIN FILTER ASSEMBLY (TYPE 8) SLIPCOVER DETAILS
EC-STR-49		CATCH BASIN FILTER ASSEMBLY (TYPE 9)
EC-STR-49A		CATCH BASIN FILTER ASSEMBLY (TYPE 9) SLIPCOVER DETAILS
EC-STR-50		CATCH BASIN FILTER ASSEMBLY (TYPE 10)
EC-STR-50A		CATCH BASIN FILTER ASSEMBLY (TYPE 10) SLIPCOVER DETAILS
EC-STR-51		CATCH BASIN FILTER ASSEMBLY (TYPE 11)
EC-STR-51A		CATCH BASIN FILTER ASSEMBLY (TYPE 11) SLIPCOVER DETAILS
EC-STR-55	04-01-08	GABION CHECK DAM
EC-STR-56	04-01-08	GABION CHECK DAM DESIGN TABLES
EC-STR-57	04-01-08	GABION ASSEMBLY DETAILS
EC-STR-58	04-01-08	GABION ASSEMBLY DETAILS
EC-STR-59	04-01-08	GABION CHECK DAM GENERAL NOTES AND COMPONENT PROPERTIES
EC-STR-61		LEVEL SPREADERS
EL-W-1	05-27-96	DETAILS OF TREE WALLS
EL-W-2	05-27-01	STANDARD GRAVITY-TYPE RETAINING WALLS

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CHAPTER 2 – STANDARD STRUCTURE DRAWINGS

STRUCTURE DESIGN STANDARD DRAWINGS

BRIDGE APPURTENANCES ENGLISH (NEW STRUCTURES)

STD–1–1	07–31–00	BRIDGE RAILING CONCRETE PARAPET
STD–1–1SS	11-01-10	BRIDGE RAILING SINGLE SLOPE CONCRETE PARAPET
STD–1–2	03–28–08	SLIDER PLATE AND DECK DRAIN
STD-1-2SS		SLIDER PLATES FOR SINGLE SLOPE PARAPETS AND DECK DRAINS
STD–1– 3	07–31–00	STD. CONCRETE MEDIAN BARRIER
STD–1–3SS	11-01-10	STD. SINGLE SLOPE CONCRETE MEDIAN BARRIER
STD–1–4	01–05–01	SLIDER PLATES FOR MEDIAN BARRIER
STD-1-4SS		SLIDER PLATE ASSEMBLIES FOR SINGLE SLOPE MEDIAN BARRIER
STD–1–5	04–08–05	PAVEMENT AT BRIDGE ENDS
STD–1–6	04–28–97	BRIDGE END DRAIN W/ PABE
STD–1–7	07–31–00	BRIDGE END DRAIN W/ PABE
STD–1–8	05–01–95	BRIDGE END DRAIN 2’ X 8’ 7” W/PABE
STD–1–9	05–01–95	BRIDGE END DRAIN 4’ X 7” W/PABE
STD–1–10	03–28–94	BRIDGE END DRAIN W/O PABE
STD–1–11	05–21–99	BRIDGE END DRAIN W/O PABE
STD–1–12	03–28–94	BRIDGE END DRAIN 2’x8’7” W/O PABE
STD–1–13	03–28–94	BRIDGE END DRAIN 4’x8’7” W/O PABE
STD–2–1	11-01-10	BRIDGE MOUNTED INTERCONNECTED PORTABLE BARRIER RAIL
STD–2–2		VERTICAL PANEL DETAILS
STD–3–1	11-01-10	STRIPSEAL EXPANSION JOINT
STD–3–2	11-01-10	STRIPSEAL EXPANSION JOINT
STD–4–1	04–08–05	STD. PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS

STD–4–2	04–08–05	STD. PRECAST PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA
STD–4–3	03–02–02	STD.PRECAST PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS
STD–4–4	06–10–96	STD. PRECAST PRESTRESSED BRIDGE DECK PANELS CONSTRUCTION DETAILS
STD–5–1	10–25–93	STD. PILE DETAILS
STD–5–2	04–08–05	STD. PILE DETAILS
STD–6–1	11-01-10	STANDARD SEISMIC DETAILS
STD–6–2	11–07–94	STANDARD SEISMIC DETAILS
STD–7–1	11-01-10	STD. CONCRETE RAIL
STD–8–2	11-01-10	LIGHT STANDARD SUPPORT DETAILS
STD–8–2SS		SINGLE SLOPE PARAPET STANDARD LIGHT SUPPORT DETAILS
STD–8–3	09–01–91	MEDIAN BARRIER LIGHT STANDARD SUPPORT DETAILS
STD–8–3SS		SINGLE SLOPE MEDIAN BARRIER STANDARD LIGHT SUPPORT DETAILS
STD–8–4		SIGN, LUMINAIRE, AND TRAFFIC SIGNAL SUPPORTS
STD–9–1	10–07–08	REINFORCING BAR SUPPORT DETAILS FOR CONCRETE SLABS
STD–10–1	04–08–05	MISCELLANEOUS ABUTMENT AND DRAINAGE DETAILS
STD–11–1	08–13-02	BRIDGE RAILING W/ STRUCTURAL TUBING
STD–11–2		STANDARD CONCRETE CLASSIC RAIL
STD–14–1	10–15–08	STD. DETAILS AND INT. DIAPH.DETAILS FOR BULB – TEE BEAMS
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STD-17-141	SLAB BRIDGE, 2 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-142	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-143	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-144	SLAB BRIDGE, 2 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-145	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-146	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-147	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL

STD-17-148	SLAB BRIDGE, 2 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL
STD-17-151	SLAB BRIDGE, 3 BARRELS AT 6', CLEAR HTS. 3' - 6', 0 - 60' FILL
STD-17-152	SLAB BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 3' - 5', 0 - 60' FILL
STD-17-153	SLAB BRIDGE, 3 BARRELS AT 8', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-154	SLAB BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-155	SLAB BRIDGE, 3 BARRELS AT 10', CLEAR HTS. 7' - 10', 0 - 60' FILL
STD-17-156	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 4' - 6', 0 - 60' FILL
STD-17-157	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 7' - 9', 0 - 60' FILL
STD-17-158	SLAB BRIDGE, 3 BARRELS AT 12', CLEAR HTS. 10' - 12', 0 - 60' FILL
STD-17-159	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 5' - 7', 0 - 60' FILL
STD-17-160	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 8' - 11', 0 - 60' FILL
STD-17-161	SLAB BRIDGE, 3 BARRELS AT 14', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-162	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-163	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 9' - 12', 0 - 60' FILL
STD-17-164	SLAB BRIDGE, 3 BARRELS AT 16', CLEAR HTS. 13' - 16', 0 - 60' FILL
STD-17-165	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 6' - 8', 0 - 60' FILL
STD-17-166	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 9' - 11', 0 - 60' FILL
STD-17-167	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 12' - 14', 0 - 60' FILL
STD-17-168	SLAB BRIDGE, 3 BARRELS AT 18', CLEAR HTS. 15' - 18', 0 - 60' FILL

BRIDGE APPURTENANCES ENGLISH (BRIDGE REPAIRS)

SBR–2–115	01–04–96	GENERAL NOTES AND DETAILS FOR EXPANSION JOINT REPLACEMENT CONSTRUCTION TYPES "A" THRU "J" - 1991
SBR–2–116	01–04–96	GENERAL DETAILS FOR STRIPSEAL EXPANSION JOINT REPLACEMENTCONSTRUCTION DETAILS TYPES "A" THRU "J" - 1991
SBR–2–117	05–30–96	STRIPSEAL EXPEANSION JOINTS – REPLACEMENT CONSTRUCTION DETAILS TYPE "A" AND TYPE "B" - 1991
SBR–2–118	05–30–96	STRIPSEAL EXPANSION JOINT REPLACEMENT CONSTRUCTION DETAILS TYPE "C" AND TYPE "D" - 1991
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SBR–2–122	01–04–96	DETAILS FOR PRECAST SLAB BRIDGE CHANNELS, SPANS 16’ – 0” THRU 34’ – 0”, DEGREE OF SKEW 90 - 75 - 60 - 45 - 1992
SBR–2–123	01–04–96	DETAILS FOR PRECAST SLAB BRIDGE CHANNELS, SPANS 16’ – 0” THRU 34’ -0”, DEGREE OF SKEW 90 - 75 - 60 - 45 - 1992
SBR–2–124	01–04–96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10’ -2” ENDPOST - 1988
SBR–2–125	11–05–01	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10’ -2” ENDPOST - 1988
SBR–2–126	01–04–96	DETAILS SHOWING REPLACEMENT OF EXISTING BRIDGERAIL SYSTEM WITH NEW JERSEY SHAPE CONCRETE PARAPET AND NEW 10’ -2” ENDPOST - 1988
SBR–2–127	11–05–01	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL - 1988
SBR–2–128	01–04–96	DETAILS SHOWING PIER PROTECTION WITH NEW CONCRETE BARRIER WALL - 1988
SBR–2–129	11–05–01	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER - 1988
SBR–2–130	01–04–96	DETAILS SHOWING PIER PROTECTION WITH NEW VERTICAL CONCRETE BARRIER - 1988
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SBR–2–132	01–04–96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS EXISTING CONCRETE SLOPE FACE ENDPOST - 1989
SBR–2–133	01–22–02	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE VERTICAL FACE ENDPOST – 1989
SBR–2–134	01–04-96	DETAILS SHOWING GUARDRAIL ATTACHMENT AT BRIDGE ENDS TO EXISTING CONCRETE VERTICAL FACE ENDPOST - 1989
SBR–2–135	01–22–02	GUARDRAIL ATACHMENT TO EXISTING PIER PROTECTION – 1991

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SBR–2–140	11–05–01	STANDARD SHOWING DETAILS FOR ATTACHING NEW GUARDRAIL ALONG EXISTING BRIDGE RAILS - 1992
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