

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

JOHN C. SCHROER COMMISSIONER

BILL HASLAM GOVERNOR

#### **INSTRUCTIONAL BULLETIN NO. 14-06**

#### **Regarding Revised Standard Drawings**

Effective for the August 29th Letting (June 18th turn-in), the following Standard Catch Basin Drawings are revised and Section V of the Design Guidelines is revised for this update. All number 4 bar stirrups have been replaced with two layers of number 5 bars. Contractors may immediately substitute this revision for the current standard as an approved substitution.

DRAWING <u>NUMBER</u>	CURRENT REVISION <u>DATE</u>	DESCRIPTION
D-CB-10RA	3-11-14	STANDARD PRECAST 48" CIRCULAR NO. 10 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-10S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 10 CATCH BASIN
D-CB-10SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 10 CATCH BASIN
D-CB-12B	3-11-14	STANDARD RECTANGULAR BRICK NO. 12 CATCH BASIN
D-CB-12P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO.12 CATCH BASIN
D-CB-12RA	3-11-14	STANDARD PRECAST 48" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RB	3-11-14	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12RC	3-11-14	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-12S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 12 CATCH BASIN
D-CB-12SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 12 CATCH BASIN

<b>DRAWING</b> <u>NUMBER</u> D-CB-12SC	CURRENT REVISION <u>DATE</u> 3-11-14	<u>DESCRIPTION</u> STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-12SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 12 CATCH BASIN
D-CB-13B	3-11-14	STANDARD RECTANGULAR BRICK NO. 13 CATCH BASIN
D-CB-13P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-13RA	3-11-14	STANDARD PRECAST 48" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13RB	3-11-14	STANDARD PRECAST 60" AND 72" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13RC	3-11-14	STANDARD PRECAST 84" THRU 120" CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
D-CB-13S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 13 CATCH BASIN
D-CB-14B	3-11-14	STANDARD RECTANGULAR BRICK NO. 14 CATCH BASIN
D-CB-14P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 14 CATCH BASIN
D-CB-14RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN
D-CB-14S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 14 CATCH BASIN
D-CB-14SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 14 CATCH BASIN
D-CB-16B	3-11-14	STANDARD RECTANGULAR BRICK NO. 16 CATCH BASIN
D-CB-16S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 16 CATCH BASIN
D-CB-17S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 17 CATCH BASIN
D-CB-25B	3-11-14	STANDARD RECTANGULAR BRICK NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)

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<b>DRAWING</b> <u>NUMBER</u> D-CB-25RA	CURRENT REVISION <u>DATE</u> 3-11-14	<u>DESCRIPTION</u> STANDARD PRECAST 48" CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-25SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-26P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 26 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-26S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 26 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-27S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 27 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)
D-CB-28B	3-11-14	STANDARD RECTANGULAR BRICK NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28RA	3-11-14	STANDARD PRECAST 48" CIRCULAR NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-28S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 28 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-29P	3-11-14	STANDARD PRECAST RECTANGULAR CONCRETE NO. 29 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)
D-CB-29S	3-11-14	STANDARD RECTANGULAR CONCRETE NO. 29 CATCH BASIN (FOR USE WITH 4" MOUNTABLE CURB)

<b>DRAWING</b> <u>NUMBER</u> D-CB-31R	CURRENT REVISION DATE 3-11-14	<u>DESCRIPTION</u> STANDARD PRECAST CIRCULAR NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-31SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-38RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN
D-CB-38SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-38SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 38 CATCH BASIN
D-CB-39RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 39 CATCH BASIN
D-CB-39SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-39SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 39 CATCH BASIN
D-CB-40SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 40. CATCH BASIN
D-CB-41P	3-11-14	STANDARD 4' X 3' PRECAST RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41S	3-11-14	STANDARD 4' X 3' RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
D-CB-41SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)

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<b>DRAWING</b> <u>NUMBER</u> D-CB-41SE	CURRENT REVISION <u>DATE</u> 3-11-14	<u>DESCRIPTION</u> STANDARD 9' X 9' SQUARE CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)	
D-CB-42RB	3-11-14	STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN	
D-CB-42SB	3-11-14	STANDARD 4' X 4' SQUARE CONCRETE NO. 42 CATCH BASIN	
D-CB-42SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 42 CATCH BASIN	
D-CB-42SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 42 CATCH BASIN	
D-CB-43R	3-11-14	STANDARD PRECAST CIRCULAR NO. 43R CATCH BASIN	
D-CB-43SB	3-11-14	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 43SB CATCH BASIN	
D-CB-43SC	3-11-14	STANDARD 8' X 5'2" RECTANGULAR CONCRETE NO. 43SC CATCH BASIN	
D-CB-44SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 44 CATCH BASIN	
D-CB-45S	3-11-14	STANDARD 8' X 4' RECTANGULAR CONCRETE NO. 45 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)	
D-CB-46SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 46 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)	
D-CB-51SC	3-11-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51 CATCH BASIN (FOR USE IN FRONT OF CONCRETE RETAINING WALL)	
D-CB-51SD	3-11-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 51 CATCH BASIN FOR USE IN FRONT OF CONCRETE RETAINING WALL)	
D-CB-51SE	3-11-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 51 CATCH BASIN	
D-CB-52SE	3-11-14	STANDARD 9' x 9' SQUARE CONCRETE NO. 52 CATCH BASIN	
D-CB-99R	3-11-14	MISCELLANEOUS DETAILS FOR ROUND STRUCTURES	
D-CB-99RA	3-19-14	BILL OF STEEL FOR ROUND STRUCTURES	
D-MH-3	4-21-14	STANDARD PRECAST CIRCULAR LID DETAILS FOR NO. 3 MANHOLE	
D-MH-4	4-1-14	STANDARD NO. 3 MANHOLE CASTINGS AND STEPS	
D-MH-5	4-1-14	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 3 MANHOLE	

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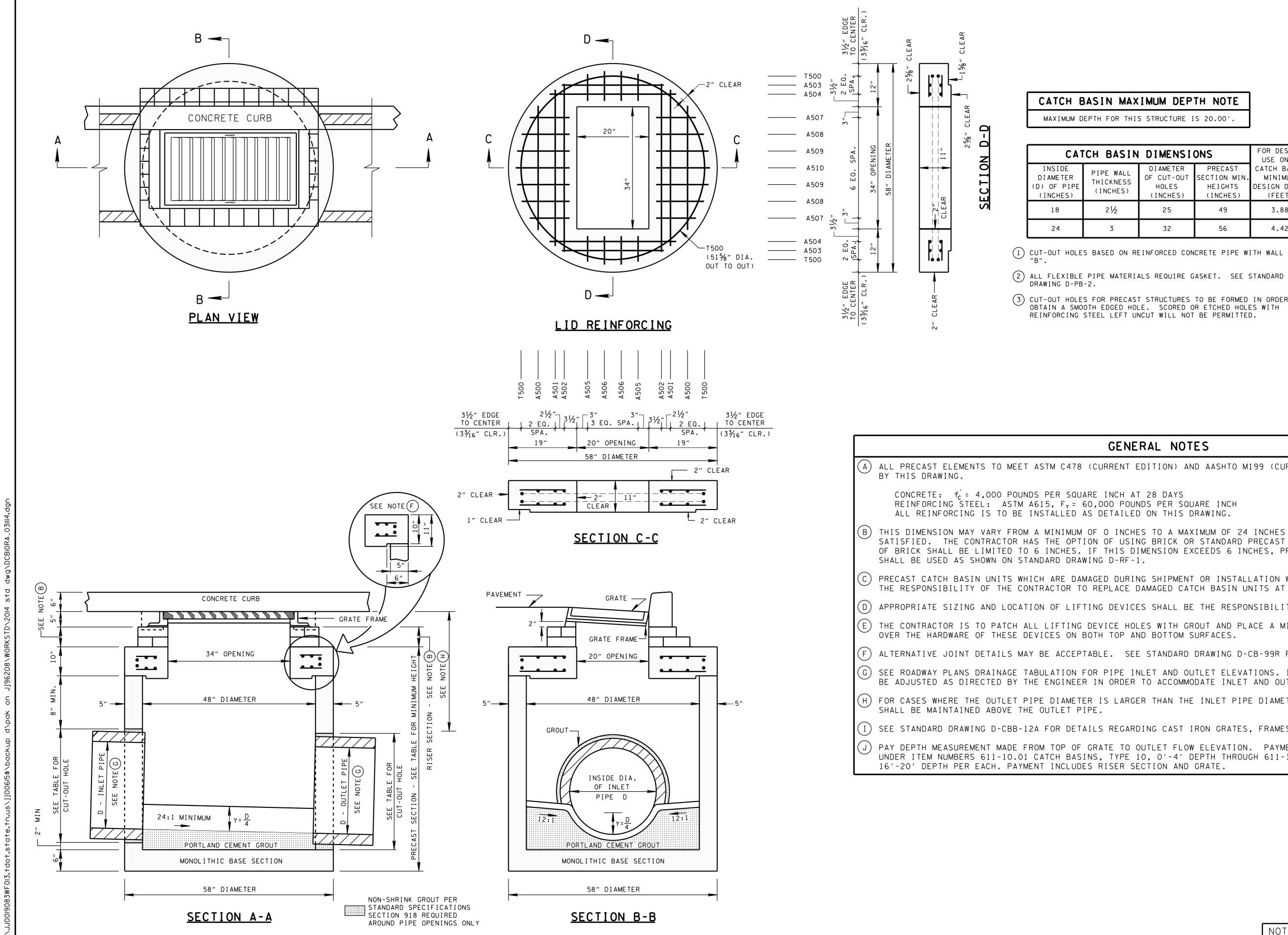
DRAWING NUMBER	CURRENT REVISION DATE	DESCRIPTION
D-MH-6	4-1-14	STANDARD 7' X 7' SQUARE CONCRETE NO. 3 MANHOLE
D-MH-7	4-1-14	STANDARD 9' X 9' SQUARE CONCRETE NO. 3 MANHOLE

D-MH-3A and D-MH-3B are voided by this IB.

Copies of the revised standard drawings are attached.

Jennifer Lloyd, PE Civil Engineering Director Roadway Design Division

JL:ARH:MWC Attachments 4/22/14



09:48 WF0I3.<sup>-</sup>

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.

REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

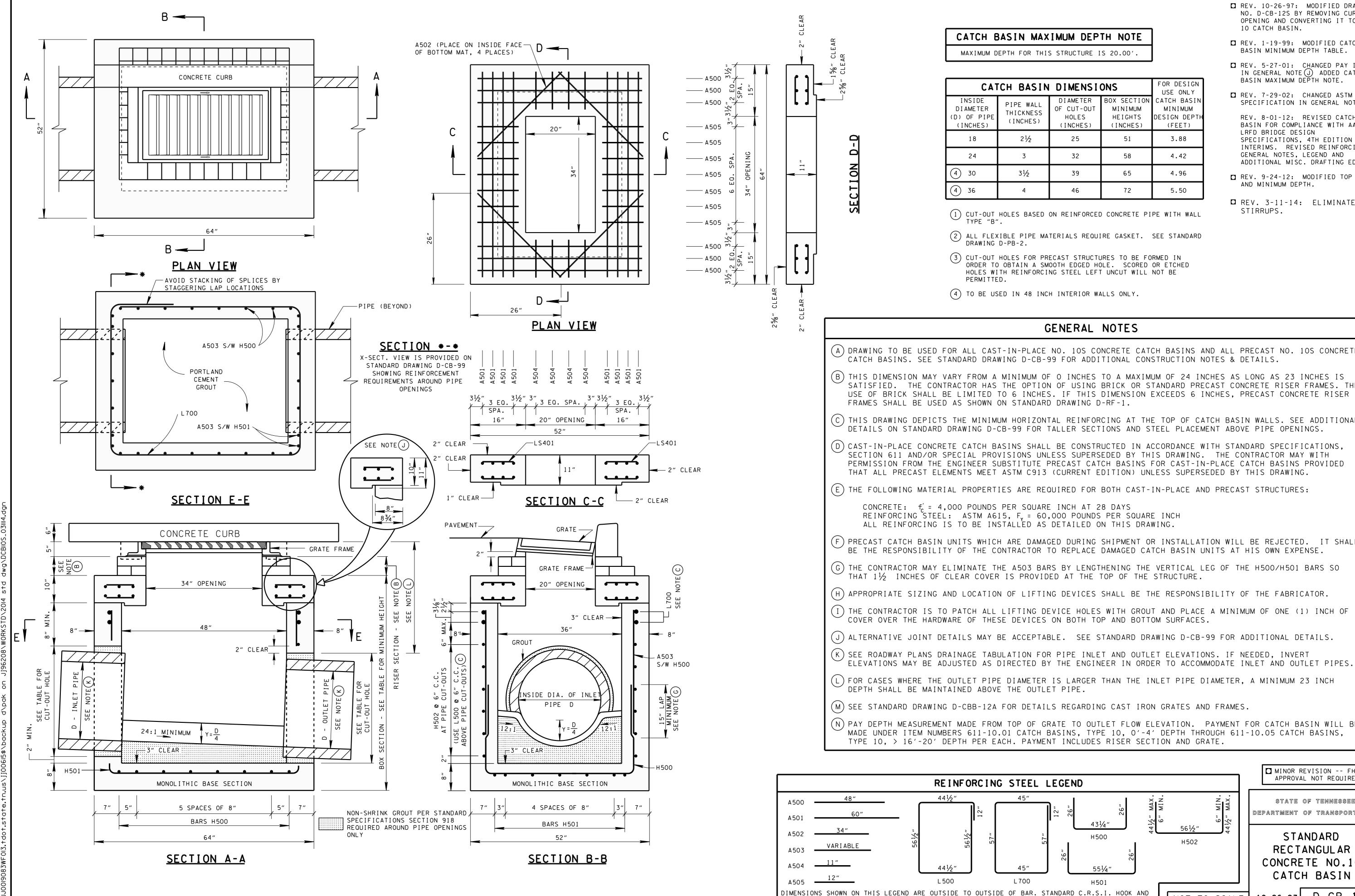
MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

BASIN	FOR DESIGN USE ONLY		
E WALL CKNESS CHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21/2	25	49	3.88
3	32	56	4.42

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

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
RENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED
NCH AT 28 DAYS O POUNDS PER SQUARE INCH TAILED ON THIS DRAWING.
INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS F USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE HIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES D-RF-1.
DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE LACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.
DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
CE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER TOP AND BOTTOM SURFACES.
. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.
IPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.
LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH
REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.
E TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE TYPE 10, O'-4' DEPTH THROUGH 611-10.05 CATCH BASINS, TYPE 10, > SER SECTION AND GRATE.
MINOR REVISION FHW/ APPROVAL NOT REQUIRED
STATE OF TENNESSEE Department of transportat
STANDARD PRECAST 48" CIRCULAR NO. 10 CATCH BASIN (FOR USE WITH 6" NONMOUNTABLE CURB)
NOT TO SCALE 9-5-02 D-CB-10



#### CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

ASIN	DIMENSI	FOR DESIGN USE ONLY	
WALL (NESS HES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
1/2	25	51	3.88
3	32	58	4.42
1/2	39	65	4.96
1	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

(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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

# 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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:

(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  $1\frac{1}{2}$  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.

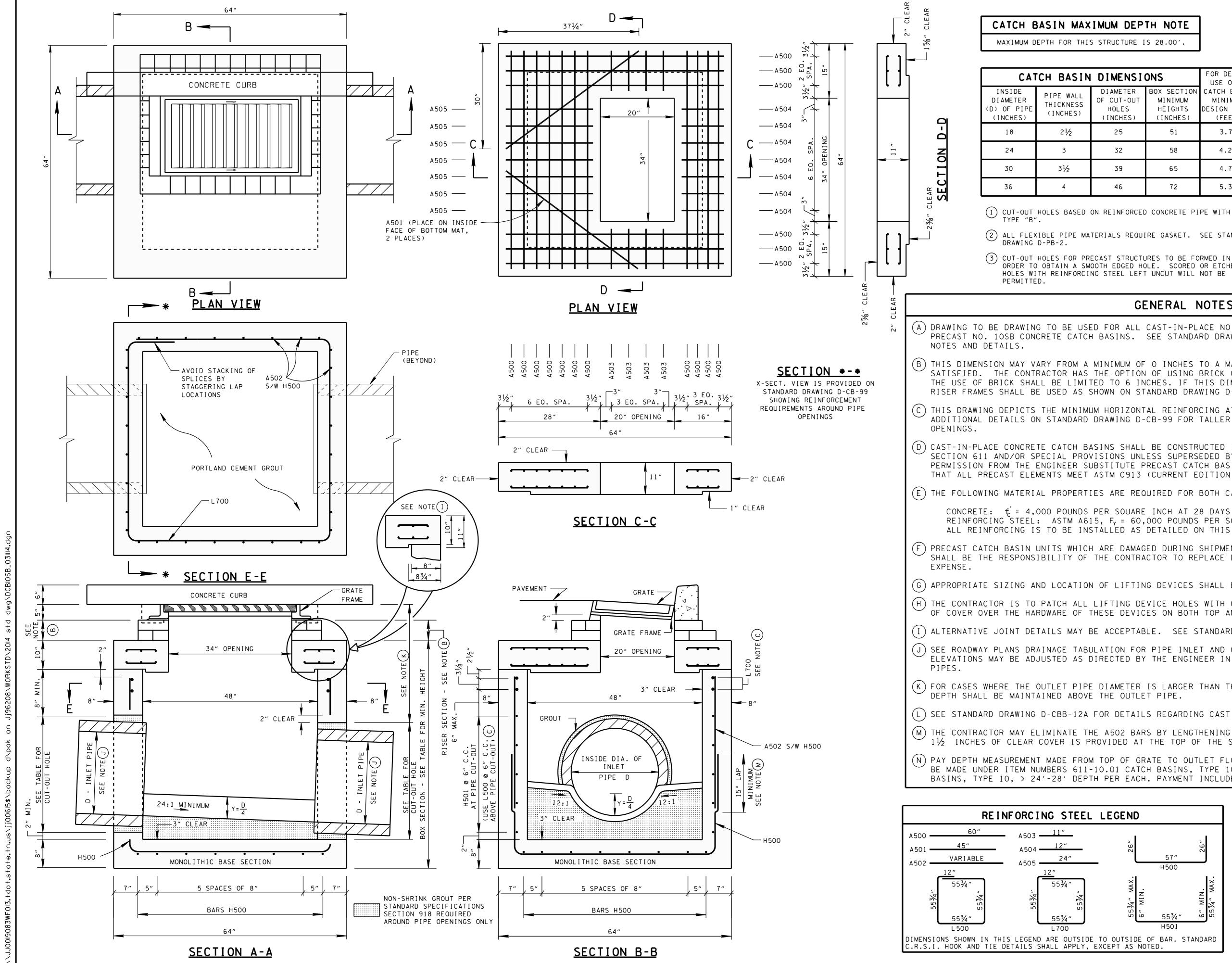
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

(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.

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AR. STANDARD C.R.S.I. HOOK AND NOT TO S	CALE 10	-26-97	D-CB-10S



CATCH BASIN MAXIMUM DEPTH NOTE

DIMENSI	FOR DESIGN USE ONLY	
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
25	51	3.71
32	58	4.25
39	65	4.79
46	72	5.33

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

# 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

(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:

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

(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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 21 INCH

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

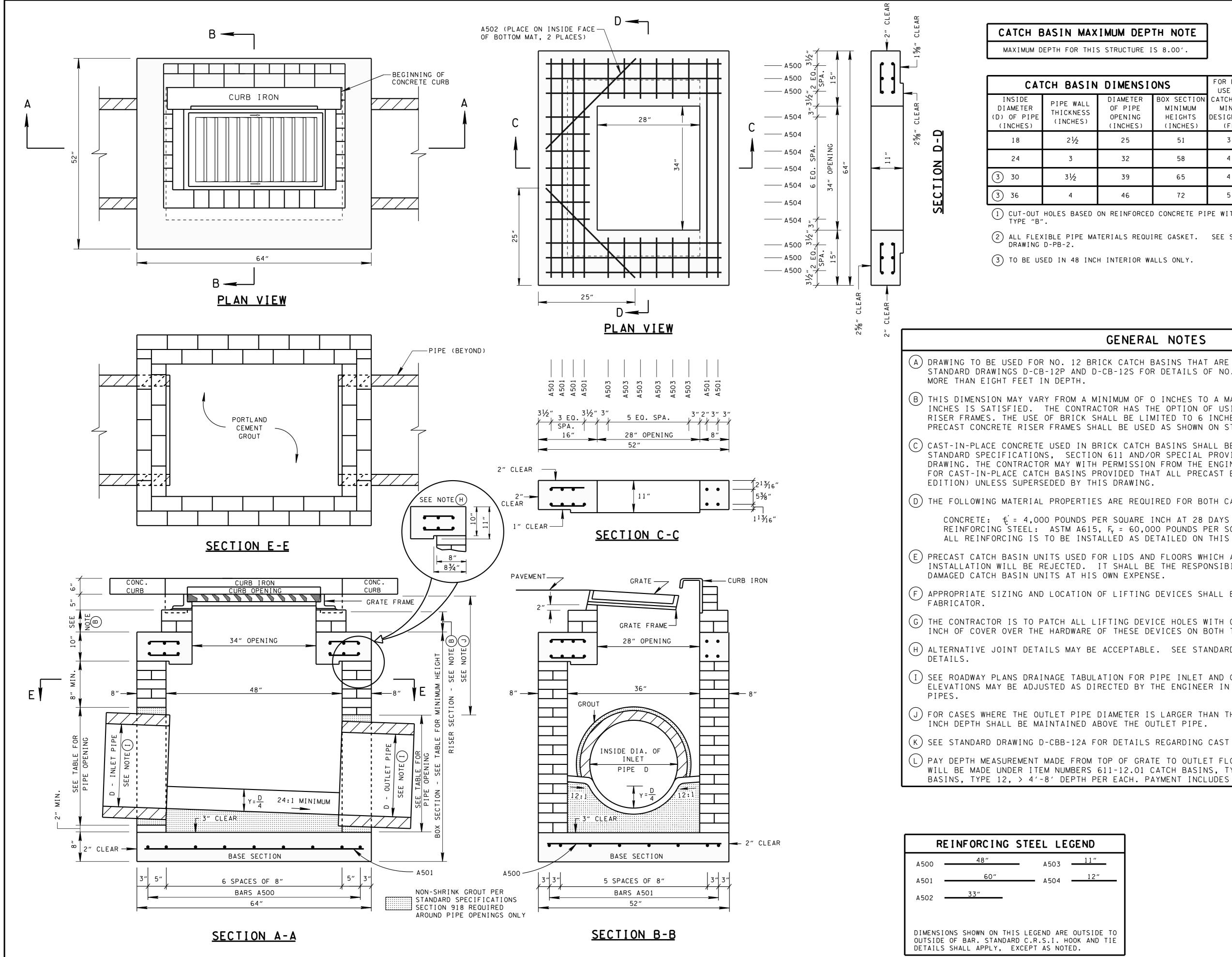
(M) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

(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.

LEGEND		MINOR	REVISION FHWA
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E TO OUTSIDE OF BAR. STANDARD EXCEPT AS NOTED.			
	NOT TO SCALE	9-5-02	D-CB-10SB

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. REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

☑ REV. 3-11-14: ELIMINATED STIRRUPS.



AXI	MUM	DEF	РΤΗ		NOTE	
				~		

HIS	STRUCTURE	ΙS	8.00′

IN	DIMENSI	FOR DESIGN USE ONLY	
L SS	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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 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. 5-27-01: CHANGED PAY ITEM IN GENERAL NOTE (]
- 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- ☑ REV. 3-11-14: ELIMINATED STIRRUPS.

# 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

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

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

(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

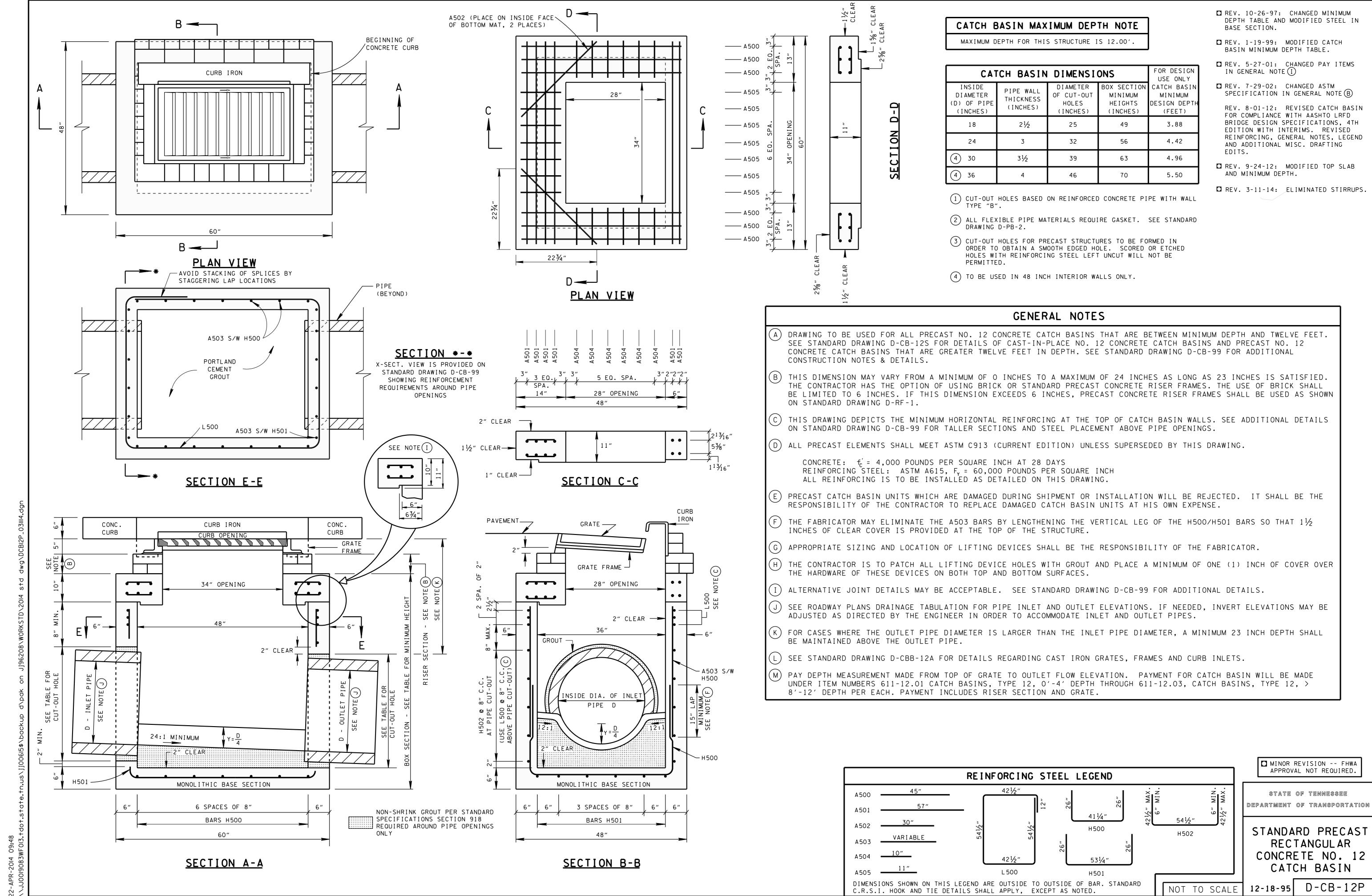
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23

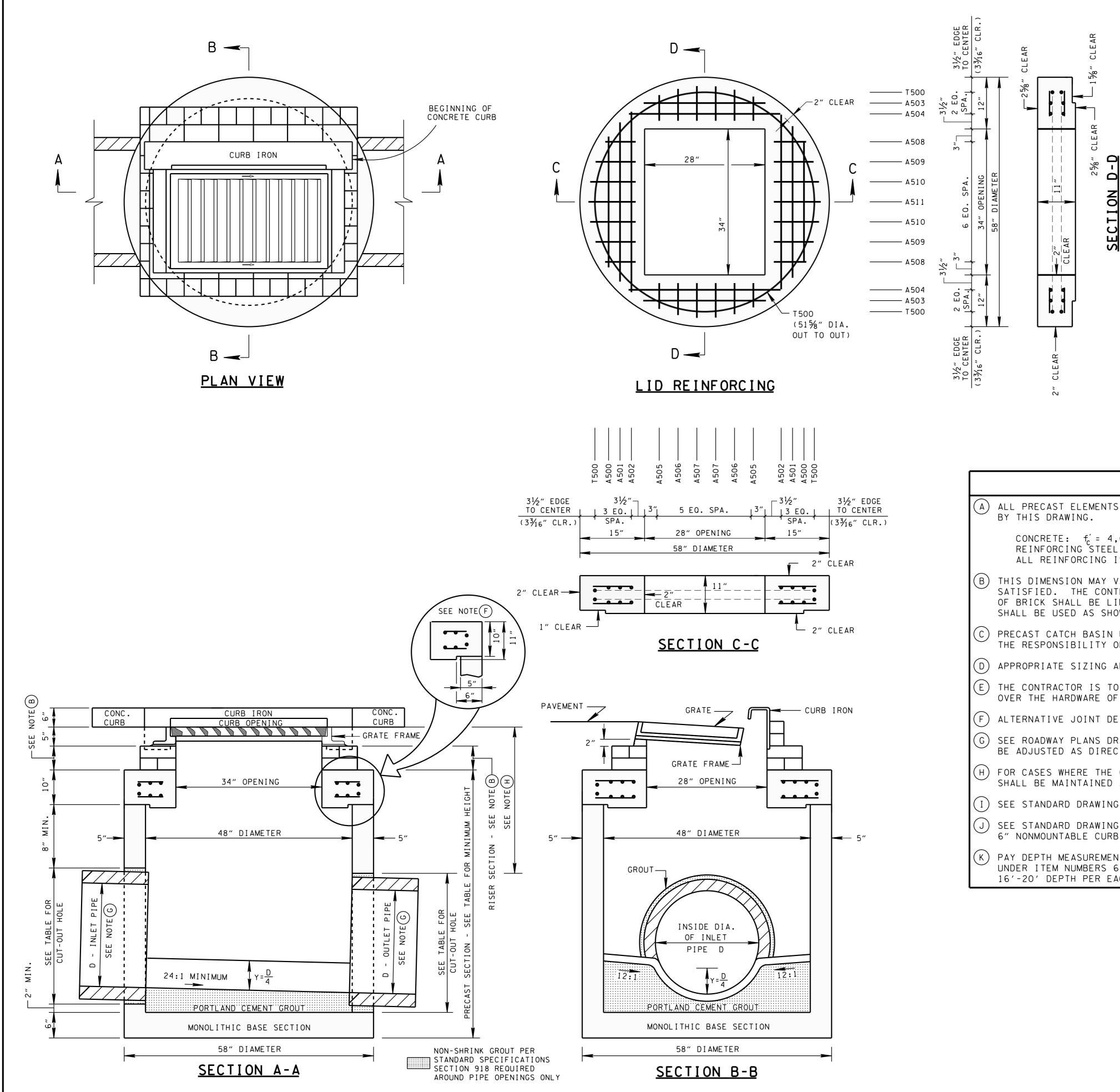
(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

(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.

			MINOR R	EVISION FHWA
ID			APPROVA	L NOT REQUIRED.
1″			STATE	OF TENNESSEE
12″		DE	PARTMENT	OF TRANSPORTATIO
			ST	ANDARD
			RECT	ANGULAR
SIDE TO AND TIE				K NO. 12 H BASIN
	NOT TO SC.	ALE 1	-19-96	D-CB-12B



ASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
WALL (NESS HES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
1/2	25	49	3.88
3	32	56	4.42
1/2	39	63	4.96
4	46	70	5.50



	ALL PRECAST ELEMENTS TO MEET ASTM C478 (CL BY THIS DRAWING.
	CONCRETE: f <sub>c</sub> '= 4,000 POUNDS PER SQUARE REINFORCING STEEL: ASTM A615, F <sub>y</sub> = 60,0 ALL REINFORCING IS TO BE INSTALLED AS D
B	THIS DIMENSION MAY VARY FROM A MINIMUM OF SATISFIED. THE CONTRACTOR HAS THE OPTION OF BRICK SHALL BE LIMITED TO 6 INCHES. IF SHALL BE USED AS SHOWN ON STANDARD DRAWING
C)	PRECAST CATCH BASIN UNITS WHICH ARE DAMAGE THE RESPONSIBILITY OF THE CONTRACTOR TO RE
D	APPROPRIATE SIZING AND LOCATION OF LIFTING
E	THE CONTRACTOR IS TO PATCH ALL LIFTING DEV OVER THE HARDWARE OF THESE DEVICES ON BOTH
F	ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABL
G	SEE ROADWAY PLANS DRAINAGE TABULATION FOR BE ADJUSTED AS DIRECTED BY THE ENGINEER IN
H	FOR CASES WHERE THE OUTLET PIPE DIAMETER I SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.
	SEE STANDARD DRAWING D-CBB-12A FOR DETAILS
J	SEE STANDARD DRAWING D-CB-12RB FOR DETAILS 6" NONMOUNTABLE CURB).
K	PAY DEPTH MEASUREMENT MADE FROM TOP OF GRA UNDER ITEM NUMBERS 611-12.01 CATCH BASINS, 16'-20' DEPTH PER EACH. PAYMENT INCLUES RI

NO

-

C

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S

CATCH	BASIN	MAXIMUM	DEPTH	NOTE
MAXIMUM	DEPTH FO	R THIS STRU	CTURE IS 20	0.00′.

CATCH

INSIDE

DIAMETER

(D) OF PIPE

(INCHES)

18

24

DRAWING D-PB-2.

"В".

CH BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21⁄2	25	49	3.88
3	32	56	4.42

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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.
- **C** 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.
- **D** 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **C** REV. 3-11-14: ELIMINATED STIRRUPS.

# GENERAL NOTES

URRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

INCH AT 28 DAYS 000 POUNDS PER SQUARE INCH DETAILED ON THIS DRAWING.

O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES NG D-RF-1.

GED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

NG DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

EVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER TH TOP AND BOTTOM SURFACES.

BLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

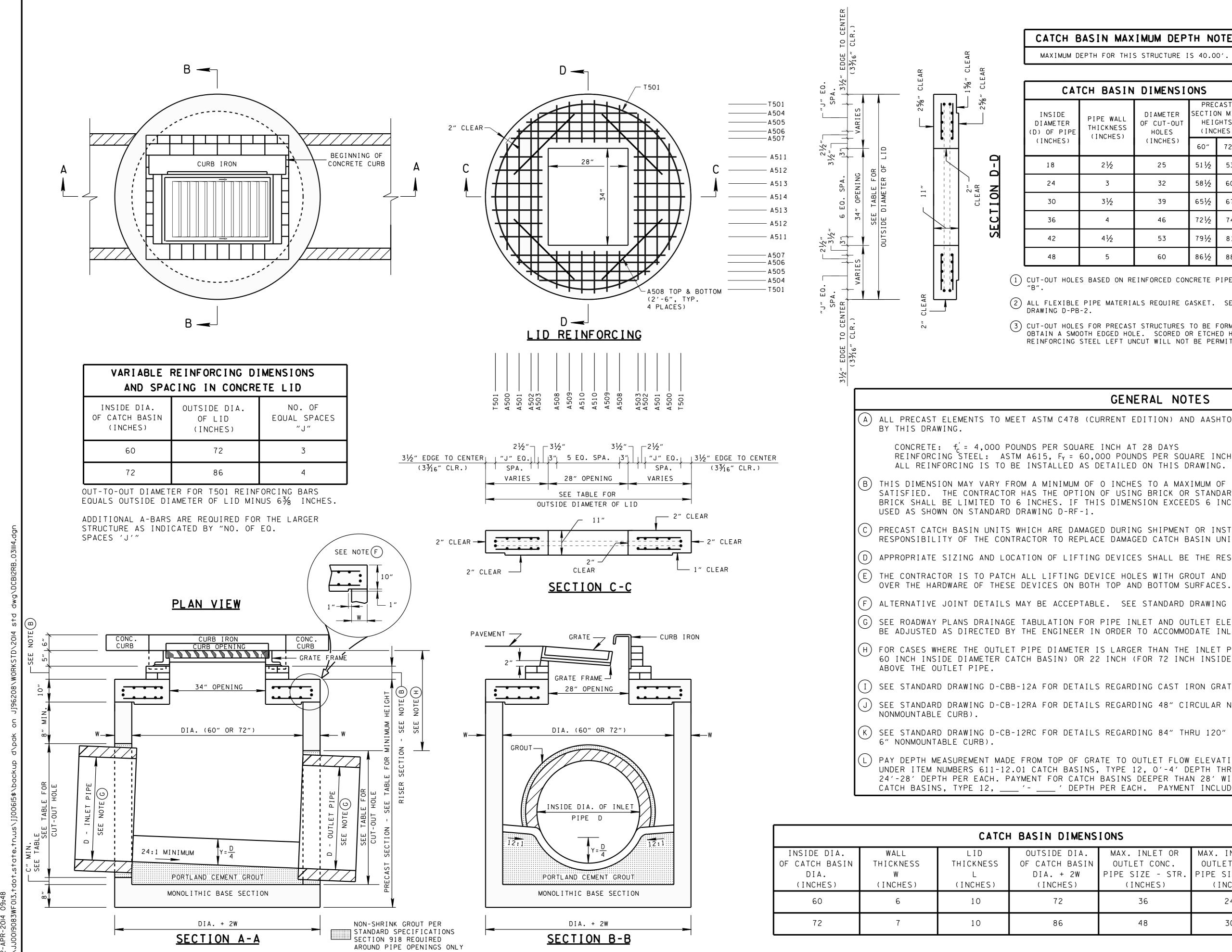
IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH

\_S REGARDING CAST IRON GRATES. FRAMES AND CURB INLETS.

\_S REGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH

RATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE , TYPE 12, O'-4' DEPTH THROUGH 611-12.05 CATCH BASINS, TYPE 12, > RISER SECTION AND GRATE.

	MINOR REVISION FHWA APPROVAL NOT REQUIRED.			
		OF TENNESSEE 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		



I	Ν	MAX	IMUM	DEPT	H NOTE	
1	FOF	тні	S STRUC	TURE IS	40.00′.	

CH BASIN	CH BASIN DIMENSIONS					
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES	OF CUT-OUT HEIGHTS HOLES (INCHES)		CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		
(Inches)	(INCHES)	60″	72″	60"	72"	
21⁄2	25	51 ½	53	3.92	3.97	
3	32	58½	60	4.46	4.51	
31/2	39	65½	67	5.00	5.05	
4	46	72 <sup>1</sup> ⁄2	74	5.55	5.59	
41⁄2	53	79½	81	6.09	6.13	
5	60	86½	88	6.63	6.67	

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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.

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

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

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 23 INCH DEPTH (FOR 60 INCH INSIDE DIAMETER CATCH BASIN) OR 22 INCH (FOR 72 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED

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

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

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

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.

S	IONS			Г
	MAX. INLET OR OUTLET CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION	DI
	PIPE SIZE - STR. (INCHES)	PIPE SIZE - 90° (INCHES)	C (INCHES)	F
	36	24	2.5	
	48	30	3.0	
		NOT	TO SCALE	

- 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 ① 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.

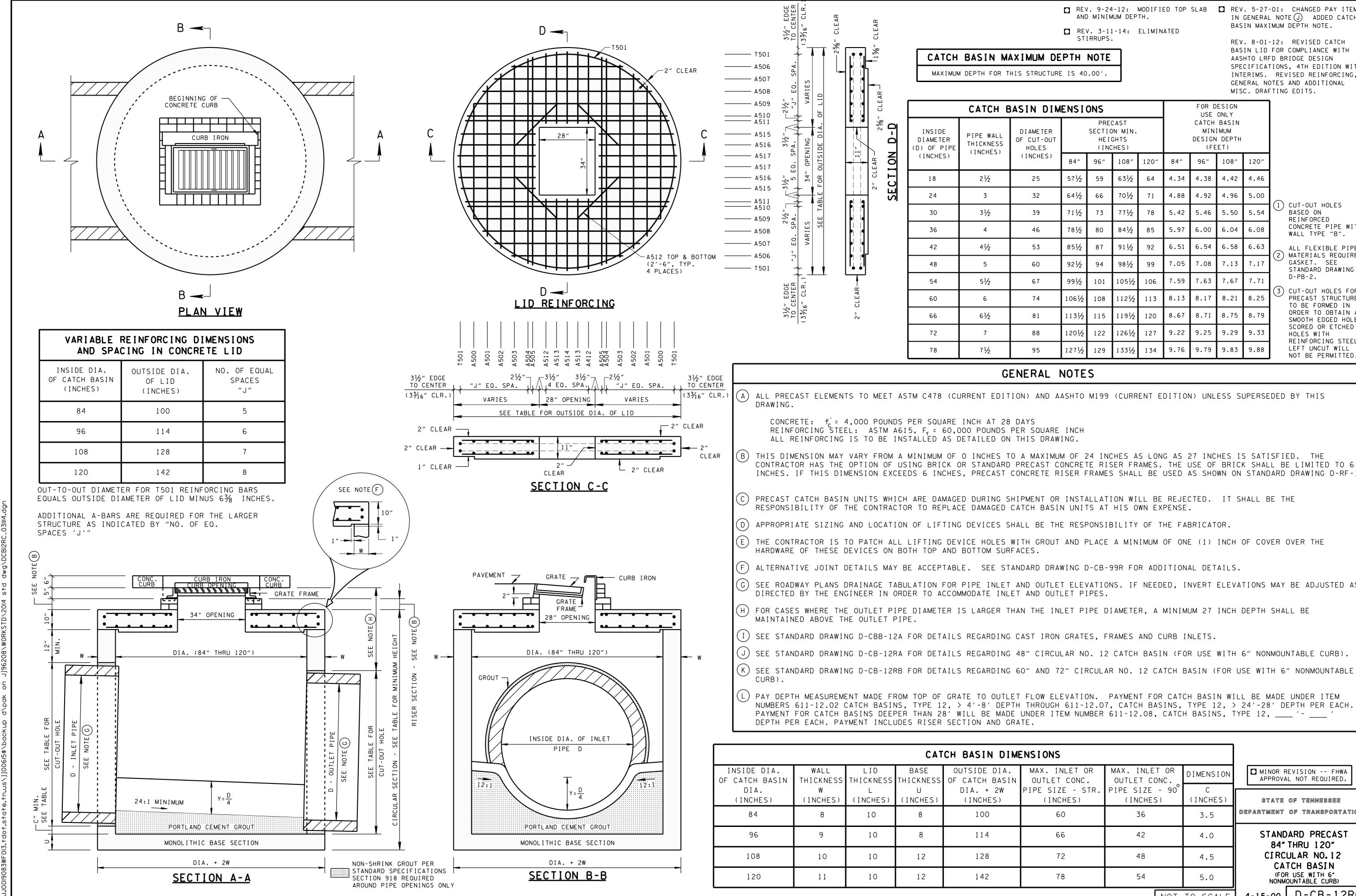
REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

> ☐ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

STAND	ARD PRECAST		
60"	AND 72"		
CIRCI	JLAR NO.12		
CATCH BASIN			
(FOR USE WITH 6"			
NONMOL	JNTABLE CURB)		
2-18-93	D-CB-12RB		



4 09:48

		) MININ	1UM DEP	TH.	ED TOP ATED	SLAB	I N BAS RE V	GENERAL IN MAX	-01: CHANGED PAY ITEMS NOTE J ADDED CATCH IMUM DEPTH NOTE. -12: REVISED CATCH
XIMUM DE	РТН	NOTE					AAS	HTO LRE	FOR COMPLIANCE WITH FD BRIDGE DESIGN
HIS STRUCTURE	E IS 40	.00′.							TIONS, 4TH EDITION WITH REVISED REINFORCING,
									OTES AND ADDITIONAL FTING EDITS.
ASIN DIM	ENSI	ONS					E S I GN ONL Y		
DIAMETER OF CUT-OUT HOLES		SECTIC HEI	CAST )N MIN. GHTS (HES)			MIN DESIGN	BASIN IMUM I DEPTH ET)		
(INCHES)	84″	96″	108″	120″	84″	96″	108″	120″	
25	57½	59	63½	64	4.34	4.38	4.42	4.46	
32	64½	66	70½	71	4.88	4.92	4.96	5.00	
39	71 <sup>1</sup> /2	73	771/2	78	5.42	5.46	5.50	5.54	(1) CUT-OUT HOLES BASED ON REINFORCED
46	78½	80	84½	85	5.97	6.00	6.04	6.08	CONCRETE PIPE WITH WALL TYPE "B".
53	85½	87	91 <sup>1</sup> ⁄2	92	6.51	6.54	6.58	6.63	ALL FLEXIBLE PIPE
60	92 <sup>1</sup> ⁄2	94	98½	99	7.05	7.08	7.13	7.17	GASKET. SEE STANDARD DRAWING
67	99 <sup>1</sup> ⁄2	101	105½	106	7.59	7.63	7.67	7.71	D-PB-2.
74	106½	108	1121/2	113	8.13	8.17	8.21	8.25	(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN
81	113½	115	119½	120	8.67	8.71	8.75	8.79	ORDER TO OBTAIN A SMOOTH EDGED HOLE.
88	120½	122	126½	127	9.22	9.25	9.29	9.33	SCORED OR ETCHED HOLES WITH

#### GENERAL NOTES

127<sup>1</sup>/<sub>2</sub>

129

133½

134

95

9.76

9.79

9.83

9.88

REINFORCING STEEL LEFT UNCUT WILL

NOT BE PERMITTED.

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

C) PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE

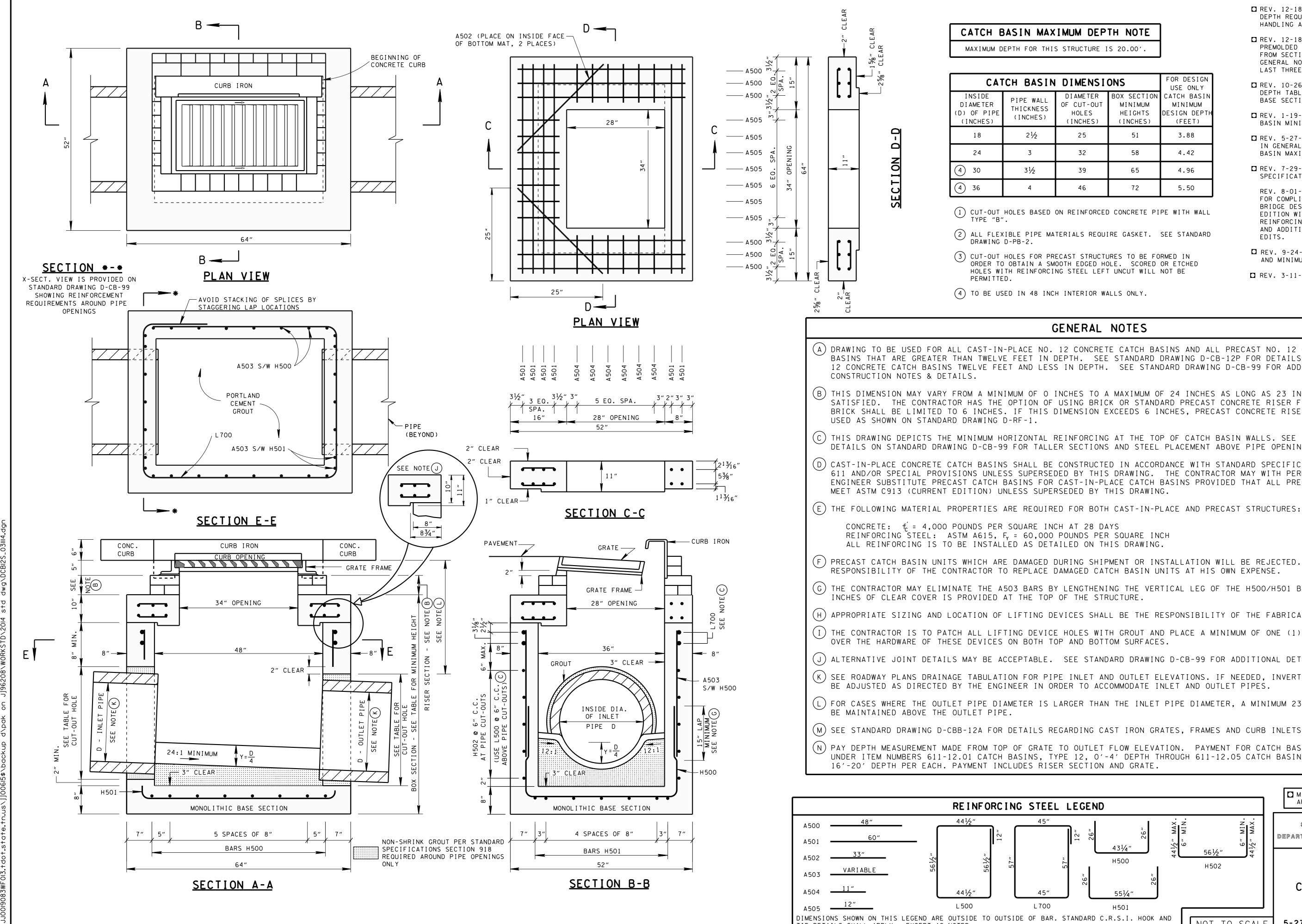
THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE

G SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS

(J) SEE STANDARD DRAWING D-CB-12RA FOR DETAILS REGARDING 48" 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, \_\_\_\_ '- \_\_\_\_

ME	ENSIONS			
١	MAX. INLET OR OUTLET CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
	PIPE SIZE - STR. (INCHES)	PIPE SIZE - 90 (INCHES)	C (INCHES)	STATE OF TENNESSEE
	60	36	3.5	DEPARTMENT OF TRANSPORTATION
	66	42	4.0	STANDARD PRECAST 84" THRU 120"
	72	48	4.5	CIRCULAR NO. 12 CATCH BASIN
	78	54	5.0	(FOR USE WITH 6" NONMOUNTABLE CURB)
		NOT	TO SCALE	4-15-00 D-CB-12RC



)IMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BA TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

#### CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

ΙN	DIMENSI	ONS	FOR DESIGN USE ONLY
L SS )	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

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

GENERAL NOTES

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

(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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

(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 11/2

(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

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

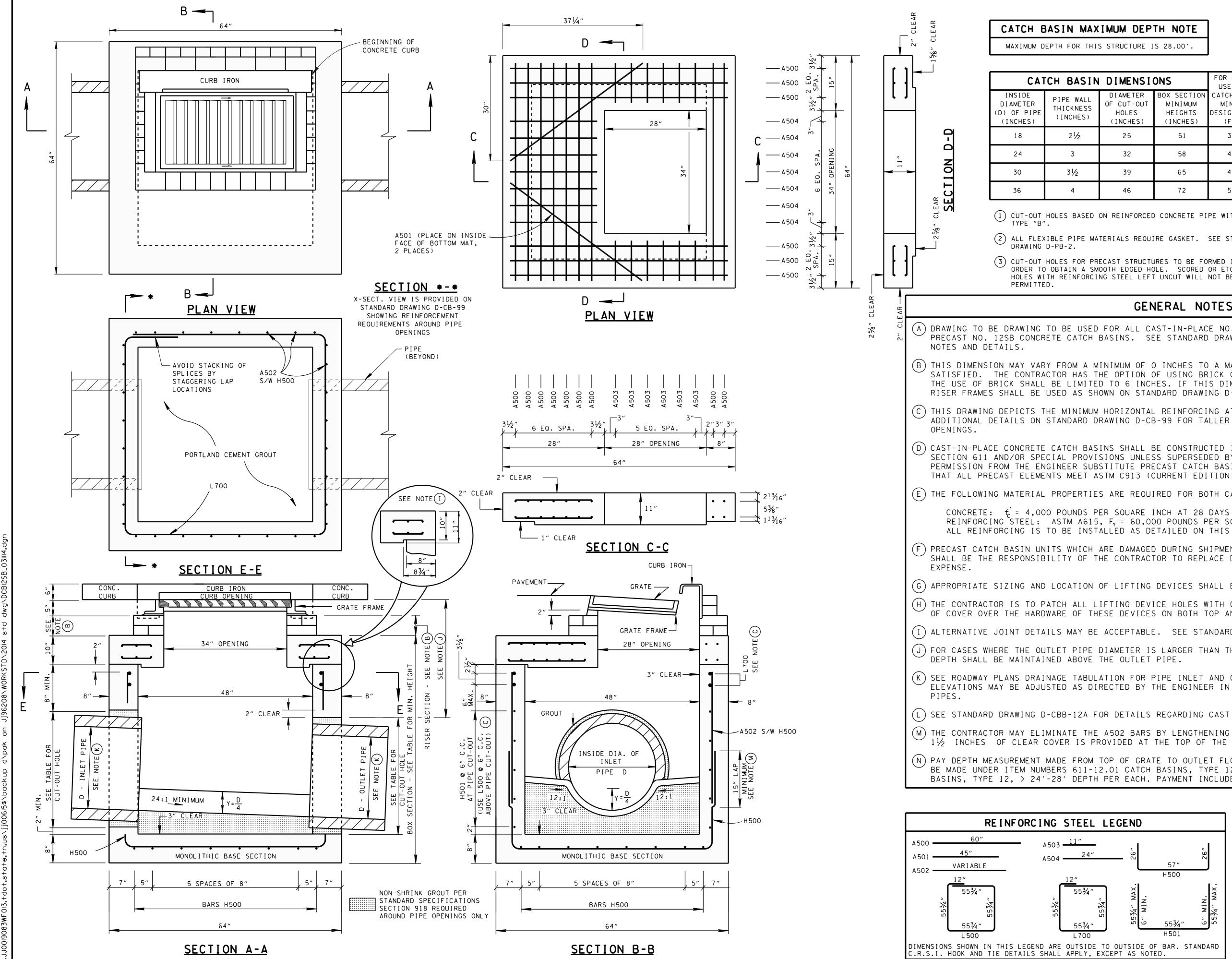
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL

(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, >

			EVISION FHWA
EL LEGEND		APPROVA	_ NOT REQUIRED.
	6 MIN. 6 MIN. 201/2 MAX.	STATE Department	OF TENNESSEE OF TRANSPORTATION
۳ <sup>4374</sup> ۲55 <sup>1</sup> /4"	56 <sup>1</sup> ⁄2" 4	REC CONCI	ANDARD TANGULAR RETE NO.12 CH BASIN
0 н501		CAI	CH DASIN
AR. STANDARD C.R.S.I. HOOK AND	NOT TO SCALE	5-27-95	D-CB-12S



## CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'

SIN	DIMENSI	FOR DESIGN USE ONLY	
LL SS S)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

# GENERAL NOTES

- □ 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 () 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

(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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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:

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

(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 23 INCH

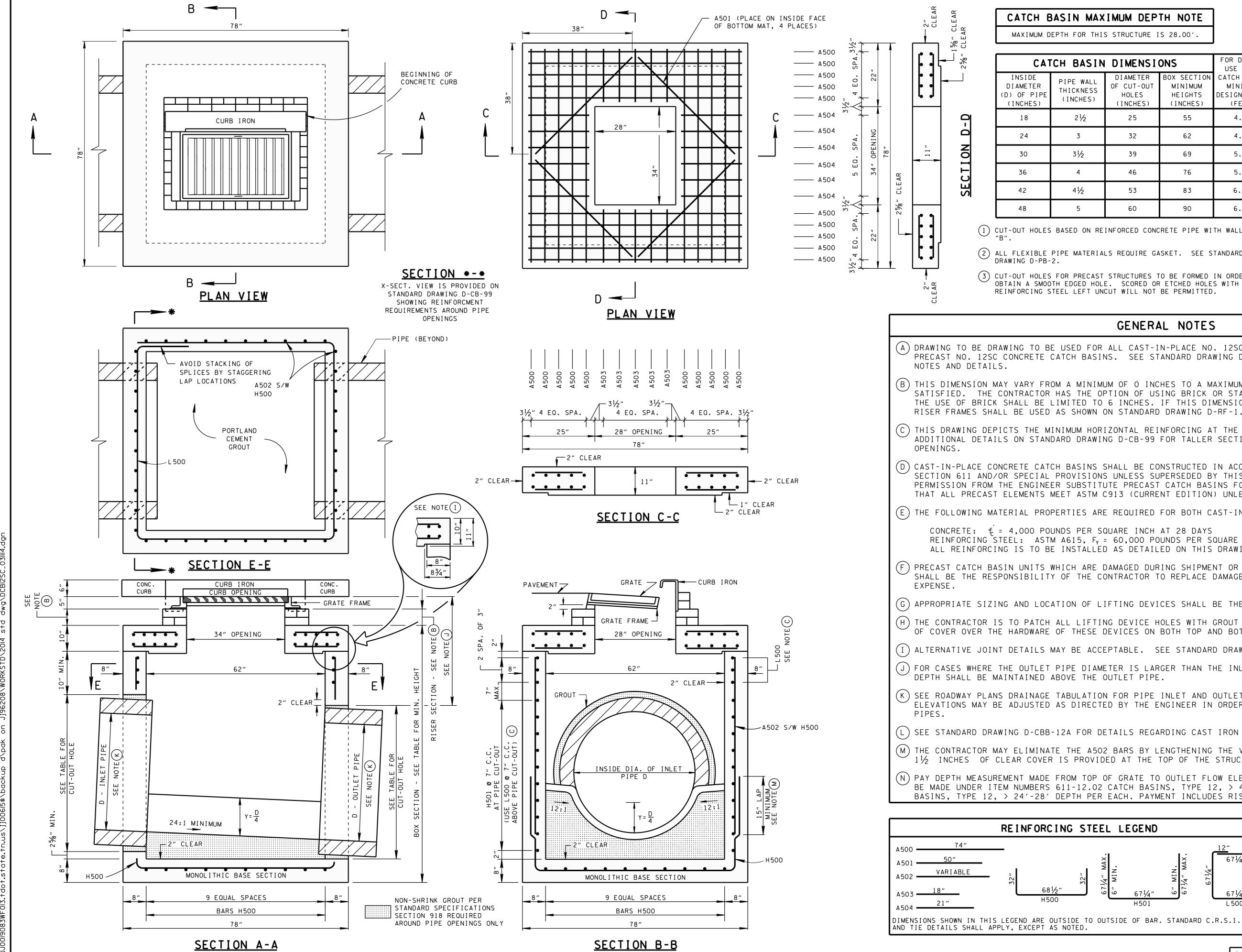
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(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  $1\frac{1}{2}$  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.

EL LEGEND	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
4″ <sup>°</sup> <sup>9</sup> <sup>0</sup> 57″ H500	STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
25 <sup>3</sup> / <sub>4</sub> " " <sup>2</sup> <sup>25</sup> <sup>3</sup> / <sub>4</sub> " " <sup>2</sup>	STANDARD 4' X 4' SOUARE CONCRETE NO.12 CATCH BASIN
DE TO OUTSIDE OF BAR. STANDARD (, EXCEPT AS NOTED.	NOT TO SCALE 9-5-97 D-CB-12SB



N	IXAN	MUM	DEF	PTH	H NOTE	
R	THIS	STRUC	TURE	ΙS	28.00′.	

BASIN	DIMENSI	FOR DESIGN USE ONLY	
WALL KNESS CHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21/2	25	55	4.13
3	32	62	4.67
1⁄2	39	69	5.22
4	46	76	5.76
1/2	53	83	6.30
5	60	90	6.84

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

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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. 12SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 12SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

(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

(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:

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

(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

(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

(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 1<sup>1</sup>/<sub>2</sub> 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.

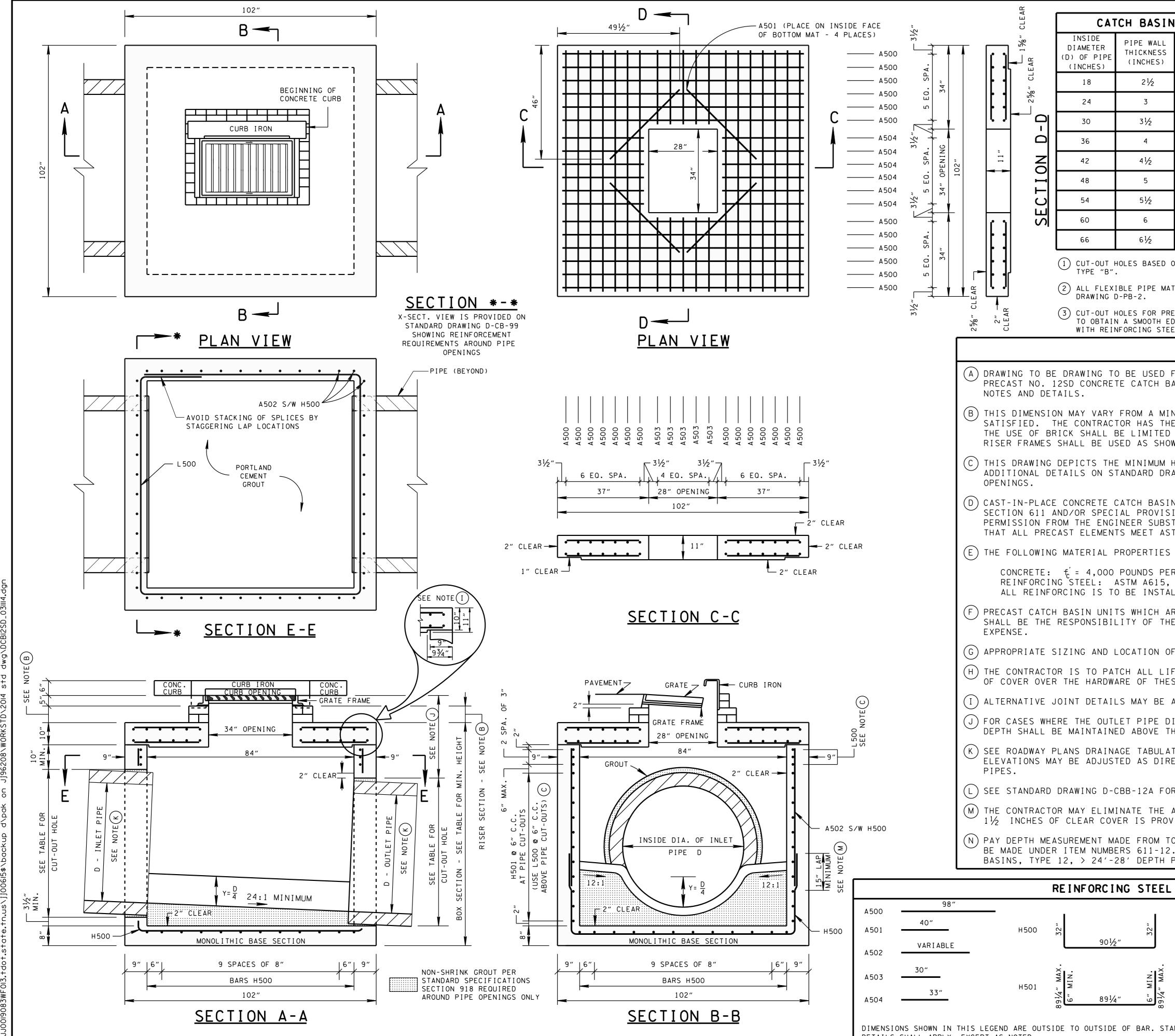
STEEL LEGEND	MINOR REVISION FHWA APPROVAL NOT REQUIRED.	
32" J4" MAX. MIN. J4" MAX. 67 J4" 67 J4"	STATE OF TENNESSEE Department of transportatio	N
"5" "67 <u>1/4</u> " "9 H501 L500	STANDARD 5'2" X 5'2" SOUARE	-
TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK D.	CONCRETE NO.12 CATCH BASIN	
NOT TO	D SCALE 9-5-97 D-CB-1250	2

- □ 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.

**D** REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

□ REV. 3-11-14: ELIMINATED STIRRUPS.



DETAILS SHALL APPLY, EXCEPT AS NOTED.

N	DIMENSI	ONS	FOR DESIGN USE ONLY
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	55½	4.17
	32	621⁄2	4.72
	39	69½	5.26
	46	76 <sup>1</sup> ⁄2	5.80
	53	831/2	6.34
	60	90 <sup>1</sup> ⁄2	6.88
	67	971⁄2	7.42
	74	1041⁄2	7.97
	81	1111/2	8.51

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

- ☐ REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
- □ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE □ 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.

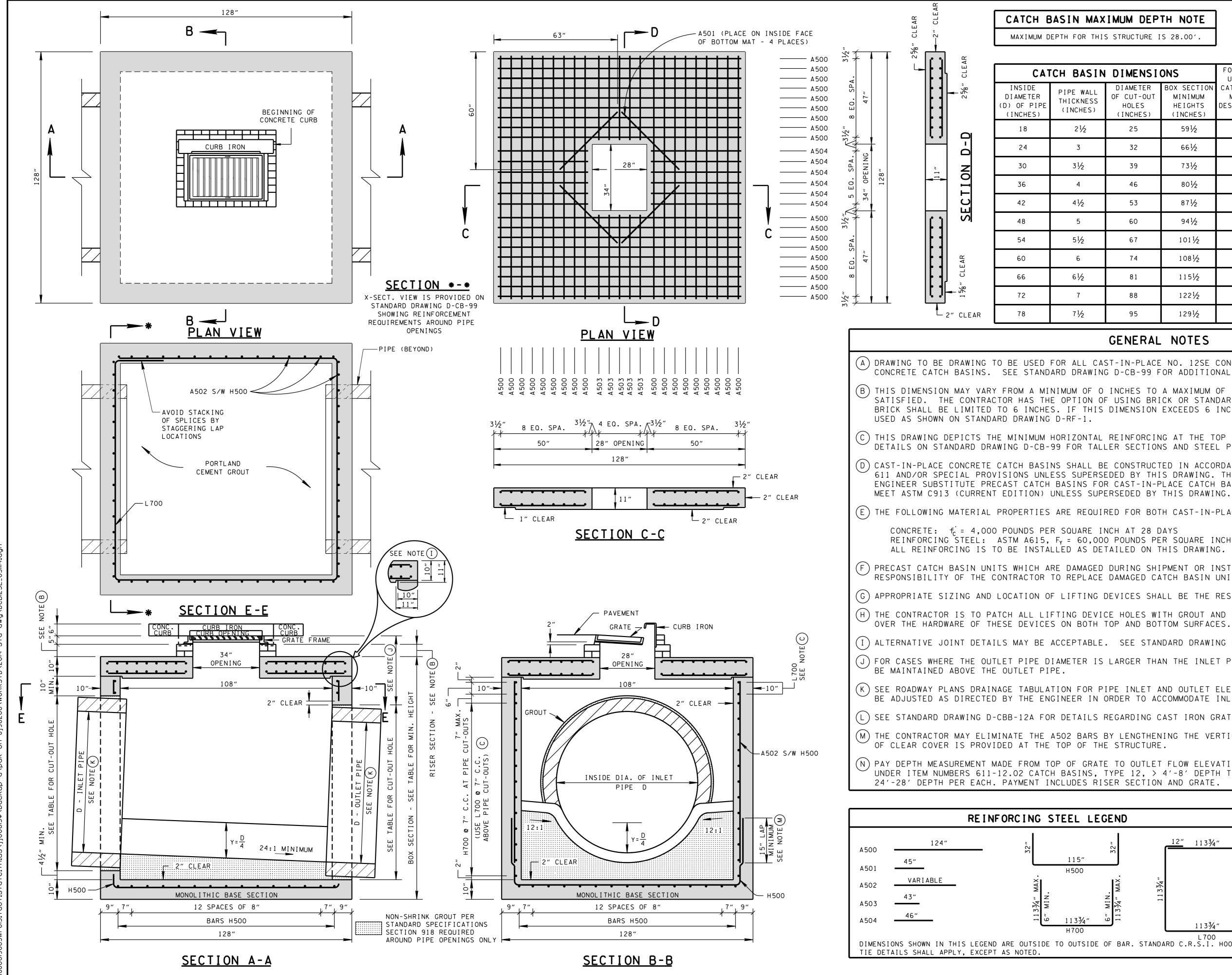
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

#### CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'.

12" 89¼"	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
OP OF GRATE TO OUTLET FLOW ELEVATION. PAYME .02 CATCH BASINS, TYPE 12, > 4'-8' DEPTH THR PER EACH. PAYMENT INCLUDES RISER SECTION AND	OUGH 611-12.07 CATCH
R DETAILS REGARDING CAST IRON GRATES, FRAMES A502 BARS BY LENGTHENING THE VERTICAL LEG OF /IDED AT THE TOP OF THE STRUCTURE.	
TION FOR PIPE INLET AND OUTLET ELEVATIONS. I ECTED BY THE ENGINEER IN ORDER TO ACCOMMODAT	· · · ·
IAMETER IS LARGER THAN THE INLET PIPE DIAMET HE OUTLET PIPE.	
SE DEVICES ON BOTH TOP AND BOTTOM SURFACES. ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FO	R ADDITIONAL DETAILS
F LIFTING DEVICES SHALL BE THE RESPONSIBILIT FTING DEVICE HOLES WITH GROUT AND PLACE A MI	
E CONTRACTOR TO REPLACE DAMAGED CATCH BASIN	UNITS AT HIS OWN
R SQUARE INCH AT 28 DAYS F <sub>y</sub> = 60,000 POUNDS PER SQUARE INCH LLED AS DETAILED ON THIS DRAWING. RE DAMAGED DURING SHIPMENT OR INSTALLATION W	
ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRE	CAST STRUCTURES:
NS SHALL BE CONSTRUCTED IN ACCORDANCE WITH S IONS UNLESS SUPERSEDED BY THIS DRAWING. THE TITUTE PRECAST CATCH BASINS FOR CAST-IN-PLAC TM C913 (CURRENT EDITION) UNLESS SUPERSEDED	CONTRACTOR MAY WITH E CATCH BASINS PROVIDED
HORIZONTAL REINFORCING AT THE TOP OF CATCH B AWING D-CB-99 FOR TALLER SECTIONS AND STEEL	
NIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES E OPTION OF USING BRICK OR STANDARD PRECAST TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 IN WN ON STANDARD DRAWING D-RF-1.	CONCRETE RISER FRAMES.
FOR ALL CAST-IN-PLACE NO. 12SD CONCRETE CATC ASINS. SEE STANDARD DRAWING D-CB-99 FOR ADD	



			l		REV. 9-11-02: CHANGED REINFORCING STEE IN BASE SECTION.
	IMUM DEP				REV. 2-13-04: CHANGED REINFORCING STEE IN BASE SECTION.
N	DIMENSI	ONS	FOR DESIGN USE ONLY		REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.
-	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL
	25	59½	4.25		NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
	32	66 <sup>1</sup> ⁄2	4.79		REV. 3-11-14: ELIMINATED STIRRUPS.
	39	731/2	5.33		
	46	80 <sup>1</sup> ⁄2	5.88		
	53	87 <sup>1</sup> /2	6.42		
	60	94 <sup>1</sup> ⁄2	6.96	(1	
	67	1011/2	7.50	6	CONCRETE PIPE WITH WALL TYPE "B".
	74	108 <sup>1</sup> /2	8.04	(2	) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
	81	115½	8.58	3	) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A
	88	1221/2	9.13		SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.
	95	1291⁄2	9.67		SNOOT WILL NOT DE LENWITTED.

## 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 O 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

(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

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

(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

(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

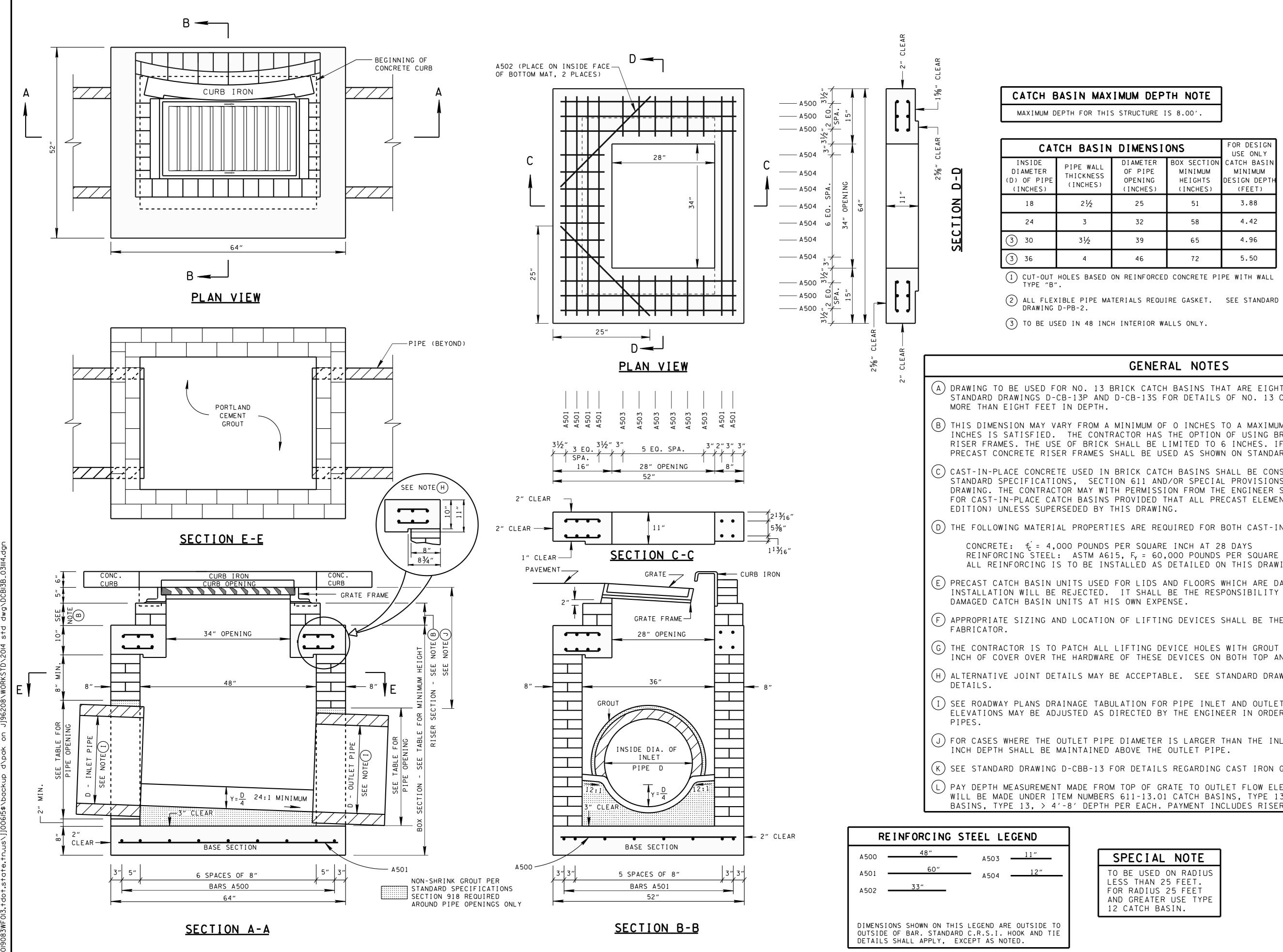
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(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  $1\frac{1}{2}$  INCHES

(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, >

EGEND			
ž <u>12" 113¾</u> "			REVISION FHWA Al not required.
MAX. 33/4" 33/4"		STATE Department	OF TENNESSEE OF TRANSPORTATION
₩IN <sup>11</sup> <sup>113</sup> <sup>3</sup> / <sub>4</sub> "			ANDARD 9′ SQUARE
L 700 E OF BAR. STANDARD C.R.S.I. HOOK AN	ND		ETE NO. 12 Ch BASIN
	NOT TO SCALE	1-19-99	D-CB-12SE



IXAN	MUM	DEF	PTH	H NC	DTE
THIS	STRUC	TURE	ΙS	8.00	' <b>.</b>

SIN	DIMENSI	FOR DESIGN USE ONLY	
ALL ESS S)	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

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

- □ REV. 12-18-96: MODIFIED DRAWING NO. D-CB-12B BY CHANGING CURB IRON.
- **C** 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.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 (]
- 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

# 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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,  $F_r = 60,000$  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

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

(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

(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

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23

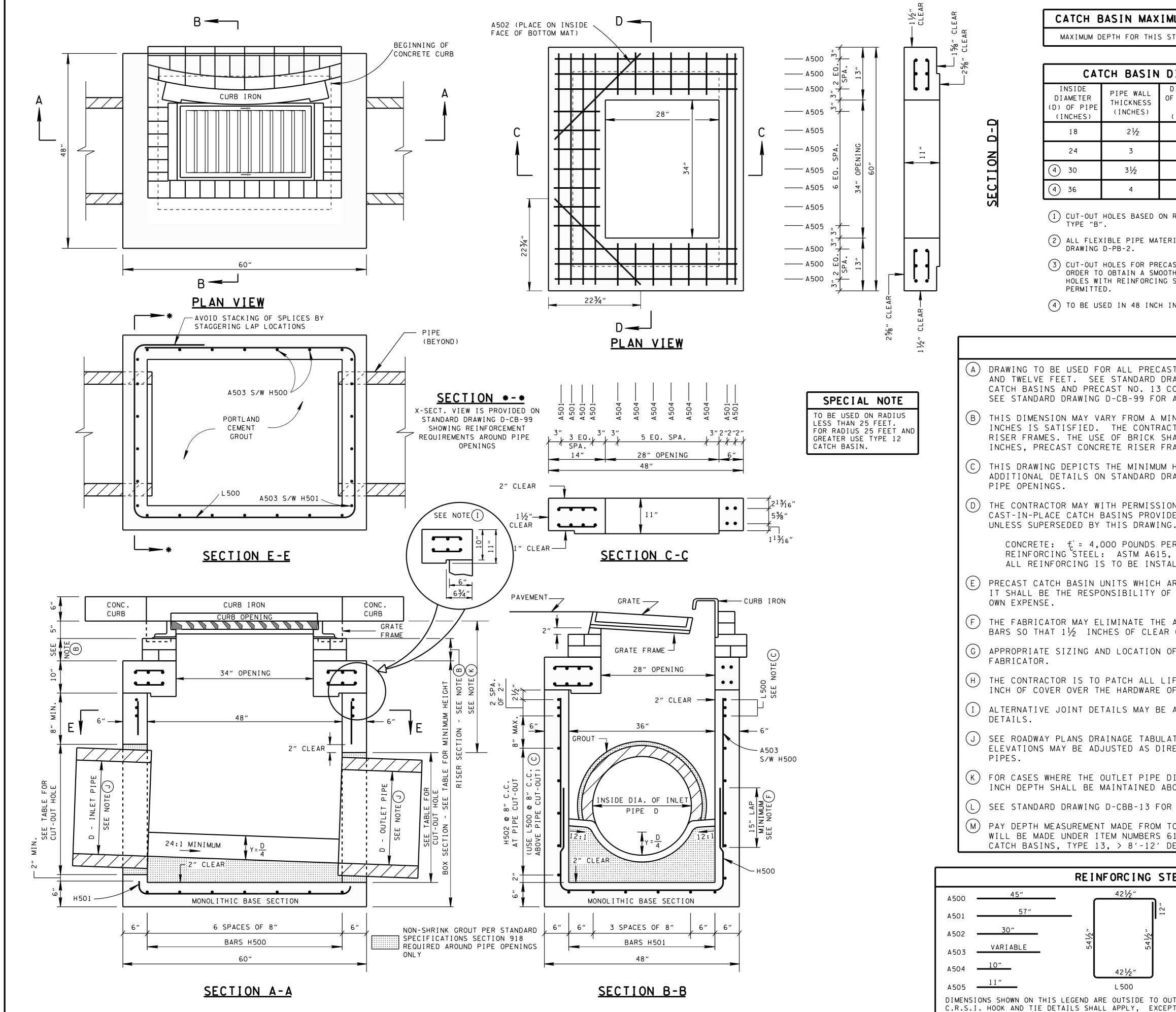
(K) SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

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.

	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	

MINOR REVISION -- FHWA

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 12.00'

BASIN	FOR DESIGN USE ONLY		
PE WALL ICKNESS NCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2 <sup>1</sup> /2	25	49	3.88
3	32	56	4.42
31/2	39	63	4.96
4	46	70	5.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

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

- **C** 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 (G) 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.
- **D** REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (]
- 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS

#### GENERAL NOTES

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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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.

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

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)

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

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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE

(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

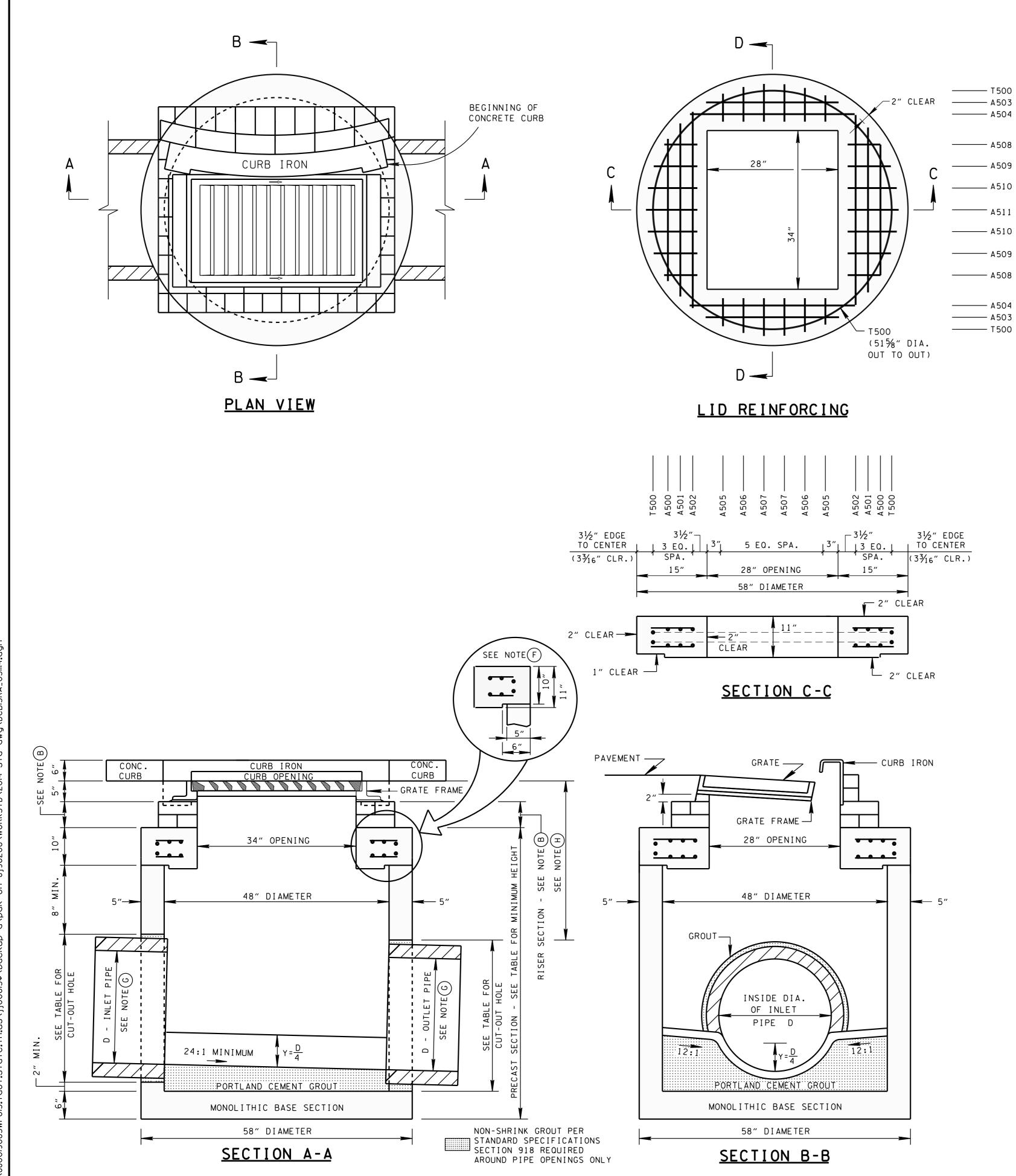
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(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-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

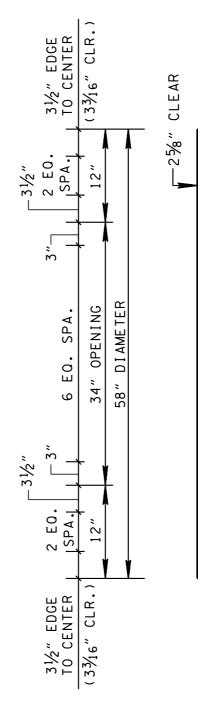
M PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-13.01 CATCH BASINS, TYPE 13, 0'-4' DEPTH THROUGH 611-13.03, CATCH BASINS, TYPE 13, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

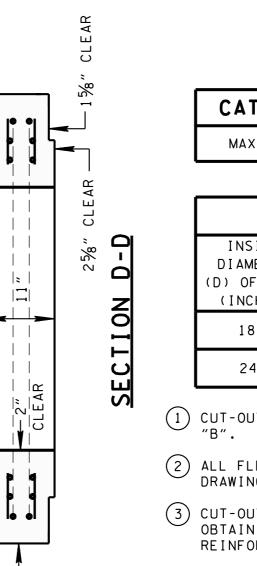
NG STEEL LEGEND		MINOR REVISION FHWA APPROVAL NOT REQUIRED.
12" 26" 26" 26" 26"	6 ″ MIN. 6 ″ MIN. 21∕2 ″ MAX.	STATE OF TENNESSEE Department of transportation
H500 <sup>1</sup> / <sub>2</sub> <sup>1</sup> / <sub>2</sub>	54½″ ♥ H502	STANDARD PRECAST RECTANGULAR CONCRETE NO. 13 CATCH BASIN
E TO OUTSIDE OF BAR. STANDARD EXCEPT AS NOTED.	NOT TO SCALE	12-18-96 D-CB-13P



9:48 013

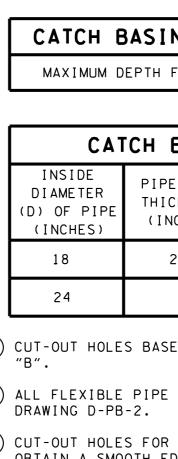
A	ALL PRECAST ELEMENTS TO MEET ASTM C478 (CUP By This Drawing.
	CONCRETE: f <sub>c</sub> '= 4,000 POUNDS PER SQUARE REINFORCING STEEL: ASTM A615, F <sub>y</sub> = 60,00 ALL REINFORCING IS TO BE INSTALLED AS DE
B	THIS DIMENSION MAY VARY FROM A MINIMUM OF O SATISFIED. THE CONTRACTOR HAS THE OPTION O BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS USED AS SHOWN ON STANDARD DRAWING D-RF-1.
0	PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED RESPONSIBILITY OF THE CONTRACTOR TO REPLACE
	APPROPRIATE SIZING AND LOCATION OF LIFTING
E	THE CONTRACTOR IS TO PATCH ALL LIFTING DEV OVER THE HARDWARE OF THESE DEVICES ON BOTH
F	ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE
G	SEE ROADWAY PLANS DRAINAGE TABULATION FOR F BE ADJUSTED AS DIRECTED BY THE ENGINEER IN
H	FOR CASES WHERE THE OUTLET PIPE DIAMETER IS BE MAINTAINED ABOVE THE OUTLET PIPE.
	SEE STANDARD DRAWING D-CBB-13 FOR DETAILS F
U	SEE STANDARD DRAWING D-CB-13RB FOR DETAILS 6" NONMOUNTABLE CURB).
К	PAY DEPTH MEASUREMENT MADE FROM TOP OF GRAUNDER ITEM NUMBERS 611-13.01 CATCH BASINS, 16'-20' DEPTH PER EACH. PAYMENT INCLUDES R





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N MAXIMUM DEPTH NO	TE
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MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

BASIN	FOR DESIGN USE ONLY		
E WALL CKNESS NCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2 <sup>1</sup> /2	25	49	3.88
3	32	56	4.42

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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.
- **D** 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

#### GENERAL NOTES

IRRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

INCH AT 28 DAYS DOO POUNDS PER SQUARE INCH DETAILED ON THIS DRAWING.

O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF IS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE

ED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE CE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

/ICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER TOP AND BOTTOM SURFACES.

LE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY I ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

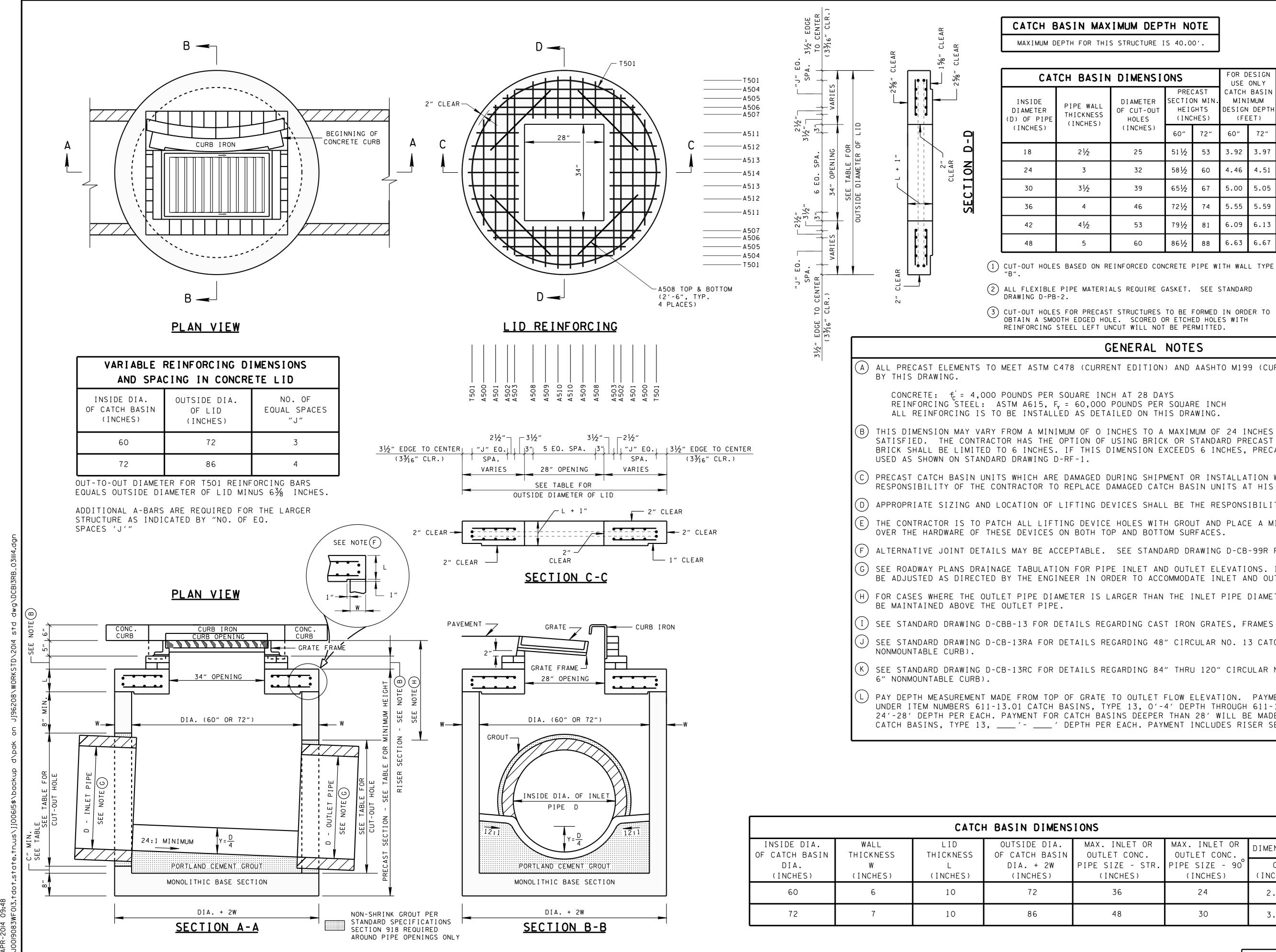
IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL

REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

REGARDING 60" AND LARGER CIRCULAR NO. 13 CATCH BASIN (FOR USE WITH

ATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE TYPE 13, O'-4' DEPTH THROUGH 611-13.05 CATCH BASINS, TYPE 13, > RISER SECTION AND GRATE.

			REVISION FHWA Al not required.
SPECIAL NOTE		STATE Department	OF TENNESSEE OF TRANSPORTATION
TO BE USED ON RADIUS LESS THAN 25 FEET. FOR RADIUS 25 FEET AND GREATER USE TYPE 12 CATCH BASIN.		48" CI RC	ARD PRECAST CULAR NO.13 CH BASIN
			USE WITH 6" UNTABLE CURB)
Ν	OT TO SCALE	1-19-00	D-CB-13RA



# CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

SIN	DIMENSI		ESIGN ONLY		
ALL ESS ES)	DIAMETER OF CUT-OUT HOLES	PRECAST SECTION MIN. HEIGHTS (INCHES)		MIN: DESIGN	BASIN IMUM DEPTH ET)
207	(INCHES)	60″	72″	60"	72″
	25	51 <sup>1</sup> ⁄2	53	3.92	3.97
	32	58½	60	4.46	4.51
	39	65½	67	5.00	5.05
	46	72 <sup>1</sup> /2	74	5.55	5.59
	53	79½	81	6.09	6.13
	60	86½	88	6.63	6.67

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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.

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

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

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

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 23 INCH DEPTH SHALL

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"

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

(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, 

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

4-15-00 D-CB-13RB

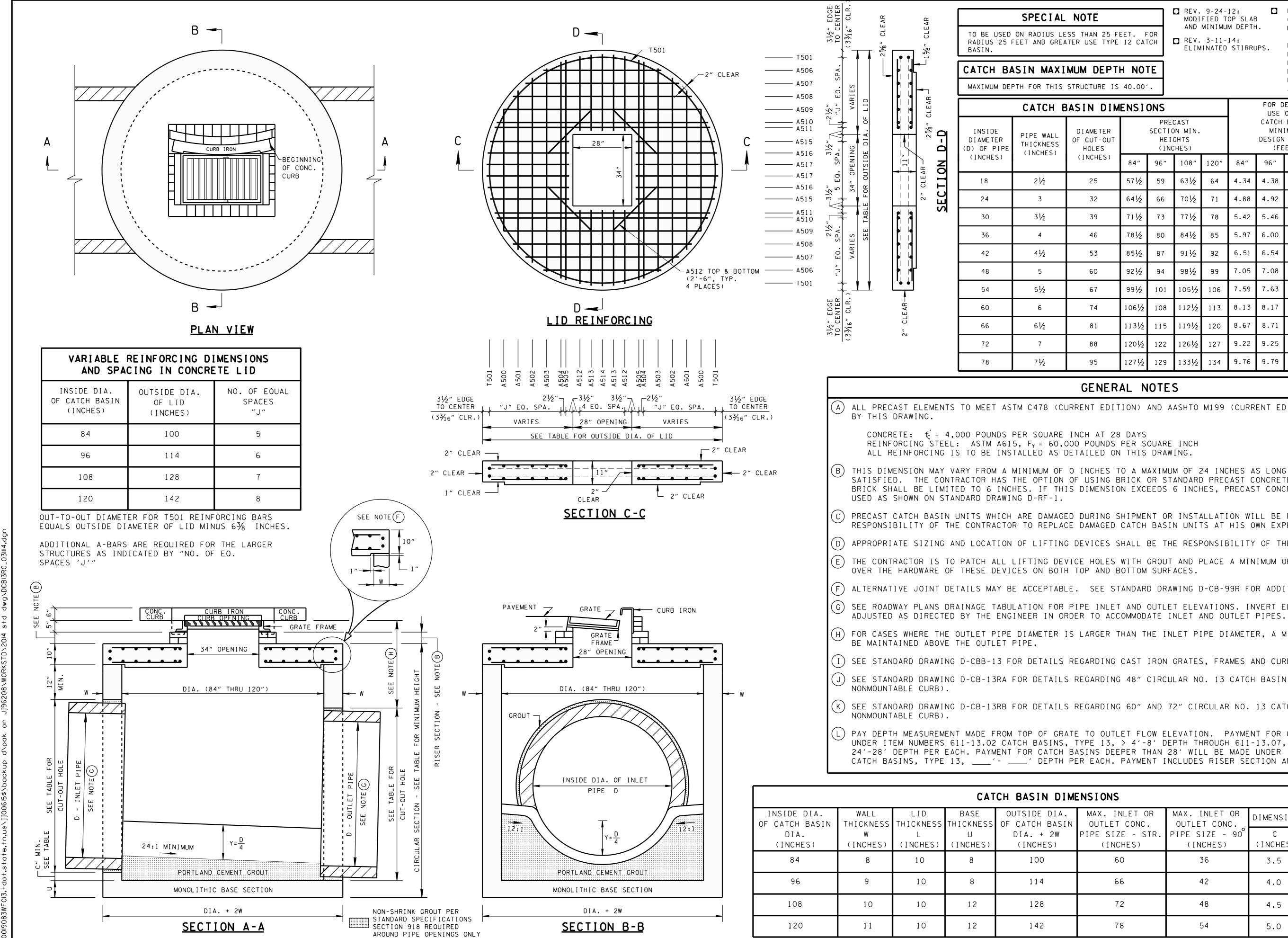
NS		
MAX. INLET OR OUTLET CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION
PE SIZE - STR. (INCHES)	PIPE SIZE - 90° (INCHES)	C (INCHES)
36	24	2.5
48	30	3.0

NOT TO SCALE

- **C** 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.



**ع:**48 013

NOTE
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# **REV.** 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

**REV.** 3-11-14: ELIMINATED STIRRUPS

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.

BASIN DIM	ENSI	ONS					ESIGN ONLY		
DIAMETER OF CUT-OUT HOLES	PRECAST SECTION MIN. HEIGHTS (INCHES)			SECTION MIN. MINIMUM THEIGHTS DESIGN DEPTH					
(INCHES)	84″	96″	108″	120″	84″	96″	108″	120″	
25	57½	59	63½	64	4.34	4.38	4.42	4.46	
32	64½	66	70½	71	4.88	4.92	4.96	5.00	
39	71 <sup>1</sup> /2	73	77 <sup>1</sup> ⁄2	78	5.42	5.46	5.50	5.54	(1) CUT-OUT HOLES BASED ON REINFORCED
46	78½	80	84½	85	5.97	6.00	6.04	6.08	CONCRETE PIPE WITH WALL TYPE "B".
53	85½	87	91 <sup>1</sup> ⁄2	92	6.51	6.54	6.58	6.63	ALL FLEXIBLE PIPE
60	92 <sup>1</sup> ⁄2	94	98½	99	7.05	7.08	7.13	7.17	GASKET. SEE STANDARD DRAWING
67	99 <sup>1</sup> ⁄2	101	105½	106	7.59	7.63	7.67	7.71	D-PB-2.
74	106½	108	112 <sup>1</sup> ⁄2	113	8.13	8.17	8.21	8.25	(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN
81	113½	115	119½	120	8.67	8.71	8.75	8.79	ORDER TO OBTAIN A SMOOTH EDGED HOLE.
88	120½	122	126½	127	9.22	9.25	9.29	9.33	SCORED OR ETCHED HOLES WITH REINFORCING STEEL
95	127½	129	133½	134	9.76	9.79	9.83	9.88	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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

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.

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

(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

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

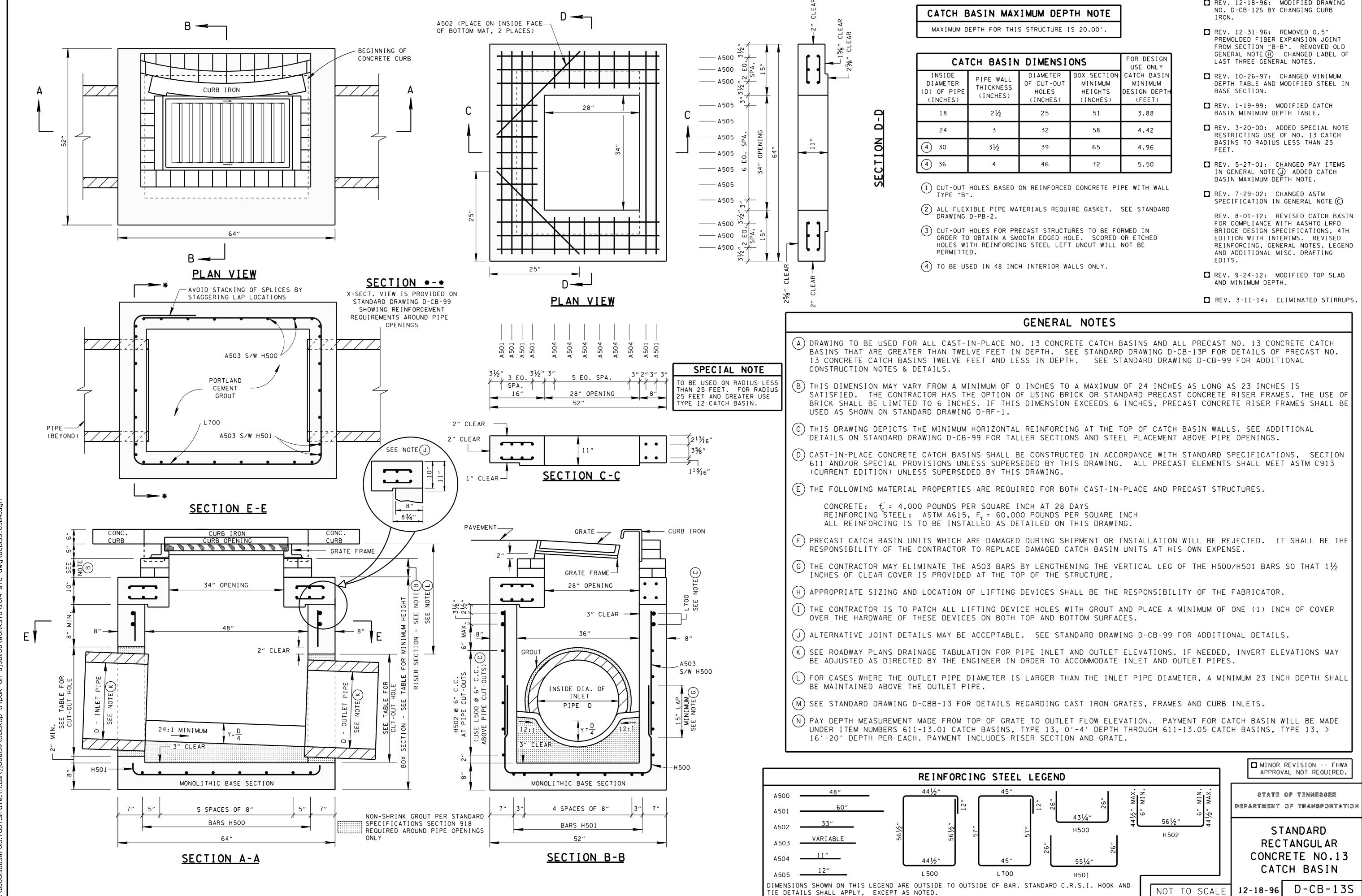
SEE STANDARD DRAWING D-CBB-13 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

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

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

(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.

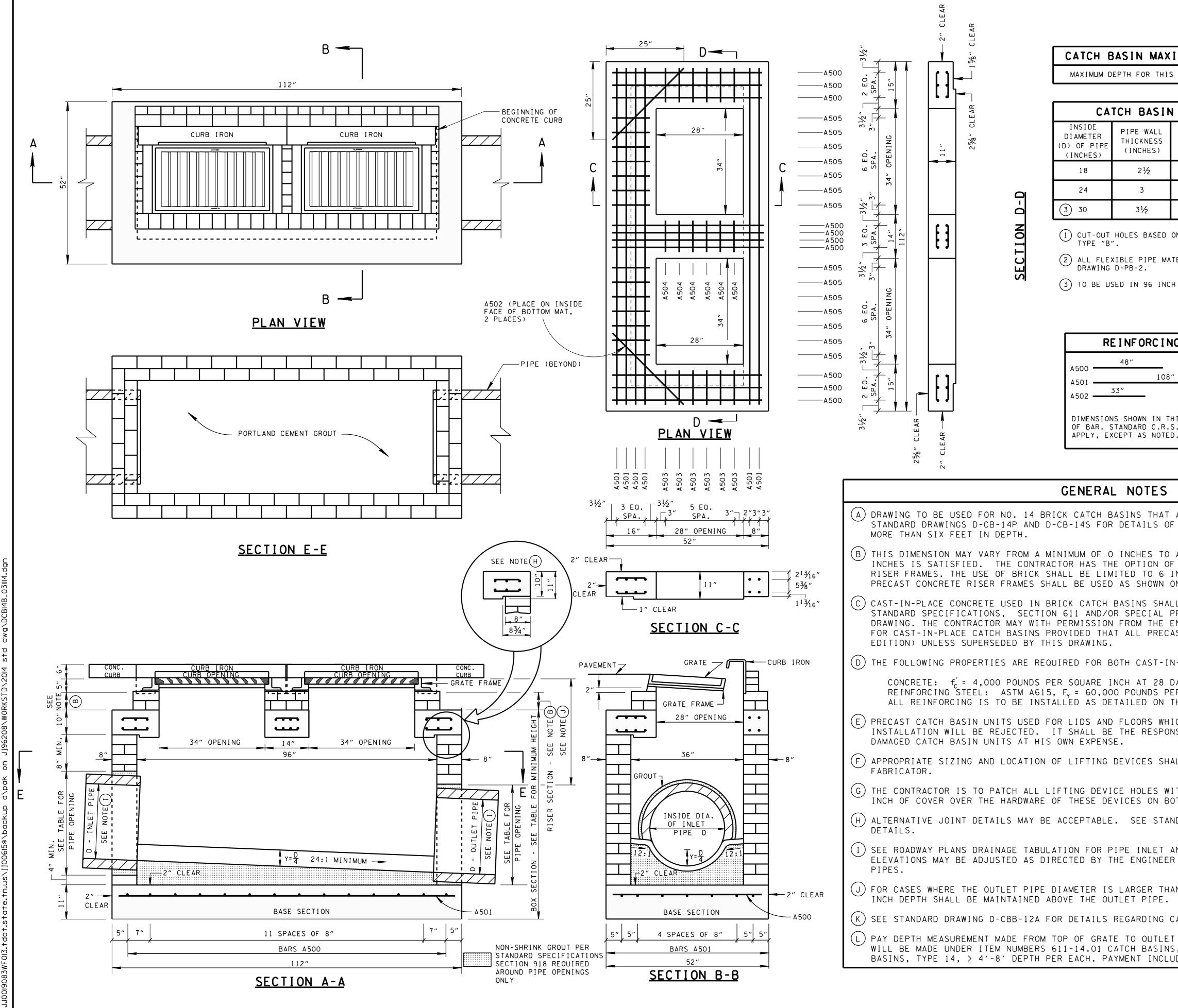
<b>/</b> E	INSIONS				
I	MAX. INLET OR OUTLET CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION		REVISION FHWA AL NOT REQUIRED.
	PIPE SIZE - STR. (INCHES)	PIPE SIZE - 90 (INCHES)	C (INCHES)	STATE	OF TENNESSEE
	60	36	3.5	DEPARTMENT	OF TRANSPORTATION
	66	42	4.0		ARD PRECAST THRU 120"
	72	48	4.5		ULAR NO.13 TCH BASIN
	78	54	5.0		USE WITH 6" DUNTABLE CURB)
		NOT	TO SCALE	4-15-00	D-CB-13RC



AXI	MUM	DEF	PTH	1 1	NOTE	
uic	S T DI IC		τc	20	001	

ΙN	DIMENSI	ONS	FOR DESIGN USE ONLY
L S )	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

- □ REV. 12-18-96: MODIFIED DRAWING



4 09:48 3WF013.

XI	MUM	DEF	۲ŀ	1	NO	TE
ΙS	STRUC	TURE	ΙS	6.	00′	•

[ ]	DIMENSI	FOR DESIGN USE ONLY	
	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	56	4.05
	32	63	4.59
	39	70	5.13

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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

NG	STEEL	LEC	END	
		A503	11″	-
08″		A 50 5	10″	
		A505	12″	
THIC				

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

5
T ARE SIX FEET AND LESS IN DEPTH. SEE OF NO. 14 CONCRETE CATCH BASINS THAT ARE
O A MAXIMUM OF 24 INCHES AS LONG AS 23 OF USING BRICK OR STANDARD PRECAST CONCRETE INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, ON STANDARD DRAWING D-RF-1.
ALL BE CONSTRUCTED IN ACCORDANCE WITH PROVISIONS UNLESS SUPERSEDED BY THIS ENGINEER SUBSTITUTE PRECAST CATCH BASINS CAST ELEMENTS MEET ASTM C913 (CURRENT
IN-PLACE AND PRECAST STRUCTURES:
DAYS PER SQUARE INCH THIS DRAWING.
HICH ARE DAMAGED DURING SHIPMENT OR ONSIBILITY OF THE CONTRACTOR TO REPLACE
HALL BE THE RESPONSIBILITY OF THE
WITH GROUT AND PLACE A MINIMUM OF ONE (1) BOTH TOP AND BOTTOM SURFACES.
ANDARD DRAWING D-CB-99 FOR ADDITIONAL
AND OUTLET ELEVATIONS. IF NEEDED, INVERT ER IN ORDER TO ACCOMMODATE INLET AND OUTLET
HAN THE INLET PIPE DIAMETER, A MINIMUM 23 $\cdot$
CAST IRON GRATES, FRAMES AND CURB INLETS.
ET FLOW ELEVATION. PAYMENT FOR CATCH BASIN NS, TYPE 14, O'-4' DEPTH AND 611-14.02 CATCH LUDES RISER SECTIONS AND GRATES.

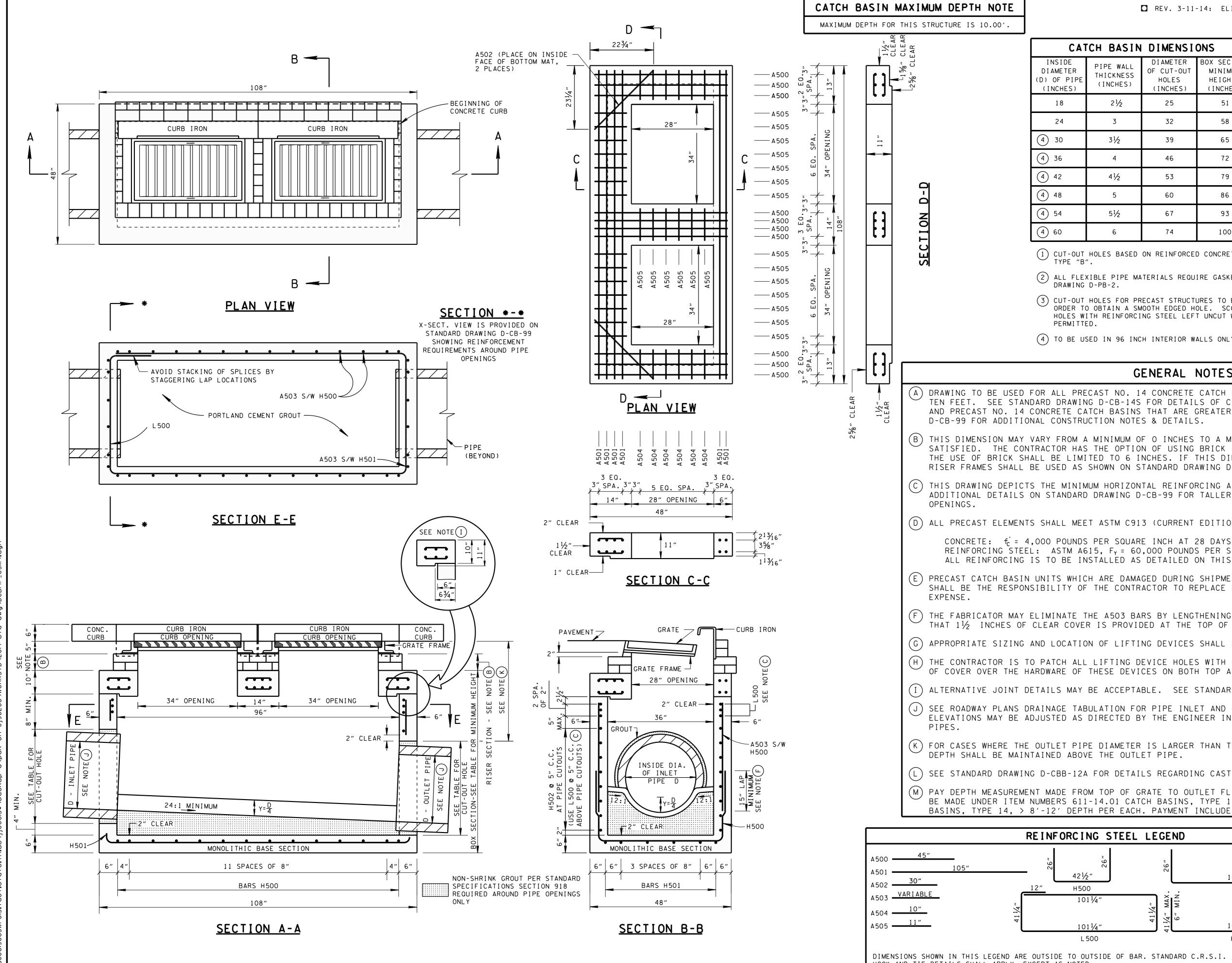
NOT TO SCALE

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

MINOR APPROV	REVISION FHWA Al not required.					
	of tennessee of transportation					
STANDARD RECTANGULAR BRICK NO. 14 CATCH BASIN						
1-19-96	D-CB-14B					



HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

CH BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY		
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		
21⁄2	25	51	4.05		
3	32	58	4.59		
31/2	39	65	5.13		
4	46	72	5.67		
4 <sup>1</sup> /2	53	79	6.21		
5	60	86	6.75		
5 <sup>1</sup> ⁄2	67	93	7.30		
6	74	100	7.84		

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

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

# GENERAL NOTES

- 🖸 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 (G) CHANGED LABEL OF LAST THREE GENERAL NOTES.
- □ REV. 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
- **C** 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 🛞

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.

□ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES I 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

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

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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT  $1\frac{1}{2}$  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) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

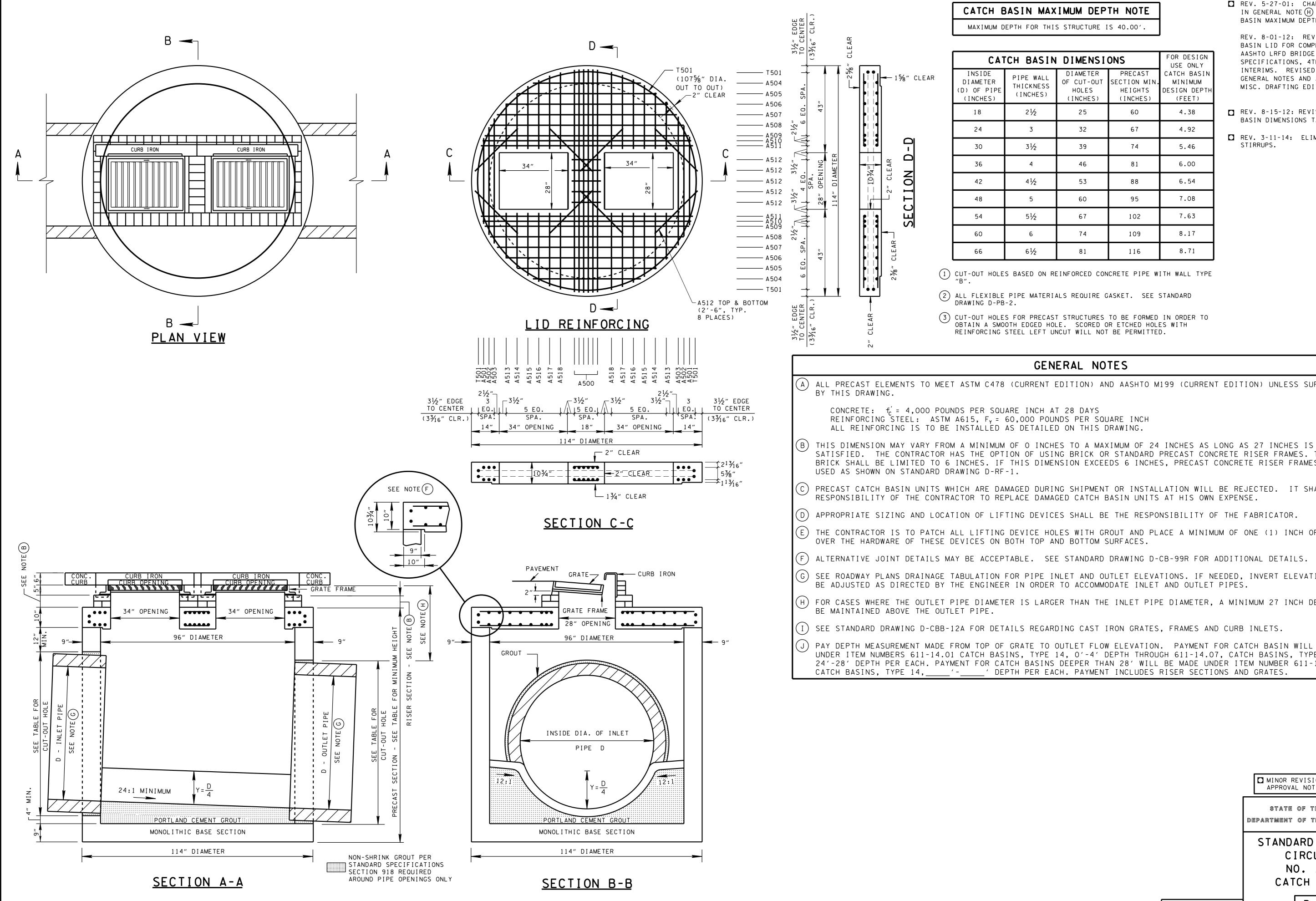
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

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.

G STEEL	LEGEND				REVISION FHWA AL NOT REQUIRED.	
26"	26"	102½″	26″	STATE Department	OF TENNESSEE OF TRANSPORTATION	]
/4"	411/4" <u>1/</u> 4" MAX. 6" MIN.	н501	6″ MIN. 1/4″ MAX.	REC	RD PRECAST	_
<u>/4"</u> )0		101¼" H502	<b>1</b> 4		RETE NO.14 CH BASIN	
SIDE OF BA	R. STANDARD C.	R.S.I. NOT T	O SCALE	12-18-95	D-CB-14P	



5 I	N	MAXI	MUM	DEF	°T⊦	H NOTE
H	FOR	THIS	STRUC	TURE	ΙS	40.00′.

H BASIN	DIMENSI	FOR DESIGN USE ONLY			
IPE WALL HICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		
21⁄2	25	60	4.38		
3	32	67	4.92		
3 <sup>1</sup> /2	39	74	5.46		
4	46	81	6.00		
4 <sup>1</sup> /2	53	88	6.54		
5	60	95	7.08		
5½	67	102	7.63		
6	74	109	8.17		
6 <sup>1</sup> ⁄2	81	116	8.71		

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

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

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

(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.

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

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

(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

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

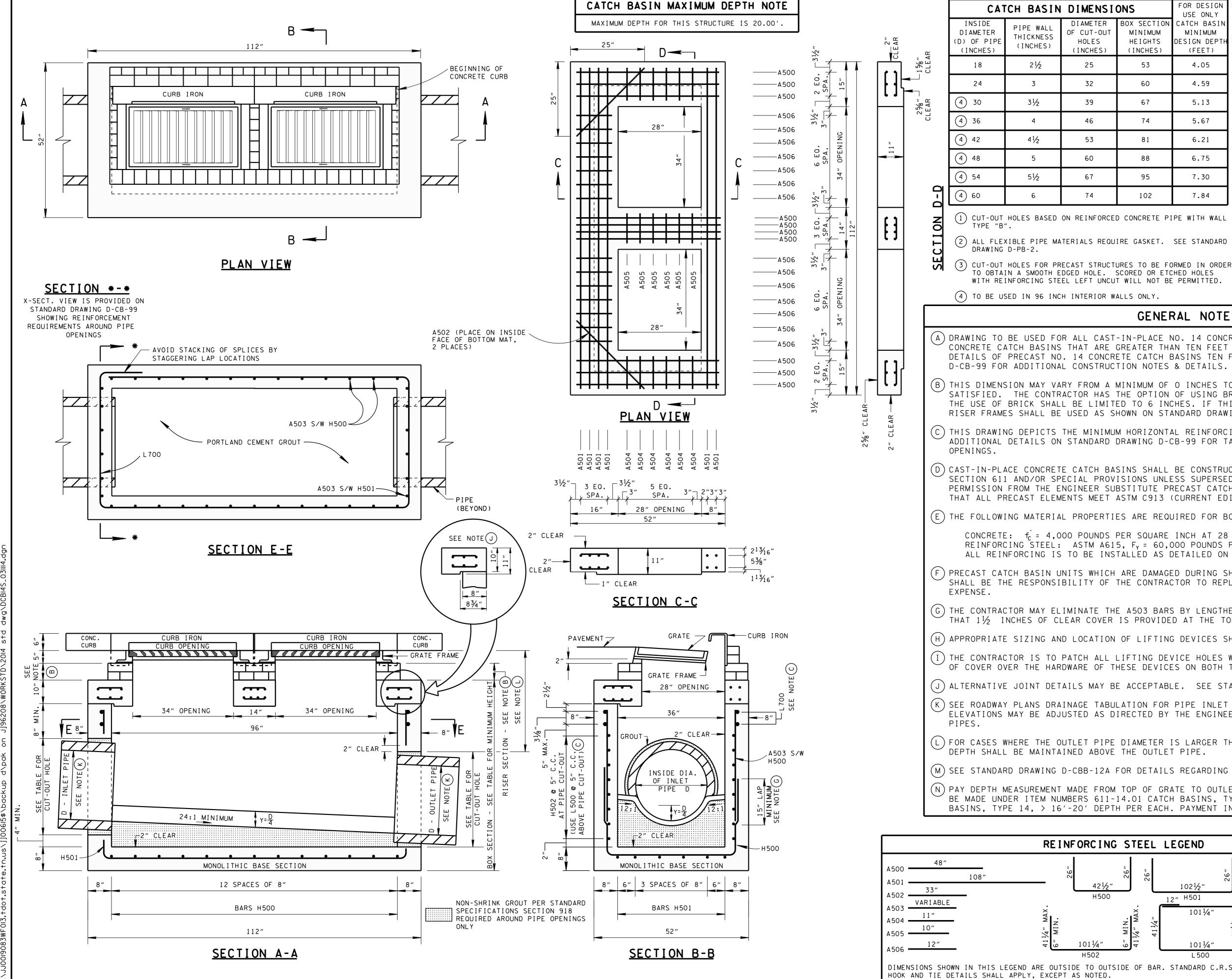
J) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-14.01 CATCH BASINS, TYPE 14, 0'-4' DEPTH THROUGH 611-14.07, CATCH BASINS, TYPE 14, > 24'-28' DEPTH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE UNDER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

	MINOR REVISION FHWA APPROVAL NOT REQUIRED.				
		OF TENNESSEE OF TRANSPORTATION			
	STANDARD PRECAST CIRCULAR NO. 14RB CATCH BASIN				
NOT TO SCALE	3-20-00	D-CB-14RB			

□ 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.

- REV. 8-15-12: REVISED CATCH BASIN DIMENSIONS TABLE
- **C** REV. 3-11-14: ELIMINATED STIRRUPS.



SIONS		FOR DESIGN USE ONLY	MODIFIED TOP SLAB		REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS.
2 J T	BOX SECTION MINIMUM HEIGHTS (INCHES)	MENTMUM	REV. 3-11-14:		ADDED HANDLING AND CUT-OUT HOLE NOTES. REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION
	53	4.05			JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE 田
	60	4.59			CHANGED LABEL OF LAST THREE GENERAL NOTES.
	67	5.13			REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL
	74	5.67		_	IN BASE SECTION.
	81	6.21			REV. 1-19-99: MODIFIED CATCH BASIN MINIMUM DEPTH TABLE.
	88	6.75			REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J)
	95	7.30			ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
	102	7.84			REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE
					©

REV. 8-01-12: REVISED CATCH

BASIN FOR COMPLIANCE WITH

AASHTO LRFD BRIDGE DESIGN

WITH INTERIMS. REVISED

DRAFTING EDITS.

SPECIFICATIONS, 4TH EDITION

REINFORCING, GENERAL NOTES,

LEGEND AND ADDITIONAL MISC.

### 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1<sup>1</sup>/<sub>2</sub> 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.

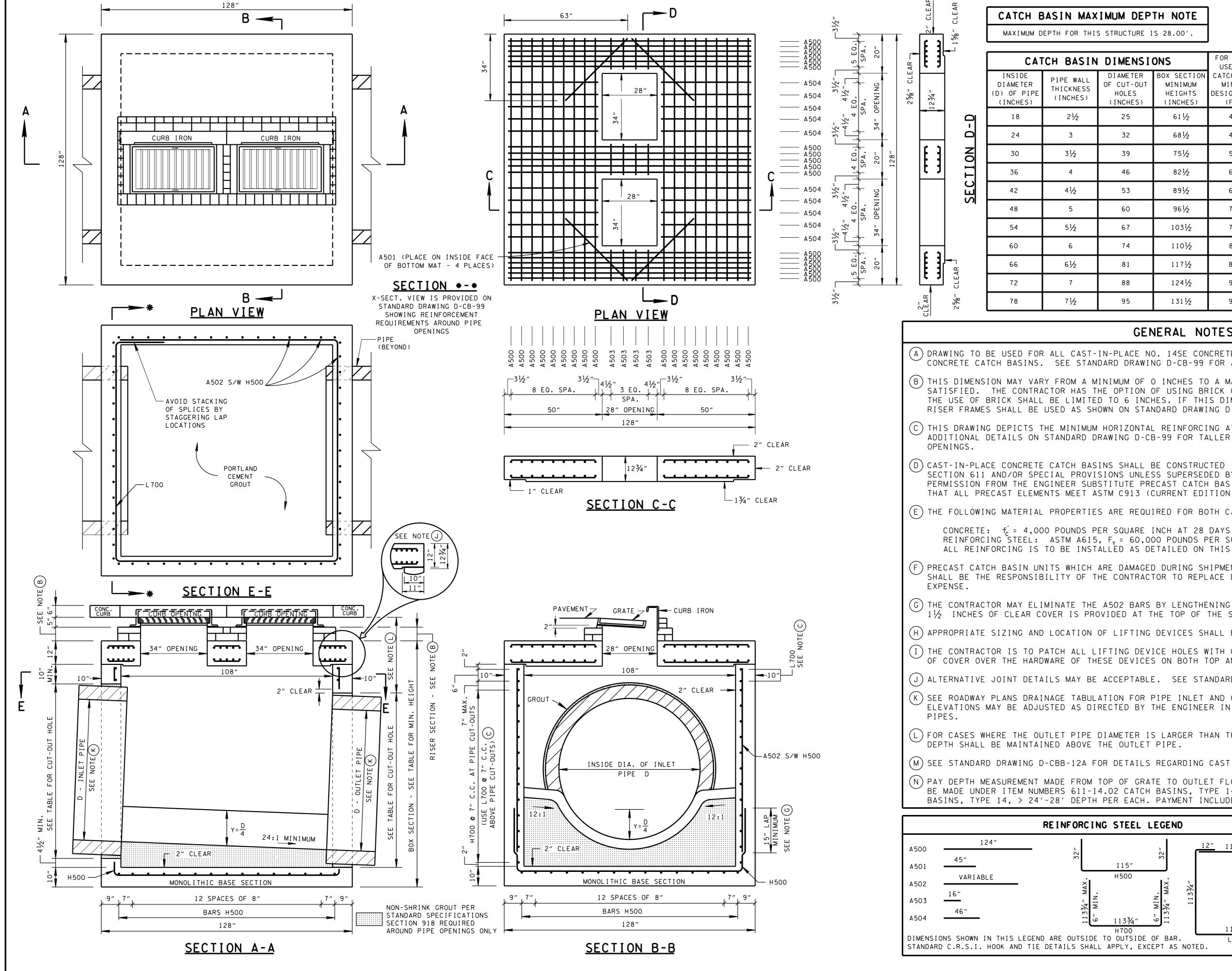
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

(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.

G STEEL LEGEND			REVISION FHWA Al NOT REQUIRED.
<sup>*</sup> 9 <sup>2</sup> <sup>9</sup> 7 <sup>9</sup> 7 <sup>9</sup> 7 102 <sup>1</sup> /2 <sup>"</sup>	<u>12"</u> 104¼"	STATE Department	OF TENNESSEE OF TRANSPORTATION
6" MIN. 10272 12" H501 101 <sup>1</sup> /4" WVX. 101 <sup>1</sup> /4" " 101 <sup>1</sup> /4" U 101 <sup>1</sup> /4" U 10	104 <sup>1</sup> ⁄4" L 700	REC CONCF	TANDARD TANGULAR RETE NO.14 CH BASIN
SIDE OF BAR. STANDARD C.R.S.I.	NOT TO SCALE	5-27-95	D-CB-14S



v					REV. 5-30-02: MODIFIED REINFORCING STEEL.
IS STRUCTURE IS 28.00'.					REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE C
N	DIMENSI		FOR DESIGN USE ONLY		REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
	25	61½	4.42		REV. 5-5-05: CORRECTED STEEL SPACING IN SECTION C-C.
	32	68 <sup>1</sup> ⁄2	4.96		REV. 8-01-12: REVISED CATCH BASIN FOR
	39	75½	5.50		COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH
	46	82 <sup>1</sup> ⁄2	6.04		INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC.
	53	89½	6.58	п	DRAFTING EDITS. REV. 3-11-14: ELIMINATED STIRRUPS.
	60	96 <sup>1</sup> ⁄2	7.13		NEV. 5 II IA. ELIMINATED STINKO S.
	67	103½	7.67	1	CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	74	1101/2	8.21	2	ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
	81	1171/2	8.75	(3)	
	88	1241⁄2	9.29		TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
	95	1 31 1/2	9.83		HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

### 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES I 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

(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:

REINFORCING STEEL: ASTM A615, F, = 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

(G) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT  $1\frac{1}{2}$  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.

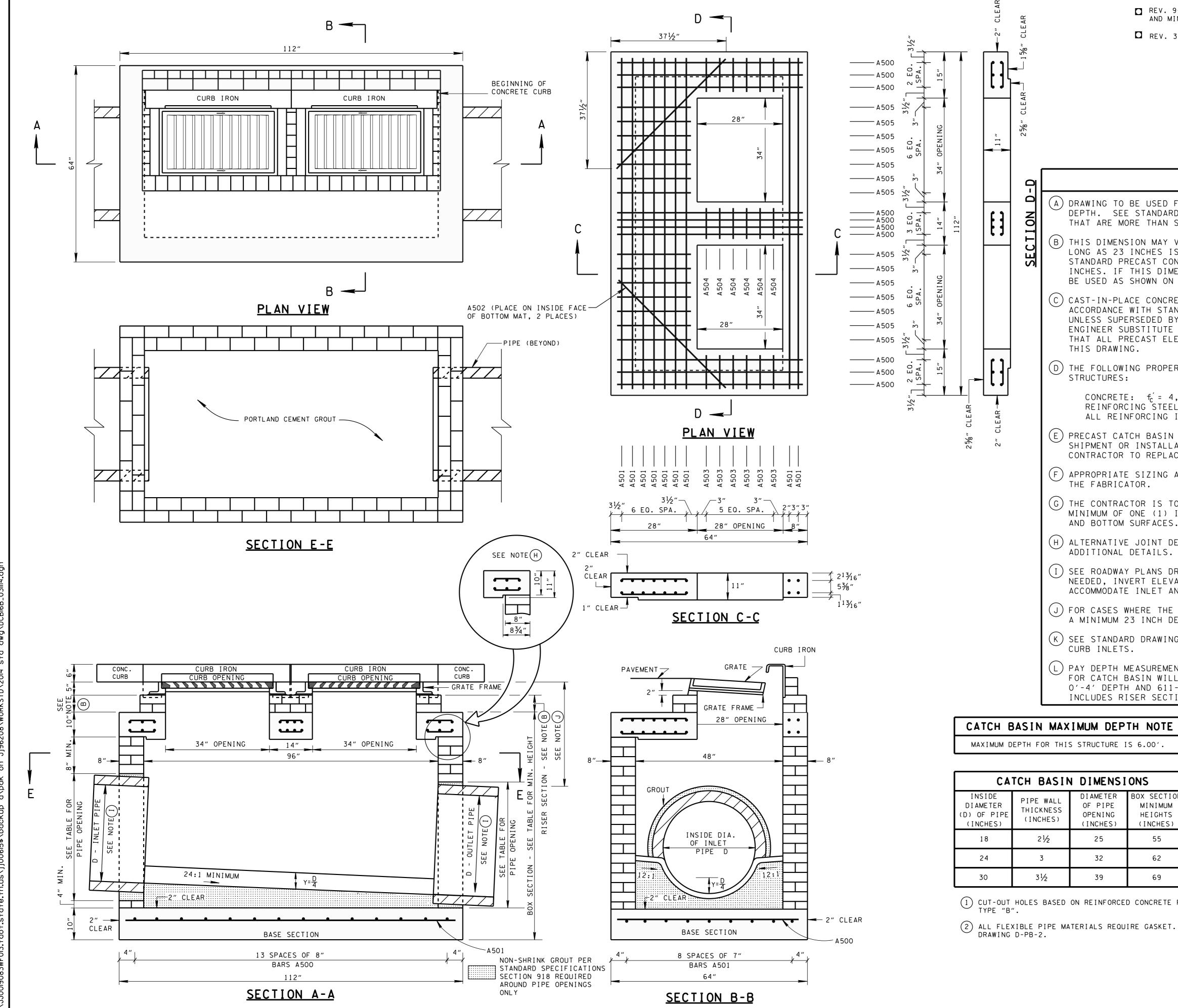
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH

(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.

NG STEEL LEGEND			REVISION FHWA
N <u>12″ 1133</u>	,4 " 		AL NOT REQUIRED.
115″ Н500	33/4 "	STATE Department	of tennessee of transportation
VIW 8 WIN 8 WIN 9 11334" 9 11334"	11	9′ X	ANDARD 9' SQUARE
H700 E TO OUTSIDE OF BAR. L700 LL APPLY, EXCEPT AS NOTED.			ETE NO. 14 Ch BASIN
	NOT TO SCALE	7-29-99	D-CB-14SE



- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS. □ REV. 10-26-00: MODIFIED GENERAL NOTE (A)
- □ REV. 7-29-99: ELIMINATED 36" DIAMETER PIPE FROM MINIMUM DEPTH TABLE.
- - **D** 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. 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

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

(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

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

(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.

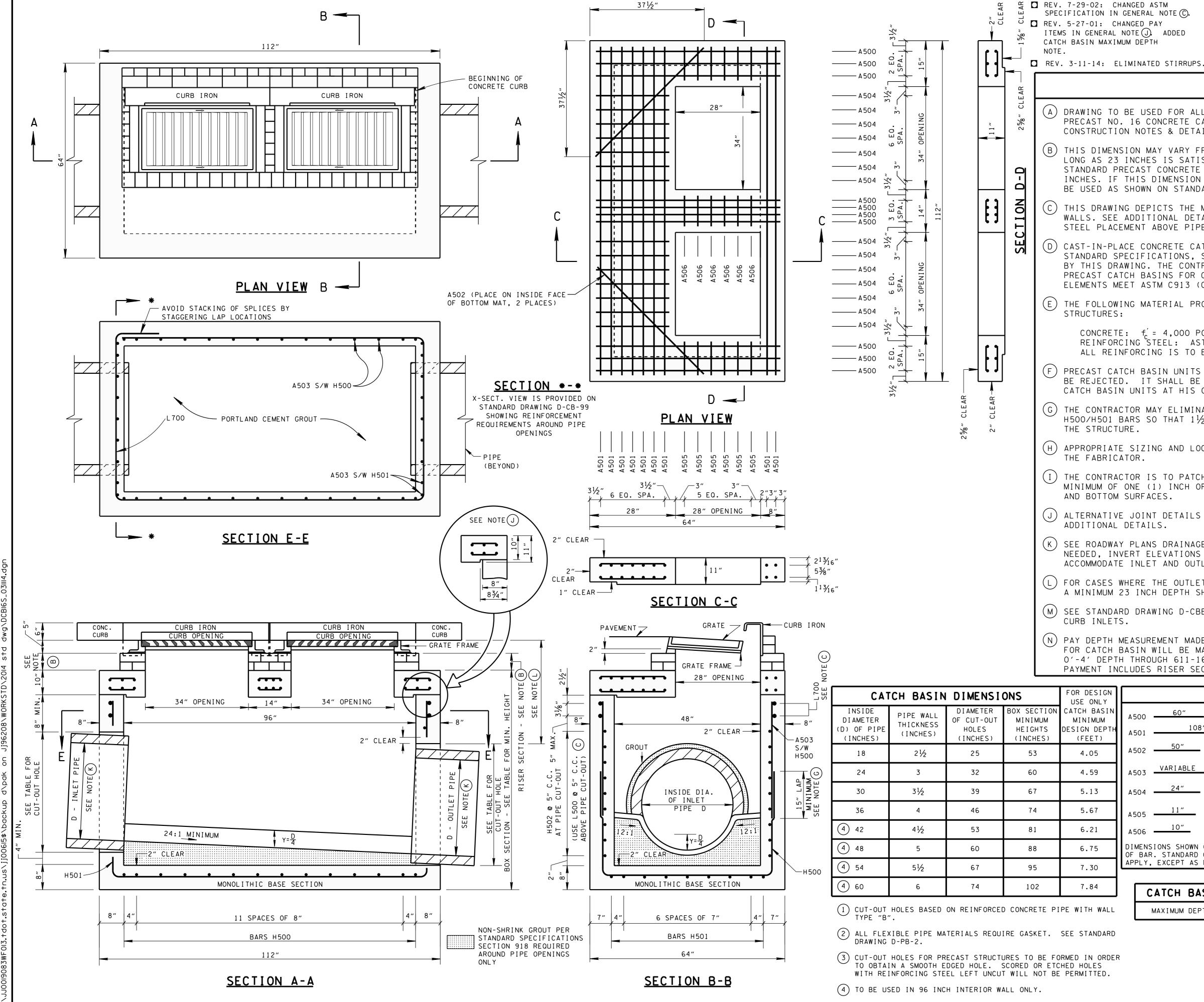
(K) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND

(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, O'-4' DEPTH AND 611-16.02 CATCH BASINS, TYPE 16, > 4'-8' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

	L							
NOTE			REINFO	ORCING	STEEL	LEGEI	ND	
5.00′.		Α 5	00 <u>60"</u> 108	-	A503 ·	11″ 10″		
I <b>S</b> X SECTION MINIMUM HEIGHTS	FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH	A 5	01		A504 ·	24"		
INCHES) 55	(FEET) 4.05		DIMENSIONS SH OUTSIDE OF BA DETAILS SHALL	R. STANDA	ARD C.R.S	5.І. НООК		
62	4.58	•			Ом	INOR REV	ISION	FHWA
69	5.13				А	PPROVAL	NOT REQU	IRED.
ONCRETE PI	PE WITH WALL				ST Departm		ennessei Granspor	
GASKET.	SEE STANDARD					STAN	IDARD	
					R	ECTA	NGULA	١R
					E	BRICK	NO.	16
					C	CAT <u>CH</u>	BAS	[ N

NOT TO SCALE

4-15-97 D-CB-16B



REV. 8-01-12: REVISED CATCH REV. 9-24-12: MODIFIED TOP SLAB BASIN FOR COMPLIANCE WITH AND MINIMUM DEPTH. 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. 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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.

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

CONCRETE: f = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS REINFORCING STEEL: ASTM A615, F = 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 11/2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF

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

(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

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

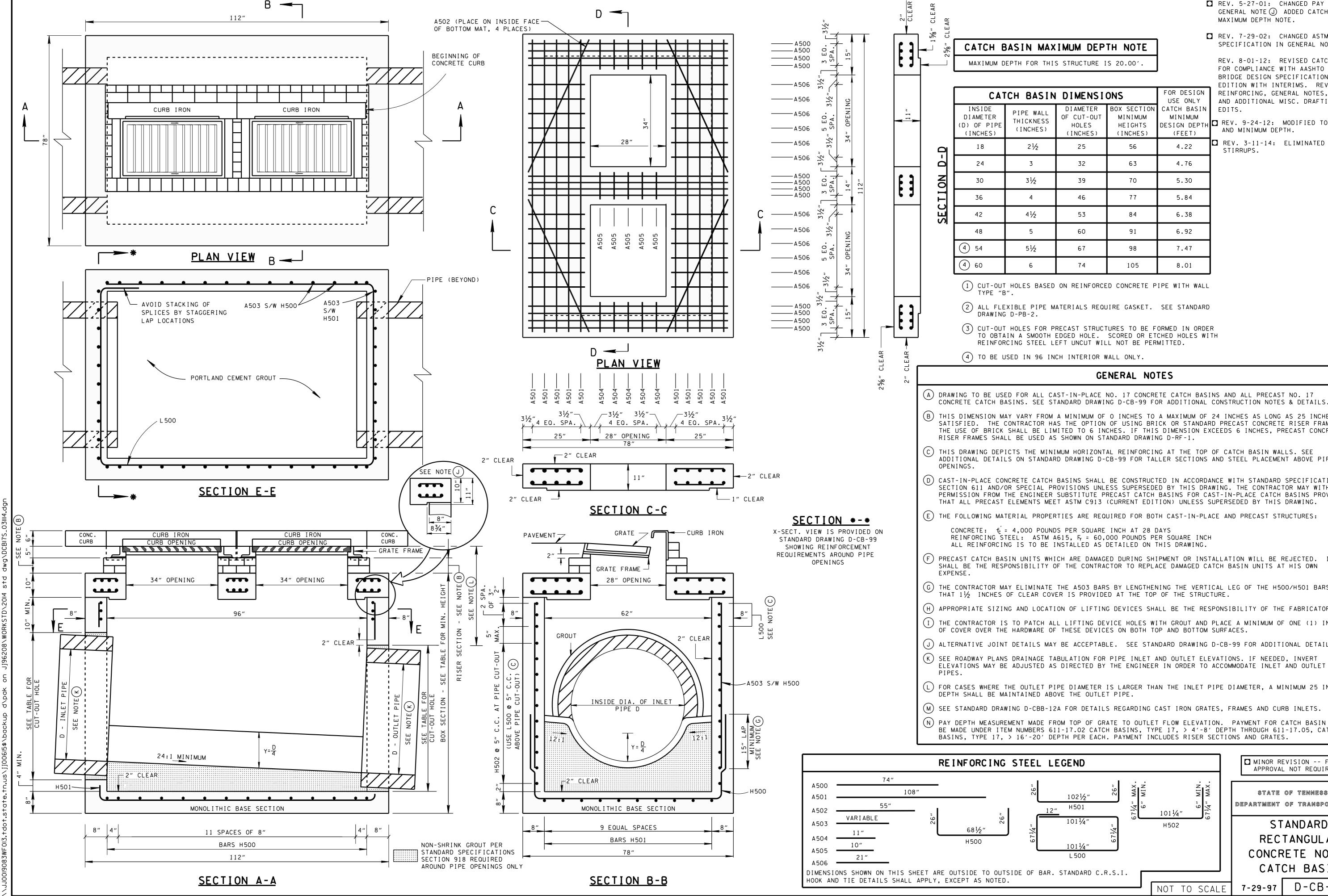
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

) 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.

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

(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, O'-4' DEPTH THROUGH 611-16.05, CATCH BASINS, TYPE 16, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

		REINFORC	CING STEEL	LEGE	ND		
500 — 501 —	60" 108" 50"	"92 Н501	102 <sup>1</sup> ⁄2″	26"	12 12 12 12 12 12	101¼" 101¼"	531/4"
	ZARIABLE	12314 " MAX. 5314 " MAX.		6″ MIN. 531⁄4″ MAX.		<u>2"</u> 101¼" 101¼"	561/4"
BAR. S	STANDARD C.R.S.	S LEGEND ARE I. HOOK AND T		SIDE		REVISION VAL NOT REQU	
CAI	TCH BASIN	MAXIMUM D			STATE	OF TENNESSE OF TRANSPOI	ĨE
					REC <sup>-</sup> CONCR	ANDARD TANGULA ETE NO CH BASI	.16
			NOT TO SO	CALE	4-15-97	D-CB-	16S



# CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

CH BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21/2	25	56	4.22
3	32	63	4.76
31⁄2	39	70	5.30
4	46	77	5.84
4 <sup>1</sup> ⁄2	53	84	6.38
5	60	91	6.92
51⁄2	67	98	7.47
6	74	105	8.01

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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. 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 O 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

(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

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1<sup>1</sup>/<sub>2</sub> 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

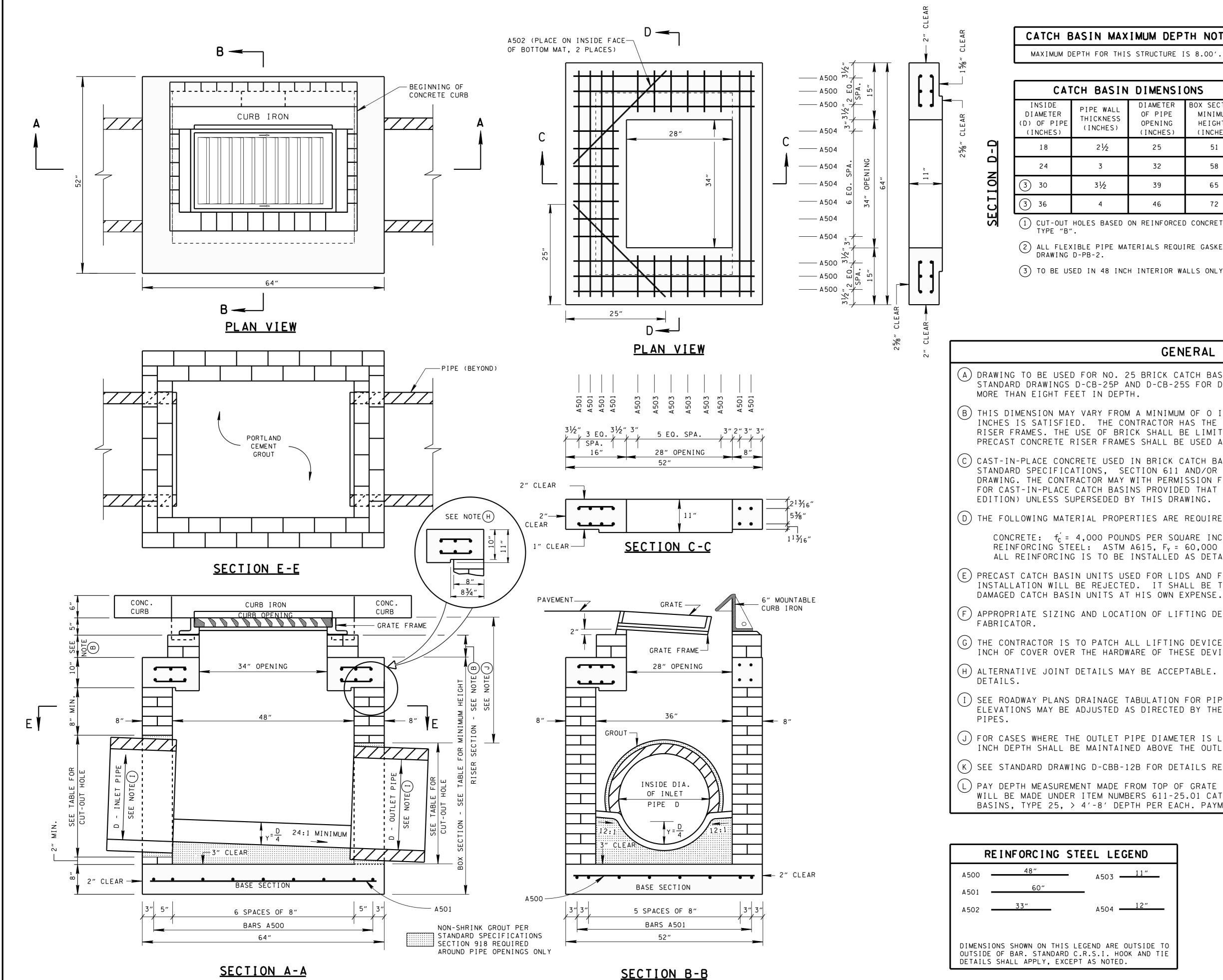
(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE. (M) SEE STANDARD DRAWING D-CBB-12A FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS. (N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO 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.

STEEL	LEGEND							EVISION FHWA NOT REQUIRED.
26"	102½″ 12″ <sup>H501</sup>	26"	7 <u>1/4" MA</u> X. 6" MIN.	101 <sup>1</sup> ⁄4″	6″ MIN. 671/4″ MAX.	ſ		OF TENNESSEE OF TRANSPORTATION
671/4"	101¼″ <u>101¼</u> ″ L 500	671/4"		H502	<b>.</b> 0		REC CONCR	ANDARD TANGULAR RETE NO.17 CH BASIN
IDE OF BA	AR. STANDARD	C.R.S.I	·	NOT T	) SCALI	E	7-29-97	D-CB-17S

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.



AX	IMUM DEP	TH NOTE		
THIS	S STRUCTURE I	S 8.00′.		
IN	DIMENSI	ONS	FOR DESIGN USE ONLY	Ï
L SS )	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
	25	51	3.88	
	32	58	4.42	
	39	65	4.96	
	46	72	5 50	

- □ 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 (]

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.

REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

72

5.50

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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

# **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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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

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

(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

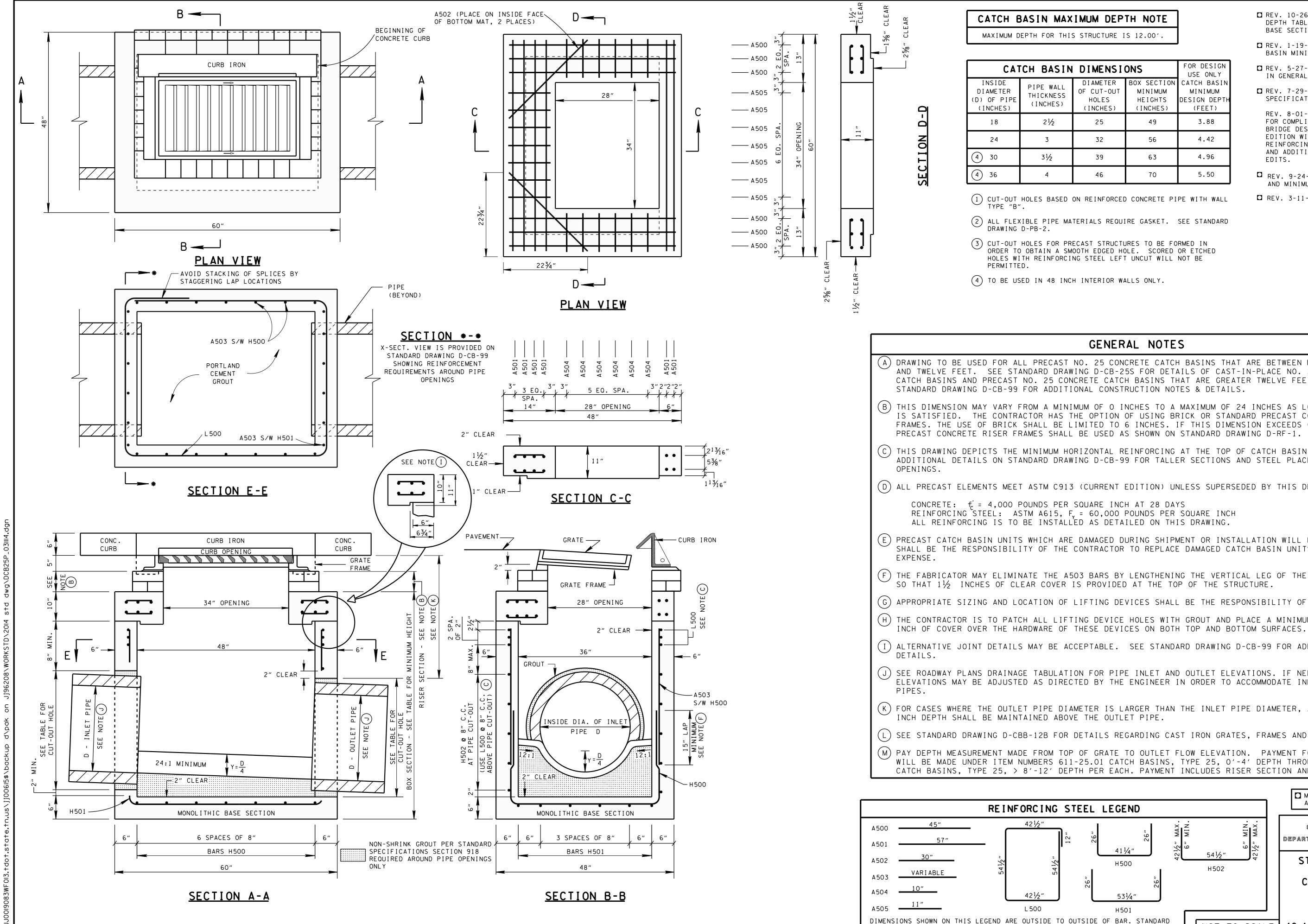
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(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-12B FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

FROM	TOP	OF	GRATE	ΤO	OUTLET	FLOW	ELEV	ATION.	ΡΑΥΜ	ENT F	FOR	САТСН	BASIN
MBERS	611	-25.	01 CAT	ТСН	BASINS,	ΤΥΡΕ	25,	0′-4′	DEPTH	AND	611	-25.02	CATCH
EPTH F	PER	EACH	. PAYN	MENT	INCLUD	es ri	SER	SECTION	AND	GRATE	<u> </u>		

				MINOR	REVISION FHWA
GEND				APPRO	AL NOT REQUIRED.
11"				STATE Department	OF TENNESSEE OF TRANSPORTATION
				RECTAN	ANDARD GULAR BRICK NO. 25
OUTSIDE TO OOK AND TIE D.				-	CH BASIN ITH 6" MOUNTABLE CURB)
	NOT	ТО	SCALE	7-29-96	D-CB-25B



N	IXAN	MUM	DEF	•Tŀ	H NOTE	
R	THIS	STRUC	TURE	ΙS	12.00′.	

ASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
WALL NESS HES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
1/2	25	49	3.88
	32	56	4.42
/2	39	63	4.96
	46	70	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

(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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

# 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

REINFORCING STEEL: ASTM A615, F = 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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT  $1\frac{1}{2}$  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)

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

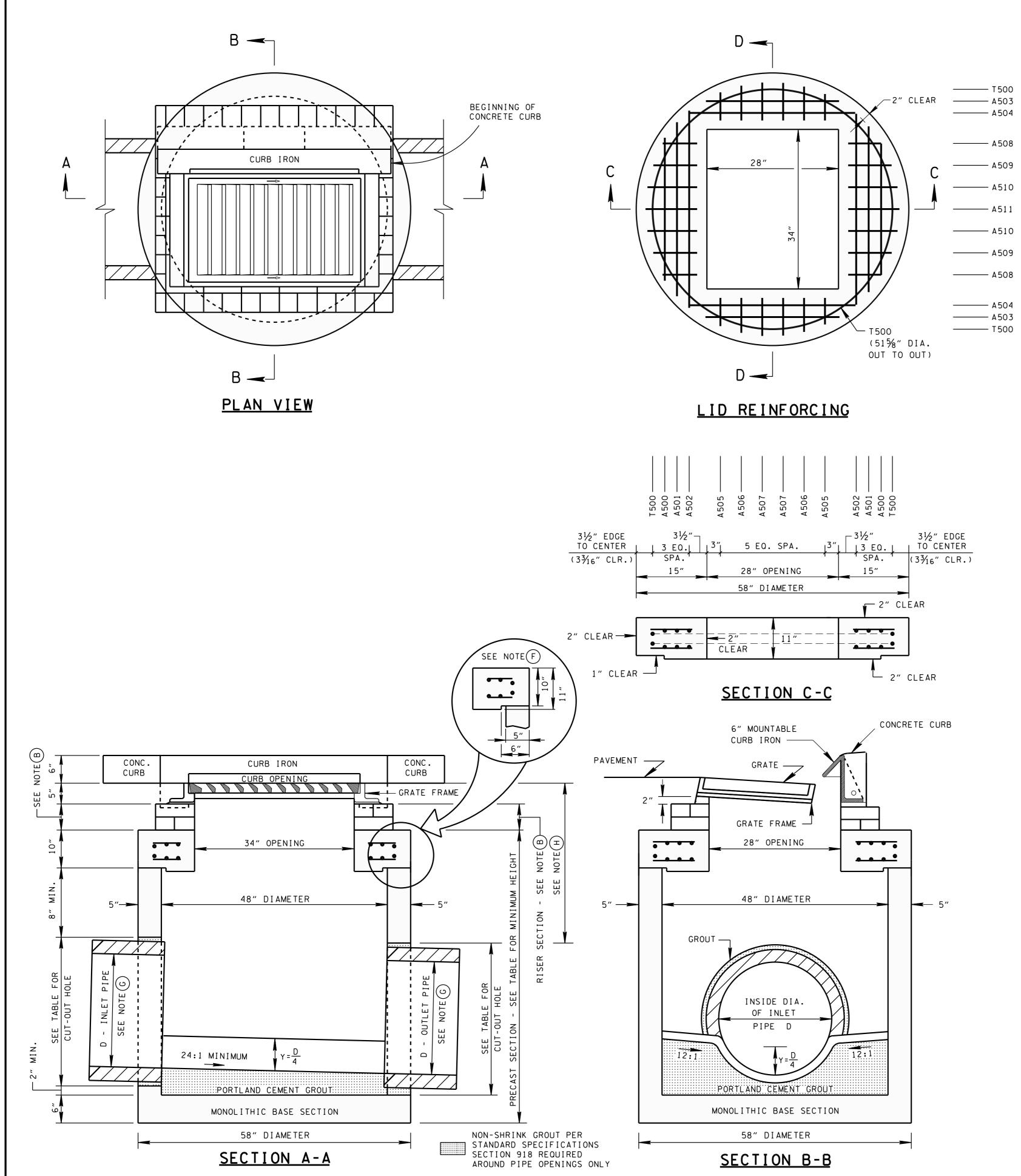
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23

(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.

		REINF	ORCING ST	EEL L	EGEND					EVISION FHWA L NOT REQUIRED.
A500 - A501 -	45" 57"	- 	42 <sup>1</sup> ⁄2″	26"	56 2	<u>1/2</u> " MAX. 6" MIN		<u>6" MI</u> N. 1⁄2" MAX.	STATE Department	OF TENNESSEE OF TRANSPORTATION
A502 -	30"	1/2 "	41/2"		41¼″ H500	421	54½"	421		ARD PRECAST
A503 -	VARIABLE	54	5	26 "		6 "	H502			TANGULAR ETE NO. 25
A504 -	10"		42 <sup>1</sup> /2″	N	53¼"	$\sim$			САТ	CH BASIN
A505 -	11″		L 500		Н501	_, ,				USE WITH 6" NTABLE CURB)
	ONS SHOWN ON THI . HOOK AND TIE D				DF BAR. STAN DTED.	DARD	NOT T	O SCALE	12-18-95	D-CB-25P



ש:49 0ו3.

A	ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURF BY THIS DRAWING.
	CONCRETE: f <sub>c</sub> '= 4,000 POUNDS PER SQUARE IN REINFORCING STEEL: ASTM A615, F <sub>Y</sub> = 60,000 ALL REINFORCING IS TO BE INSTALLED AS DE
B	THIS DIMENSION MAY VARY FROM A MINIMUM OF O SATISFIED. THE CONTRACTOR HAS THE OPTION OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS USED AS SHOWN ON STANDARD DRAWING D-RF-1.
©	PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED RESPONSIBILITY OF THE CONTRACTOR TO REPLACE
	APPROPRIATE SIZING AND LOCATION OF LIFTING
E	THE CONTRACTOR IS TO PATCH ALL LIFTING DEVIC OVER THE HARDWARE OF THESE DEVICES ON BOTH
F	ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE.
<b>()</b>	SEE ROADWAY PLANS DRAINAGE TABULATION FOR PI BE ADJUSTED AS DIRECTED BY THE ENGINEER IN (
H	FOR CASES WHERE THE OUTLET PIPE DIAMETER IS BE MAINTAINED ABOVE THE OUTLET PIPE.
	SEE STANDARD DRAWING D-CBB-12B FOR DETAILS F
J	SEE STANDARD DRAWING D-CB-25RB FOR DETAILS F 6" MOUNTABLE CURB).
K	PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RIS

NO

C

ш

S

INSIDE

DIAMETER

(D) OF PIPE

(INCHES)

18

24

DRAWING D-PB-2.

"В".

- %

1: 1

3½" EDGE TO CENTER :3¾6" CLR.

3½, T0 0 3¾6

~ Ш n

ΜN

CATCH	BASI	N	IXAN	MUM	DEF	PTH	H NOTE
MAXIMUM	DEPTH	FOR	THIS	STRUCT	URE	ΙS	20.00′.

C A 1	FOR DESIGN USE ONLY			
IDE TER PIPE HES)	PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	21⁄2	25	49	3.88
	3	32	56	4.42

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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.
- **C** 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.
- **D** 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

# GENERAL NOTES

RENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

NCH AT 28 DAYS O POUNDS PER SQUARE INCH TAILED ON THIS DRAWING.

INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE

DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

ICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER TOP AND BOTTOM SURFACES.

. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL

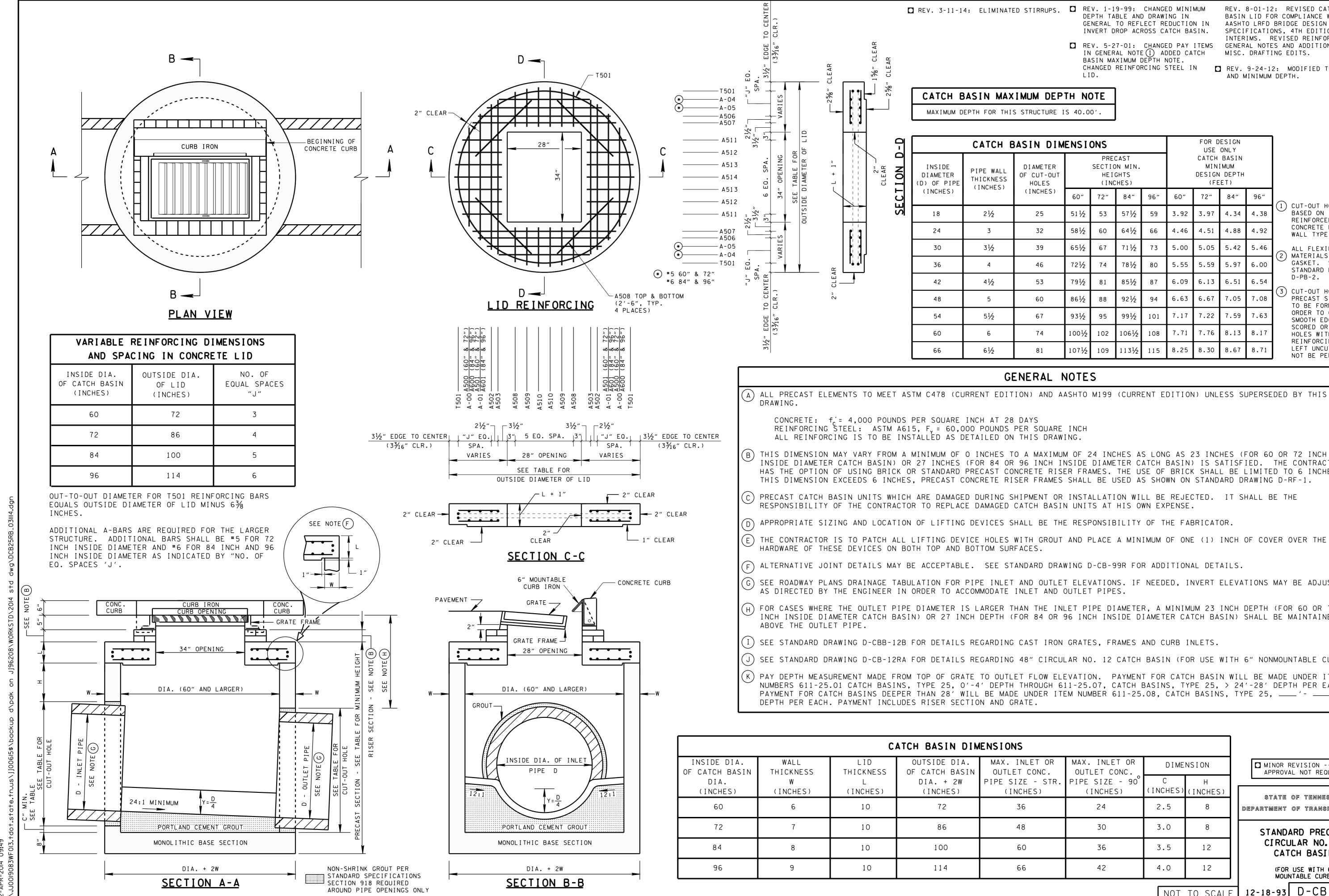
REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

REGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH

E TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE TYPE 25, 0'-4' DEPTH THROUGH 611-25.05 CATCH BASINS, TYPE 25, > SER SECTION AND GRATE.

NOT

			ION FHWA T REQUIRED.
	STATE Department		nnessee Ansportation
	STANDARD PRECAST 48" CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)		
TO SCALE	5-27-95	D -	CB-25RA



- 🗖 REV. 3-11-14: ELIMINATED STIRRUPS. 🗖 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.

□ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

BASIN DIMENSIONS						E S I GN ONL Y					
DIAMETER OF CUT-OUT HOLES		PRECAST SECTION MIN. HEIGHTS (INCHES)			MIN DESIGN	BASIN IMUM DEPTH ET)					
	(INCHES)	60″	72"	84″	96″	60″	72″	84″	96″		
	25	51 ½	53	57½	59	3.92	3.97	4.34	4.38	└── BASED ON	CUT-OUT HOLES BASED ON REINFORCED
	32	58½	60	64½	66	4.46	4.51	4.88	4.92		CONCRETE PIPE WI WALL TYPE "B".
	39	65½	67	71 <sup>1</sup> /2	73	5.00	5.05	5.42	5.46	(2)	ALL FLEXIBLE PIPE MATERIALS REQUIRE
	46	72 <sup>1</sup> ⁄2	74	78½	80	5.55	5.59	5.97	6.00		GASKET. SEE STANDARD DRAWING
	53	79½	81	85½	87	6.09	6.13	6.51	6.54		D-PB-2.
	60	86½	88	92 <sup>1</sup> ⁄2	94	6.63	6.67	7.05	7.08	(3)	CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN
	67	93½	95	99½	101	7.17	7.22	7.59	7.63		ORDER TO OBTAIN A SMOOTH EDGED HOLE.
	74	100½	102	106½	108	7.71	7.76	8.13	8.17		SCORED OR ETCHED HOLES WITH REINFORCING STEEL
	81	107½	109	113½	115	8.25	8.30	8.67	8.71		LEFT UNCUT WILL NOT BE PERMITTED.

## GENERAL NOTES

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 84 OR 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

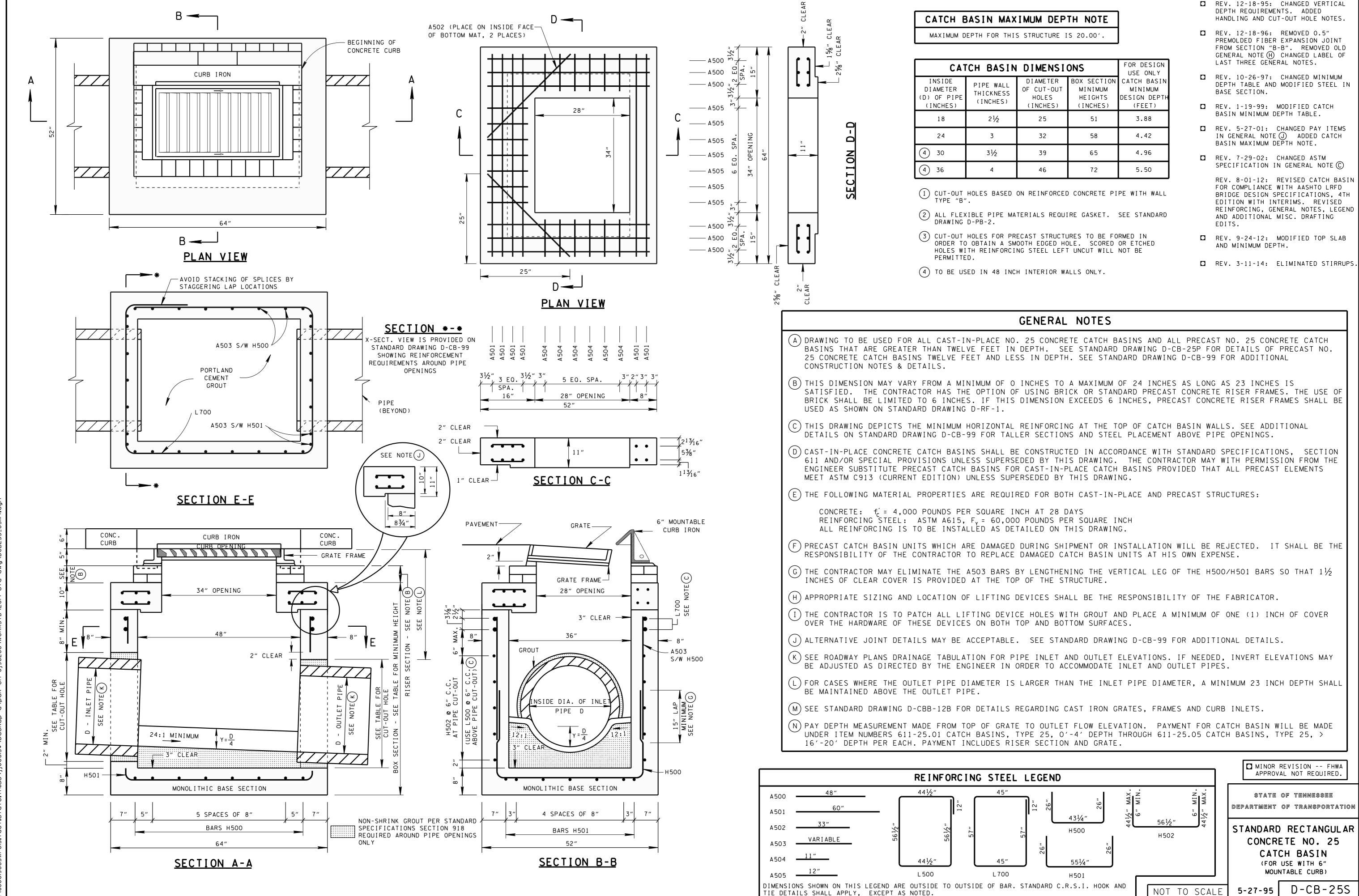
- (E) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE
- (G) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED
- (H) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH (FOR 60 OR 72) INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED

(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, O'-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, \_\_\_\_'

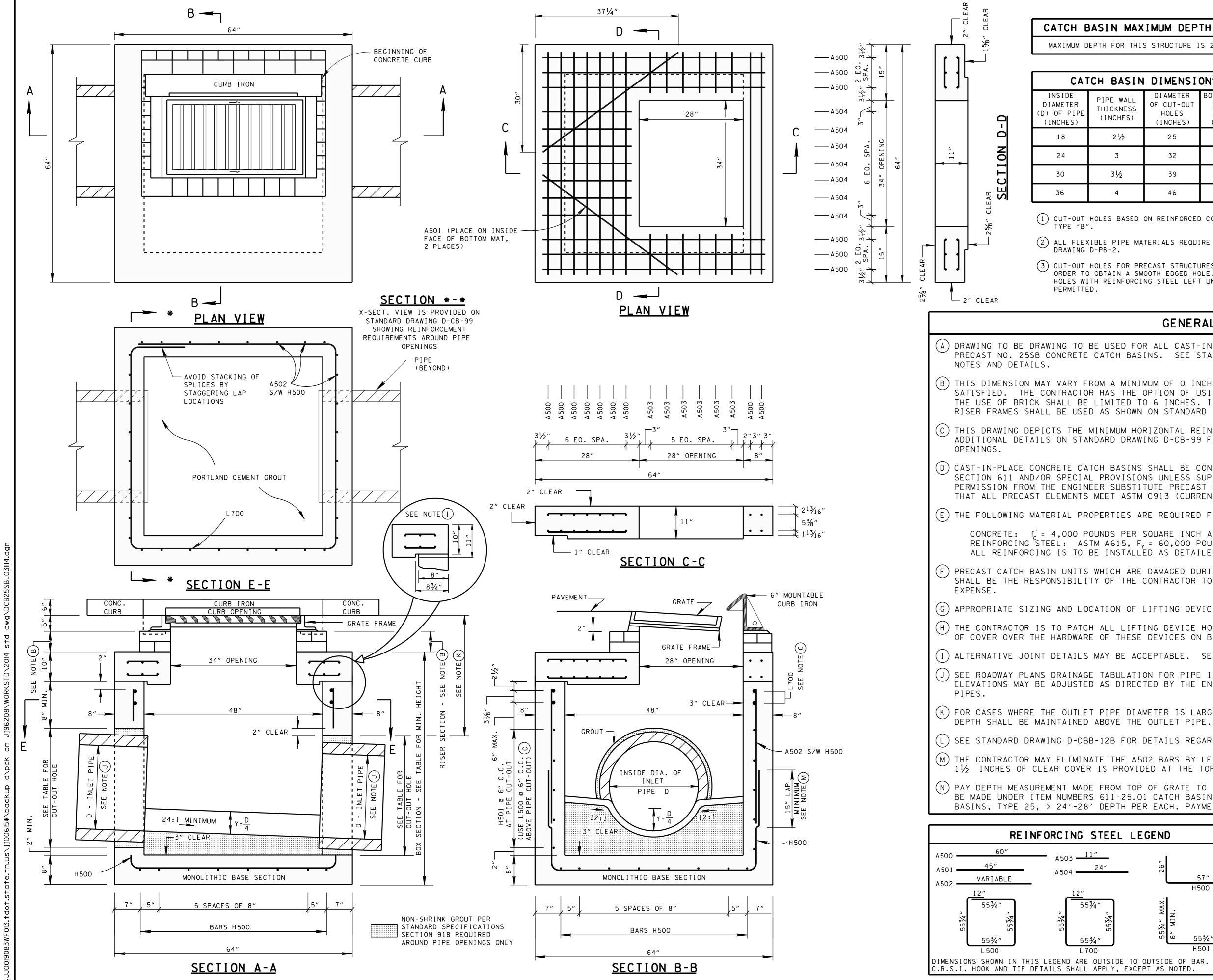
S			
INLET OR T CONC.	MAX. INLET OR OUTLET CONC.	DIME	NSION
ZE - STR. ICHES)	PIPE SIZE - 90° (INCHES)	C (INCHES)	H (INCHES)
36	24	2.5	8
48	30	3.0	8
60	36	3.5	12
66	42	4.0	12
		NOT	TO SCALE

		ISION FHWA NOT REQUIRED.	
• • • • • •		TENNESSEE TRANSPORTATION	
STANDARD PRECAST CIRCULAR NO. 25 CATCH BASIN (FOR USE WITH 6" MOUNTABLE CURB)			
12-18-93	C	)-CB-25RB	



TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

IN	DIMENSI	ONS	FOR DESIGN USE ONLY
L SS )	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50



#### CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'

BASIN	FOR DESIGN USE ONLY		
E WALL CKNESS ICHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2 <sup>1</sup> /2	25	51	3.88
3	32	58	4.42
3 <sup>1</sup> /2	39	65	4.96
4	46	72	5.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

### 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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 = 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

(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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

(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  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

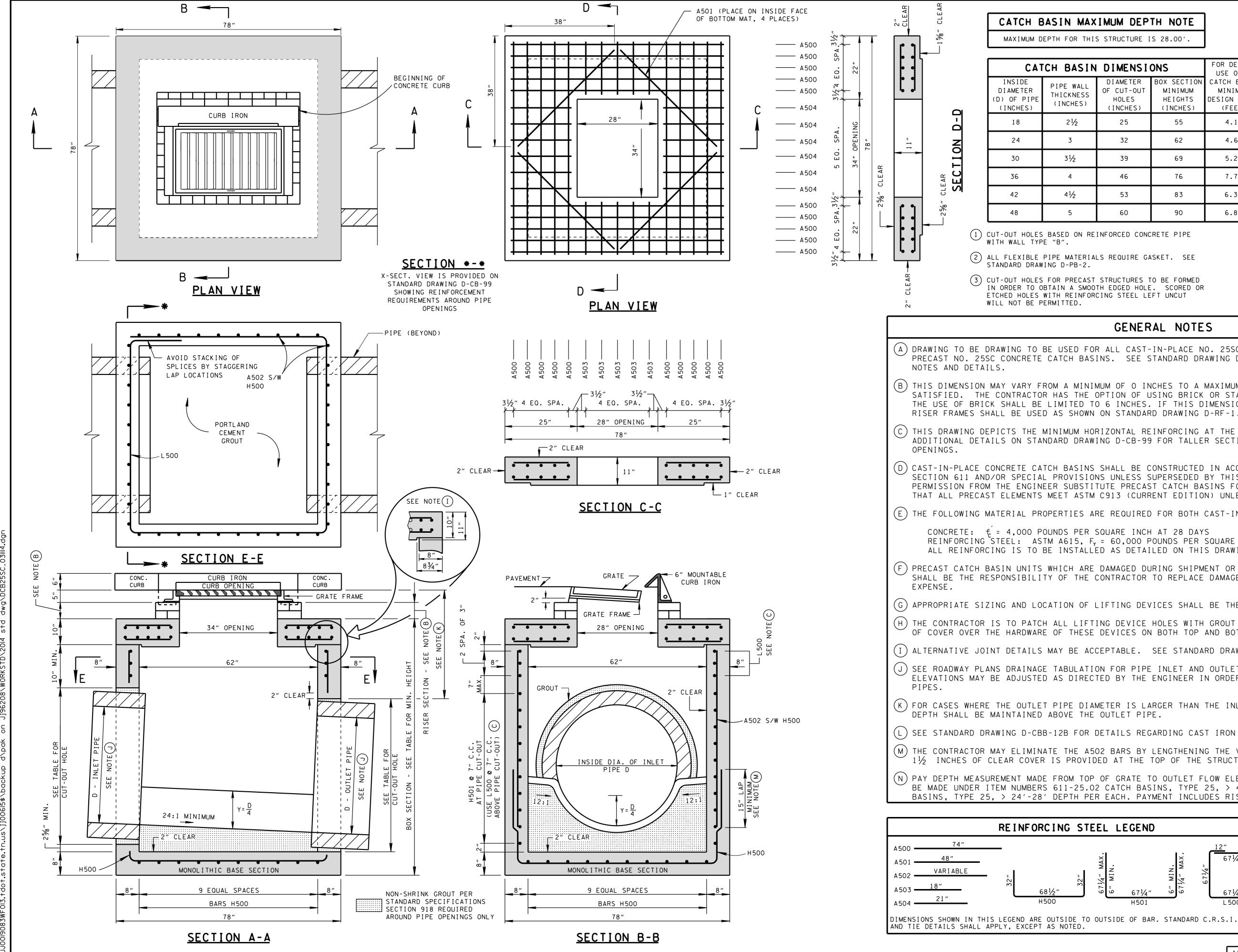
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.01 CATCH BASINS, TYPE 25, 0'-4' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

EL LEGEND			REVISION FHWA
		APPROV	/AL NOT REQUIRED.
<sup>*</sup> 92 <sup>*</sup> 92 <sup>*</sup> 92 57″ H500		STATE Department	of tennessee of transportation
5534 ° MAX. 6 ° MIN. 5534 ° MAX. 5534 ° MAX.		4′X CONC	ANDARD 4' SOUARE RETE NO.25 CH BASIN
IDE TO OUTSIDE OF BAR. STANDARD		(FOR USE W)	TH 6" MOUNTABLE CURB)
Y, EXCEPT AS NOTED.	NOT TO SCALE	6-30-00	D-CB-25SB

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- ☐ REV. 3-11-14: ELIMINATED STIRRUPS.



	-
MAXIMUM DEPTH NOTE	
	1

THIS	STRUCTURE	IS	28.00'	•

ASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
VALL NESS ES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2	25	55	4.13
	32	62	4.67
2	39	69	5.22
	46	76	7.76
2	53	83	6.30
	60	90	6.84

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE

(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

### 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

(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

(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.

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

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

(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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

(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 11/2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

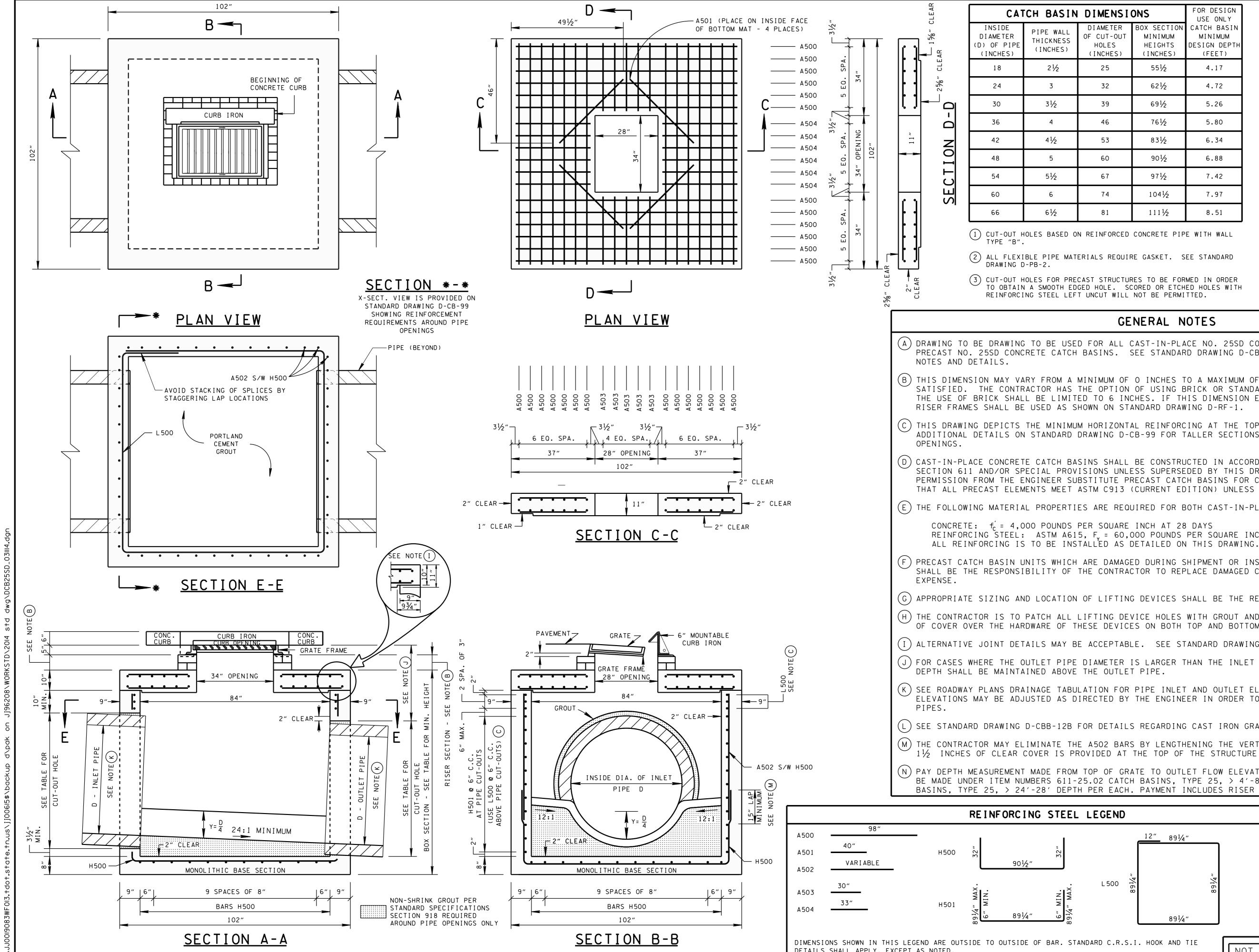
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-25.02 CATCH BASINS, TYPE 25, > 4'-8' DEPTH THROUGH 611-25.07 CATCH BASINS, TYPE 25, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

STEEL LEGEND	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
2" 4" MAX. 4" MIN. 4" MAX. 4" MAX. 571/4" 571/4" 571/4"	STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
"25" "14" "14" "14" "14" "14" "14" "14" "1	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.25
TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK D.	(FOR USE WITH 6" MOUNTABLE CURB)
NOT TO	SCALE 6-30-00 D-CB-25SC

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS.



DETAILS SHALL APPLY, EXCEPT AS NOTED.

DIMENSI	FOR DESIGN USE ONLY	
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
25	55½	4.17
32	62 <sup>1</sup> /2	4.72
39	69 <sup>1</sup> /2	5.26
46	76½	5.80
53	83½	6.34
60	90 <sup>1</sup> ⁄2	6.88
67	97 <sup>1</sup> /2	7.42
74	104½	7.97
81	1111/2	8.51

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

- 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

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

(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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

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

(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:

REINFORCING STEEL: ASTM A615, F = 60,000 POUNDS PER SQUARE INCH

(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

(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

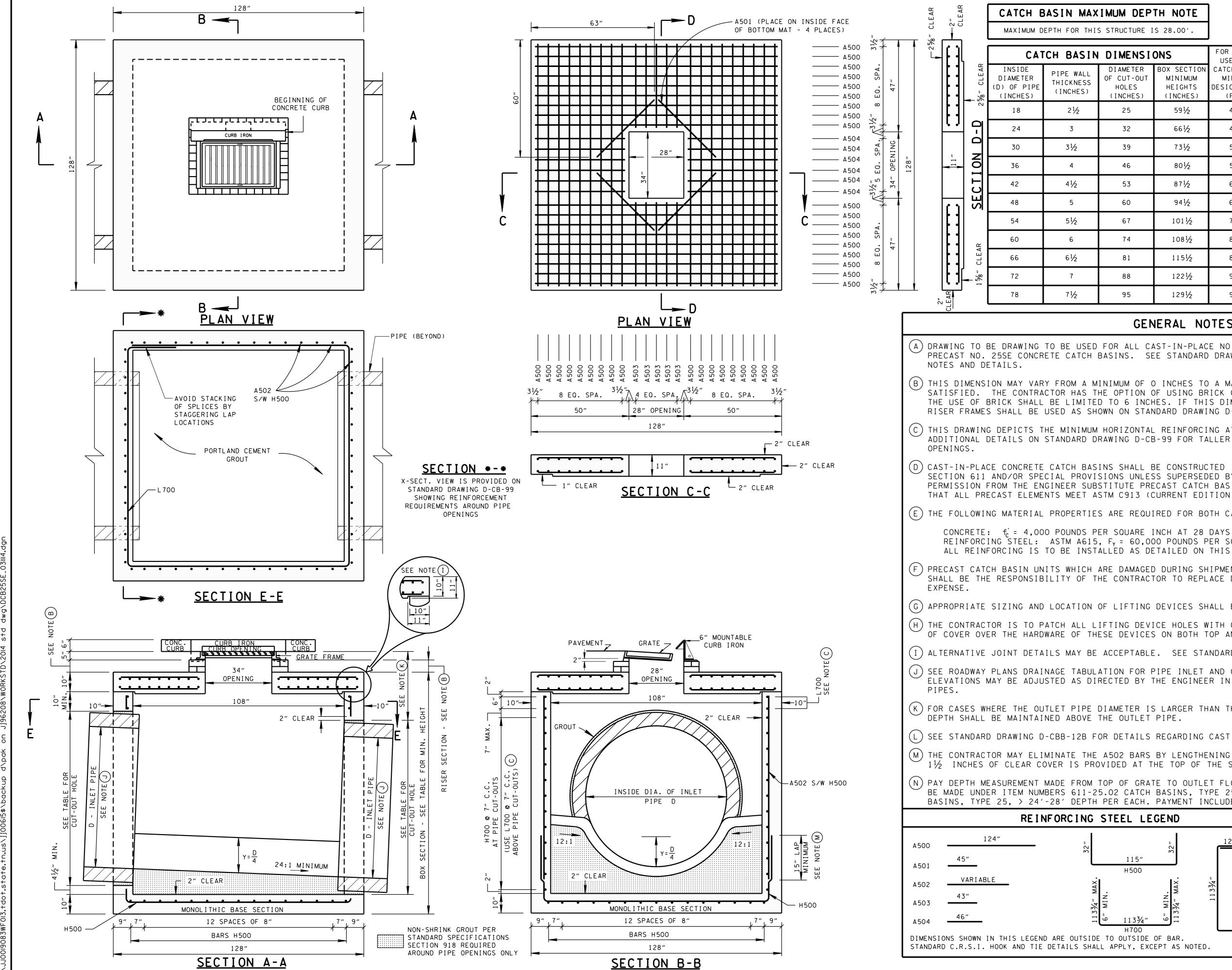
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(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 1<sup>1</sup>/<sub>2</sub> 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.

LEGEND				REVISION FHWA AL NOT REQUIRED.
1	<u>2″ 89¼″</u>		STATE	OF TENNESSEE OF TRANSPORTATION
L 500 <sup>*</sup> /168	* <b>*/</b> 68 89 <sup>1</sup> ⁄4"		SQUAR NO. 25	ARD 7' X 7' E CONCRETE CATCH BASIN WITH 6" MOUNTABLE
NDARD C.R.S.I. H	IOOK AND TIE	NOT TO SCALE		D-CB-25SD



IMUM DEPTH NOTE				REV. 9-11-02: CHANGED REINFORCING STEE IN BASE SECTION.	
	S STRUCTURE I	S 28.00′.			REV. 2-13-04: CHANGED REINFORCING STEE IN BASE SECTION.
1	DIMENSI		FOR DESIGN USE ONLY		REV. 5-5-05: ADDED EXTRA STEEL
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		DIMENSION TO SECTION C-C. REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE
	25	59½	4.25		DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL
	32	66½	4.79		NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
	39	731/2	5.33		REV. 3-11-14: ELIMINATED STIRRUPS.
	46	80 <sup>1</sup> ⁄2	5.88		
	53	871⁄2	6.42		
	60	941⁄2	6.96		
	67	1011/2	7.50		CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	74	1081⁄2	8.04	(2)	ALL FLEXIBLE PIPE MATERIALS REQUIRE
	81	115½	8.58	(3)	GASKET. SEE STANDARD DRAWING D-PB-2. CUT-OUT HOLES FOR PRECAST STRUCTURES
	88	1221/2	9.13	$\bigcirc$	TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
	95	1291⁄2	9.67		HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.
	GEN	IERAL NO			
					RETE CATCH BASINS AND ALL FOR ADDITIONAL CONSTRUCTION
	HE OPTION C	)F USING BR HES. IF THI	ICK OR STAN S DIMENSION	IDARD	A INCHES AS LONG AS 25 INCHES IS PRECAST CONCRETE RISER FRAMES. EEDS 6 INCHES, PRECAST CONCRETE

(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

(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:

REINFORCING STEEL: ASTM A615, F<sub>Y</sub> = 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

(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

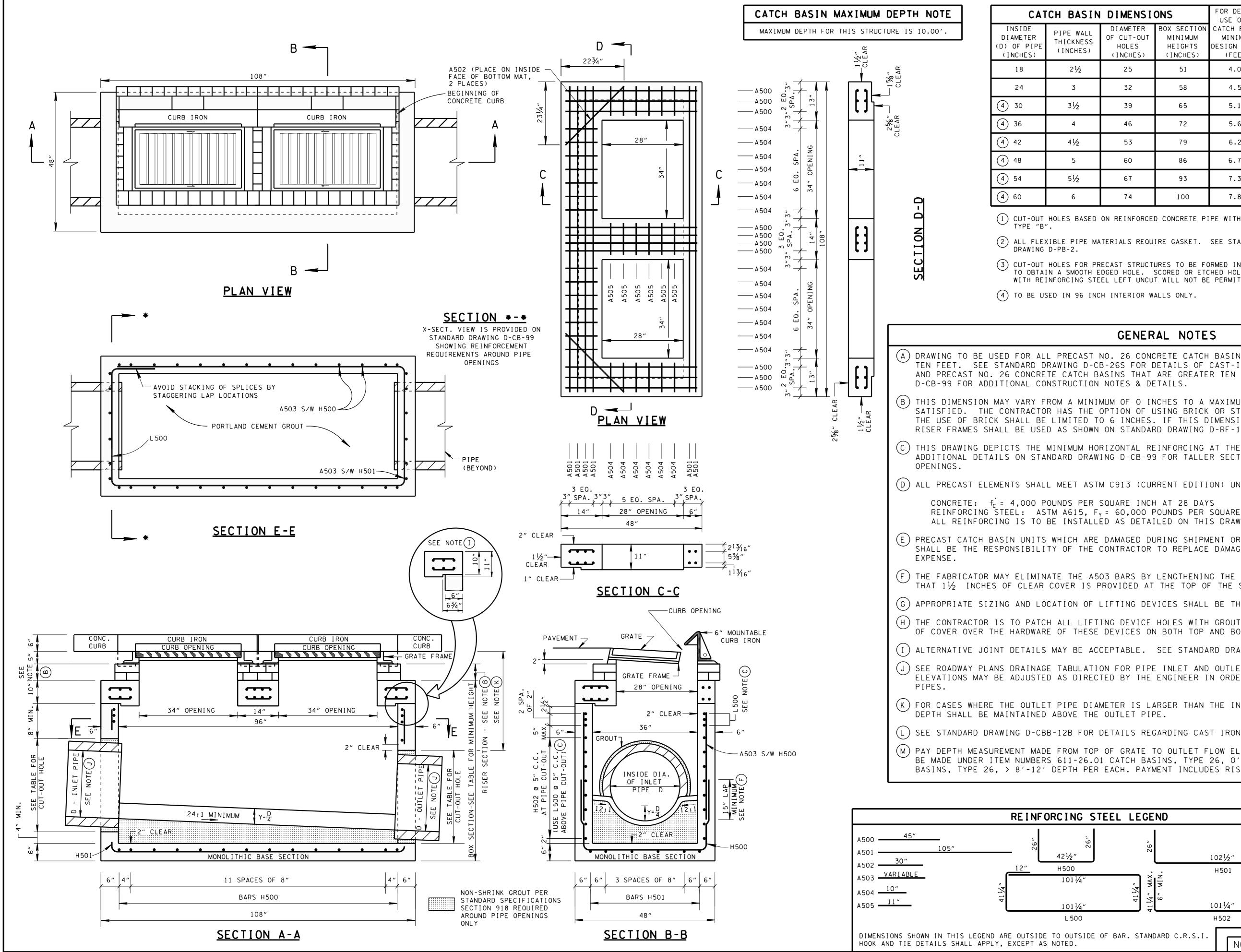
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

(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 11/2 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.

STEEL LEGEND				
32 "	<u>12"</u> 113¾"			REVISION FHWA Al not required.
115″ Н500	33,4 "		STATE Department	OF TENNESSEE OF TRANSPORTATION
NIM "6511 11334"	113 <sup>3</sup> / <sub>4</sub> ″		9′X	TANDARD 9' SQUARE ETE NO. 25
H700 <b>L</b> E TO OUTSIDE OF BAR. LL APPLY, EXCEPT AS NOTED.	L 700			TCH BASIN WITH 6" MOUNTABLE CURB)
	NOT TO SC	CALE	6-30-00	D-CB-25SE



ASIN	DIMENSI	FOR DESIGN USE ONLY		
WALL NESS HES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
1/2	25	51	4.05	
3	32	58	4.59	
/2	39	65	5.13	
ł	46	72	5.67	
/2	53	79	6.21	
5	60	86	6.75	
12	67	93	7.30	
)	74	100	7.84	

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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.

### GENERAL NOTES

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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES 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

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

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

REINFORCING STEEL: ASTM A615,  $F_y = 60,000$  POUNDS PER SQUARE INCH ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT  $1\frac{1}{5}$  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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

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

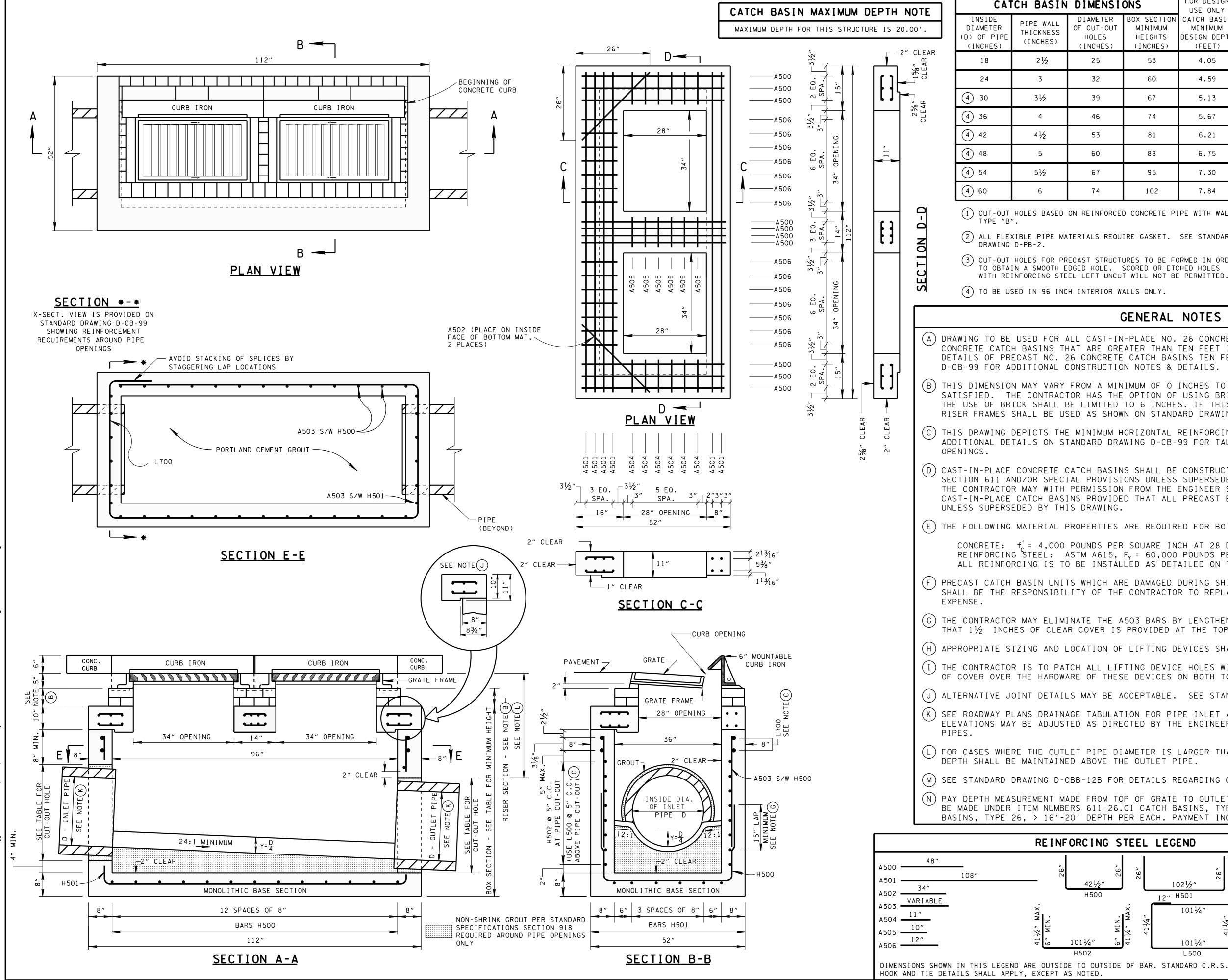
I TOP OF GRATE TO C	OUTLET FLOW ELEVATION.	PAYMENT FOR CATCH BASIN WILL
26.01 CATCH BASINS	5, TYPE 26, 0'-4' DEPTH	THROUGH 611-26.03, CATCH
PER EACH. PAYMENT	INCLUDES RISER SECTION	NS AND GRATES.

			<u> </u>	MINOR	REVISION FHWA
G STEEL	LEGEND			APPROV	AL NOT REQUIRED.
26"	26"	102½″	26″		OF TENNESSEE OF TRANSPORTATION
/4"	411/4" 411/4" MAX. 6" MIN.	Н501 101¼″	6″ MIN. 41 <sup>1</sup> /4″ MAX.	REC CONCR	ARD PRECAST TANGULAR ETE NO. 26 CH BASIN
00		Н502	7	(FOF	USE WITH 6" NTABLE CURB)
SIDE OF BAF	R. STANDARD C.	R.S.I.	TO SCALE	12-18-95	D-CB-26P

- 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS.



ENSI	ONS	FOR DESIGN USE ONLY	□ REV. 3-11-14: ELIMINATED STIRRUPS.		REV. 12-18-95: CHANGED VERTICAL DEPTH REQUIREMENTS. ADDED HANDLING AND CUT-OUT
ETER F-OUT ES HES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)			HOLE NOTES. REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION
5	53	4.05			JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE (H) CHANGED LABEL OF LAST THREE
2	60	4.59			GENERAL NOTES.
Э	67	5.13			REV 10-26-97: CHANGED MINIMUM DEPTH TABLE AND MODIFIED STEEL IN BASE SECTION.
6	74	5.67			REV. 1-19-99: MODIFIED CATCH
3	81	6.21		_	BASIN MINIMUM DEPTH TABLE.
)	88	6.75			REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE ()
7	95	7.30			ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
4	102	7.84			REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE
		PE WITH WALL SEE STANDARD			© REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED
DLE. S	JRES TO BE FO		2		REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC.

#### 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

DRAFTING EDITS.

□ REV. 9-24-12: MODIFIED TOP

SLAB AND MINIMUM DEPTH.

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES I 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

(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)

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

CONCRETE:  $f_{2} = 4,000$  POUNDS PER SQUARE INCH AT 28 DAYS REINFORCING STEEL: ASTM A615, F, = 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

(G) THE CONTRACTOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 11/2 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.

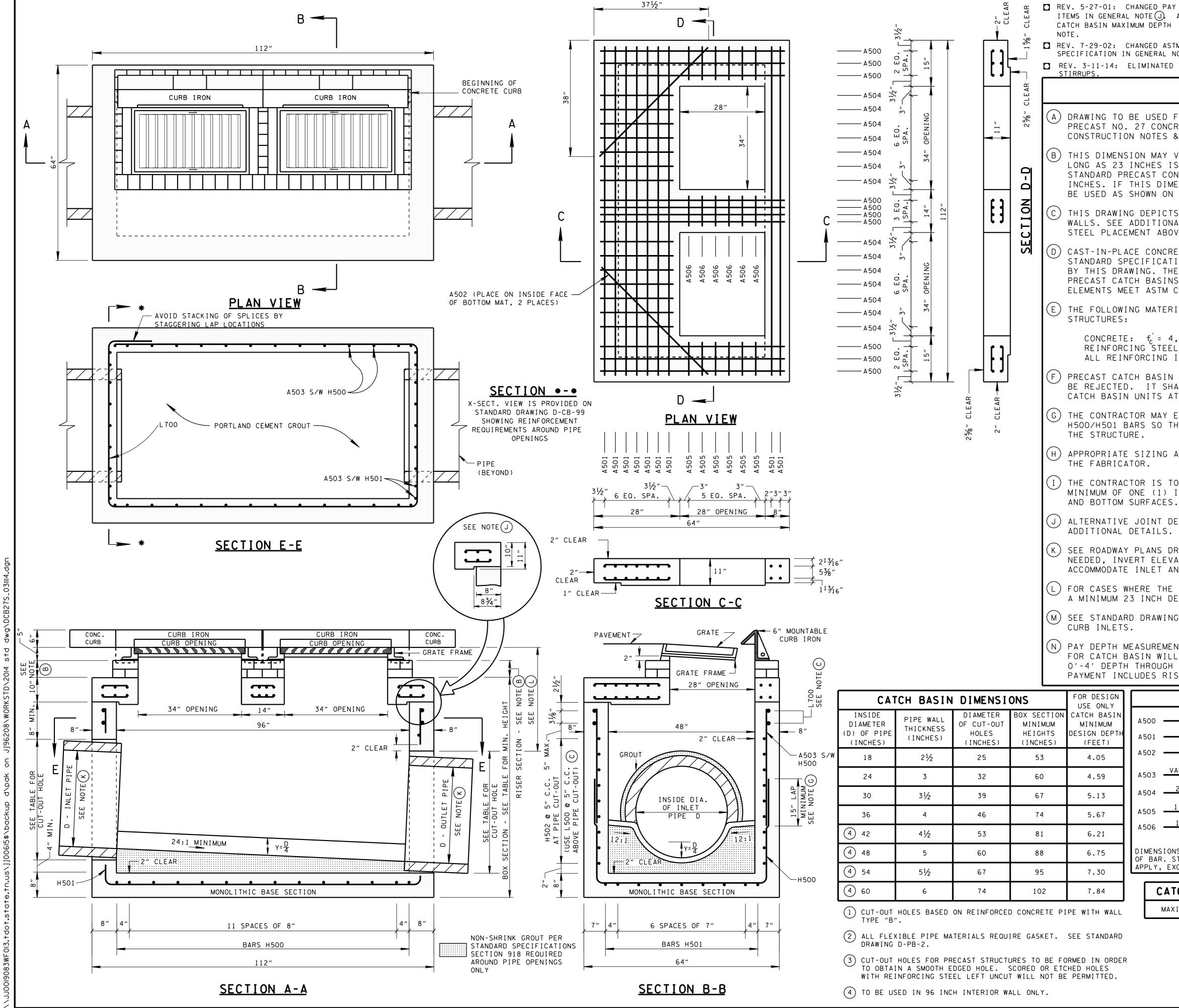
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

(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.

G ST	EEL	LEGEND						EVISION FHWA L NOT REQUIRED.	
26 <i>"</i>	26"	102 <sup>1</sup> ⁄2″	26"	12" 104¼"		sta Departme		df tennessee Of transportati	ON
6" MIN.	74 411/	<u>12"</u> H501 101¼" 101¼" L 500	411/4"	104¼″ L 700	441/4	C ON C	CRE ATC	RECTANGULA TE NO. 26 CH BASIN USE WITH 6" NTABLE CURB)	٩R
SIDE (	)F BAF	R. STANDARD C.	R.S.I.	NOT TO	SCALE	7-29-9	5	D-CB-269	5



NGED PAY OTE J. ADDED M DEPTH NGED ASTM ENERAL 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.	REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
MINATED		

### 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

CONCRETE:  $f_c = 4,000$  POUNDS PER SQUARE INCH AT 28 DAYS REINFORCING STEEL: ASTM A615, F, = 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  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF

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

(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

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

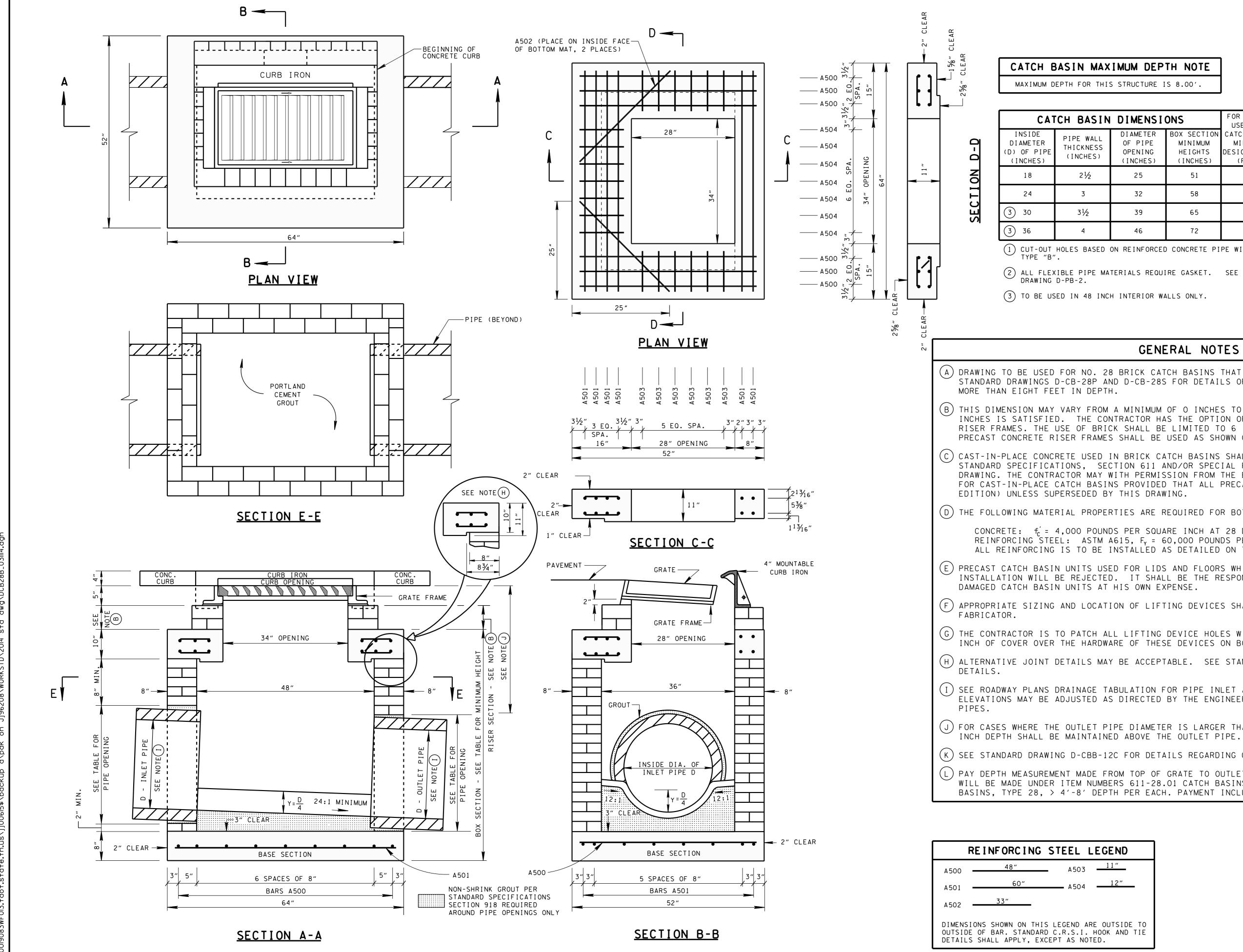
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

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

(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, O'-4' DEPTH THROUGH 611-27.05, CATCH BASINS, TYPE 27, > 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

		REINFORCIN	IG STEEL	LE	GEND		
4500 4501 4502	<u> </u>	<sup>у</sup> 97 Н501	102½″	26"	L 500	<u>2"</u> 101¼" 101¼"	531/4"
4503 4504 4505 4506	VARIABLE 24" 11" 10"	H202 6″ MIN.	101 <sup>1</sup> ⁄4″ م			<u>12"</u> 101 <sup>1</sup> ⁄4" 101 <sup>1</sup> ⁄4"	561/4"
IMENS F BAR PPLY,	SIONS SHOWN ON THIS R. STANDARD C.R.S.I EXCEPT AS NOTED.	LEGEND ARE OUTS . HOOK AND TIE D	4½″ <sup>№</sup> SIDE TO OUTS DETAILS SHAL			REVISION F VAL NOT REQUIF	
	MAXIMUM DEPTH FOR				STATE Department	OF TENNESSEE OF TRANSPORT	
					CONCR CAT (FOR	) RECTANGU ETE NO. 2 CH BASIN USE WITH 6" NTABLE CURB	7
		NC	T TO SCA	LE	10-26-00	D-CB-2	27S



REV.	10-26	5-97 <b>:</b>	СНА	NGED	MINI	MUM	DEPTH
TABLE	AND	MODIF	IED	STEEL	IN	BASE	
SECTIO	ON.						

- ☐ 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
- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

ADDITIONAL MISC. DRAFTING EDITS.

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

ΙN	DIMENSI	FOR DESIGN USE ONLY	
L SS )	DIAMETER OF PIPE OPENING (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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

## 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

CONCRETE: f = 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

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

(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

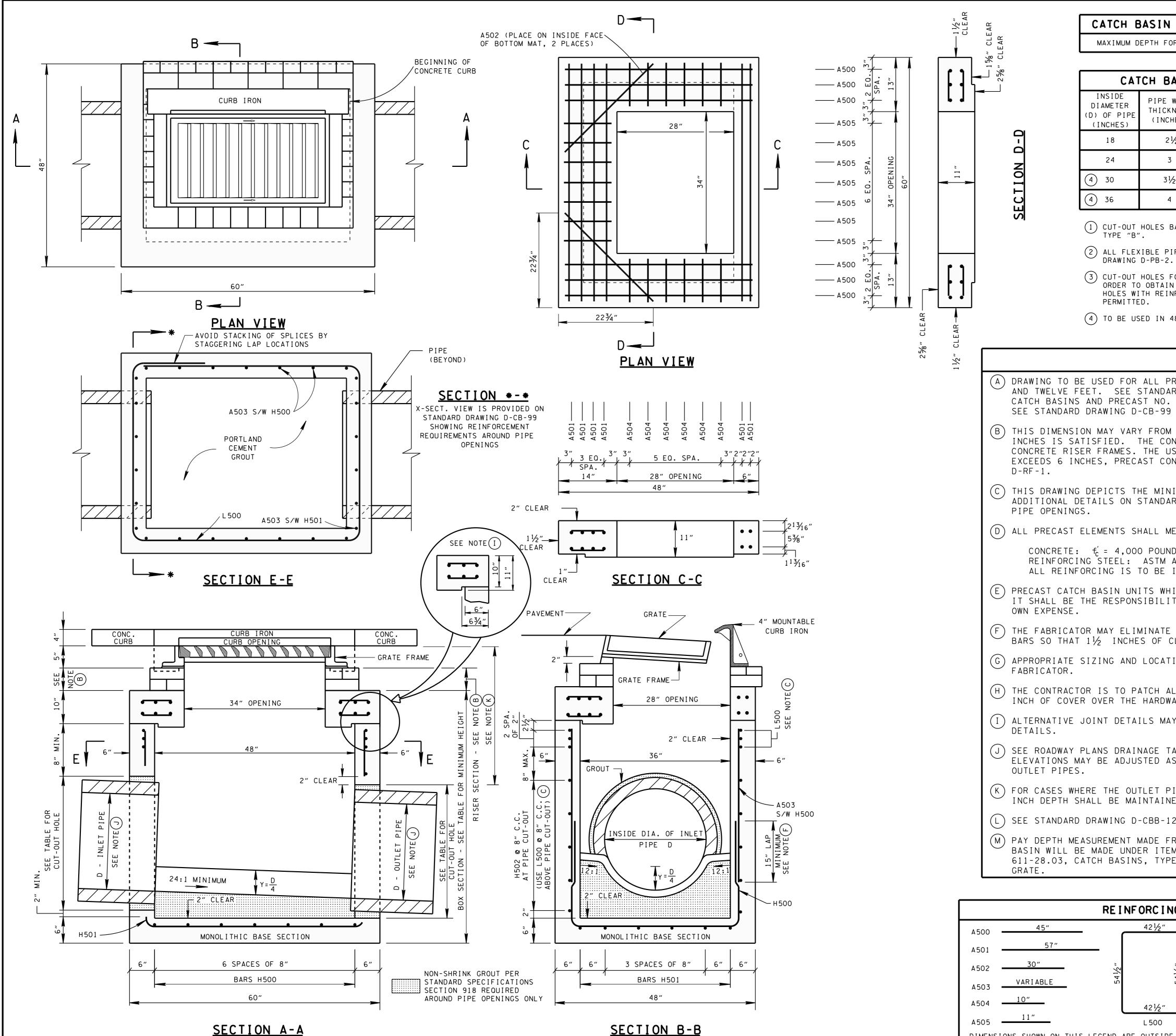
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23

(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.

				REVISION FHWA VAL NOT REQUIRED.
<b>SEND</b>				OF TENNESSEE OF TRANSPORTATION
12" DUTSIDE TO DK AND TIE			RECTAN CA (FOF	TANDARD GULAR BRICK NO. 28 TCH BASIN USE WITH 4" UNTABLE CURB)
	NOT TO	SCALE	7-29-96	D-CB-28B



DIMENSIONS SHOWN ON THIS LEGEND ARE OUTSIDE C.R.S.I. HOOK AND TIE DETAILS SHALL APPLY,

### CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'

H BASIN	FOR DESIGN USE ONLY			
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTI (FEET)	
2 <sup>1</sup> /2	25	49	3.88	
3	32	56	4.42	
31/2	39	63	4.96	
4	46	70	5.50	

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

(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.
- **C** 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. 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- ☐ REV. 3-11-14: ELIMINATED STIRRUPS.

### 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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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

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

CONCRETE:  $f_r = 4,000$  POUNDS PER SQUARE INCH AT 28 DAYS REINFORCING STEEL: ASTM A615, F, = 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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT  $1\frac{1}{2}$  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

(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

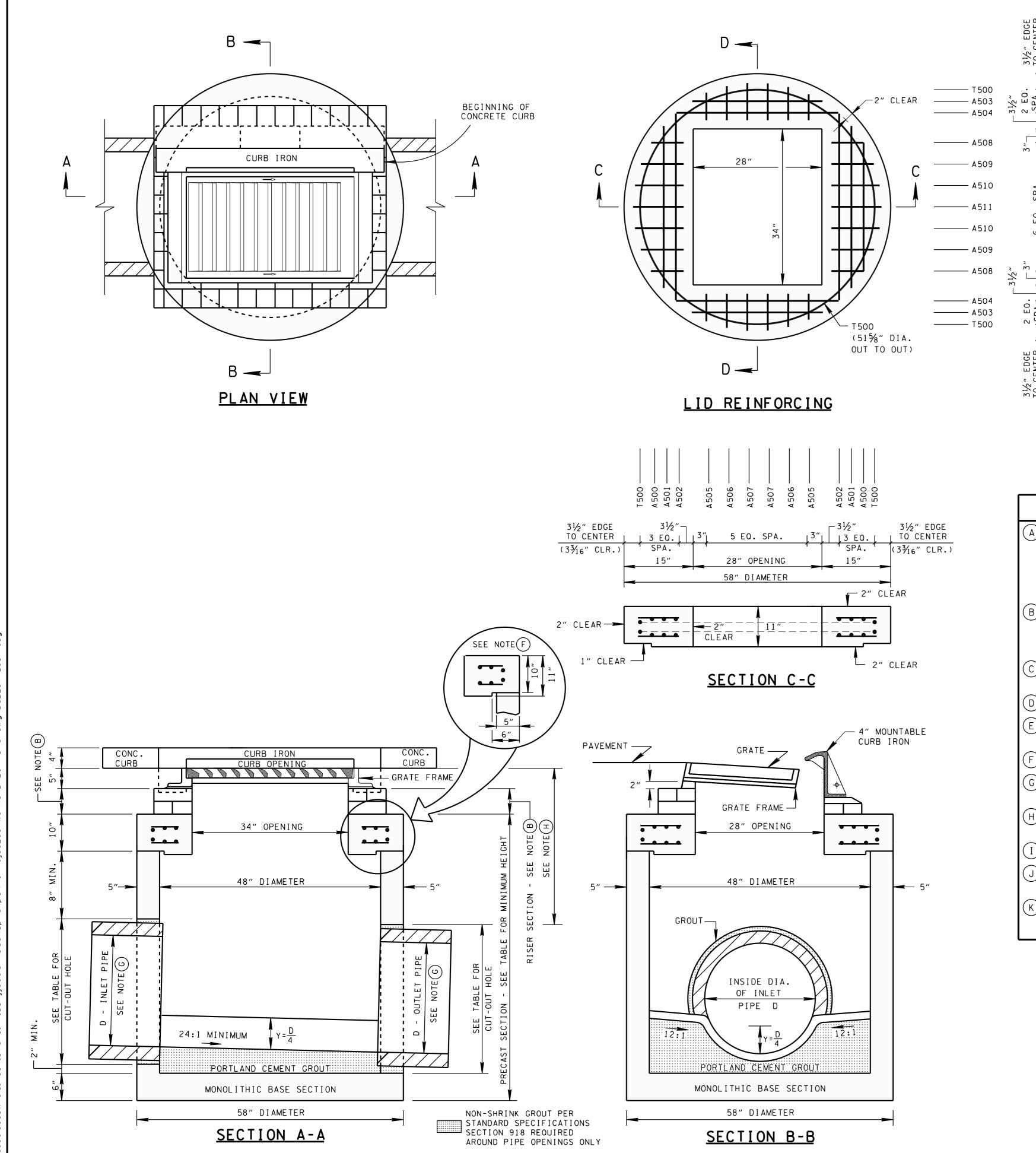
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND

(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-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, O'-4' DEPTH THROUGH 611-28.03, CATCH BASINS, TYPE 28, > 8'-12' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND

NG STEEL LEGEND			REVISION FHWA Al not required.
	6" MIN. 6" MIN.	STATE Department	OF TENNESSEE OF TRANSPORTATION
H500 <sup>*</sup> 97 <sup>*</sup>	54½″ ♀	REC CONCF CA1	ARD PRECAST CTANGULAR RETE NO. 28 ICH BASIN R USE WITH 4" INTABLE CURB)
E TO OUTSIDE OF BAR. STANDARD EXCEPT AS NOTED.	NOT TO SCALE	12-18-95	D-CB-28P



9:50 013.1

		C
A	ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURR BY THIS DRAWING.	E
	CONCRETE: f <sup>'</sup> = 4,000 POUNDS PER SQUARE IN REINFORCING STEEL: ASTM A615, F <sub>,</sub> = 60,000 ALL REINFORCING IS TO BE INSTALLED AS DET	
B	THIS DIMENSION MAY VARY FROM A MINIMUM OF O SATISFIED. THE CONTRACTOR HAS THE OPTION OF BRICK SHALL BE LIMITED TO 6 INCHES. IF THIS USED AS SHOWN ON STANDARD DRAWING D-RF-1.	
0	PRECAST CATCH BASIN UNITS WHICH ARE DAMAGED RESPONSIBILITY OF THE CONTRACTOR TO REPLACE	
D	APPROPRIATE SIZING AND LOCATION OF LIFTING D	E
E	THE CONTRACTOR IS TO PATCH ALL LIFTING DEVIC OVER THE HARDWARE OF THESE DEVICES ON BOTH T	
F	ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE.	
G	SEE ROADWAY PLANS DRAINAGE TABULATION FOR PI BE ADJUSTED AS DIRECTED BY THE ENGINEER IN O	
H	FOR CASES WHERE THE OUTLET PIPE DIAMETER IS BE MAINTAINED ABOVE THE OUTLET PIPE.	L
	SEE STANDARD DRAWING D-CBB-12C FOR DETAILS R	E
J	SEE STANDARD DRAWING D-CB-28RB FOR DETAILS R 4" MOUNTABLE CURB).	E
K	PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE UNDER ITEM NUMBERS 611-28.01 CATCH BASINS, T 16'-20' DEPTH PER EACH. PAYMENT INCLUDES RIS	Y

3½" EDGE TO CENTER :3¾6" CLR.

31/2 TO 33/16

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NO

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CATCH	BASIN	MAXIMUM	DEPTH	NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'.

CATCH

INSIDE

DIAMETER

(D) OF PIPE

(INCHES)

18

24

DRAWING D-PB-2.

"B".

CH BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY	
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
21⁄2	25	49	3.88	
3	32	56	4.42	

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

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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.
- **C** REV. 12-18-96: REMOVED 0.5" PREMOLDED FIBER EXPANSION JOINT FROM SECTION "B-B". REMOVED OLD GENERAL NOTE FCHANGED LABEL OF LAST FOUR GENERAL NOTES.
- □ REV. 4-15-97: CHANGED CATCH BASIN DIMENSION TABLE.
- **C** 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

## GENERAL NOTES

ENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

ICH AT 28 DAYS POUNDS PER SQUARE INCH AILED ON THIS DRAWING.

INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE

DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

EVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

E HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OP AND BOTTOM SURFACES.

SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

PE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY RDER TO ACCOMMODATE INLET AND OUTLET PIPES.

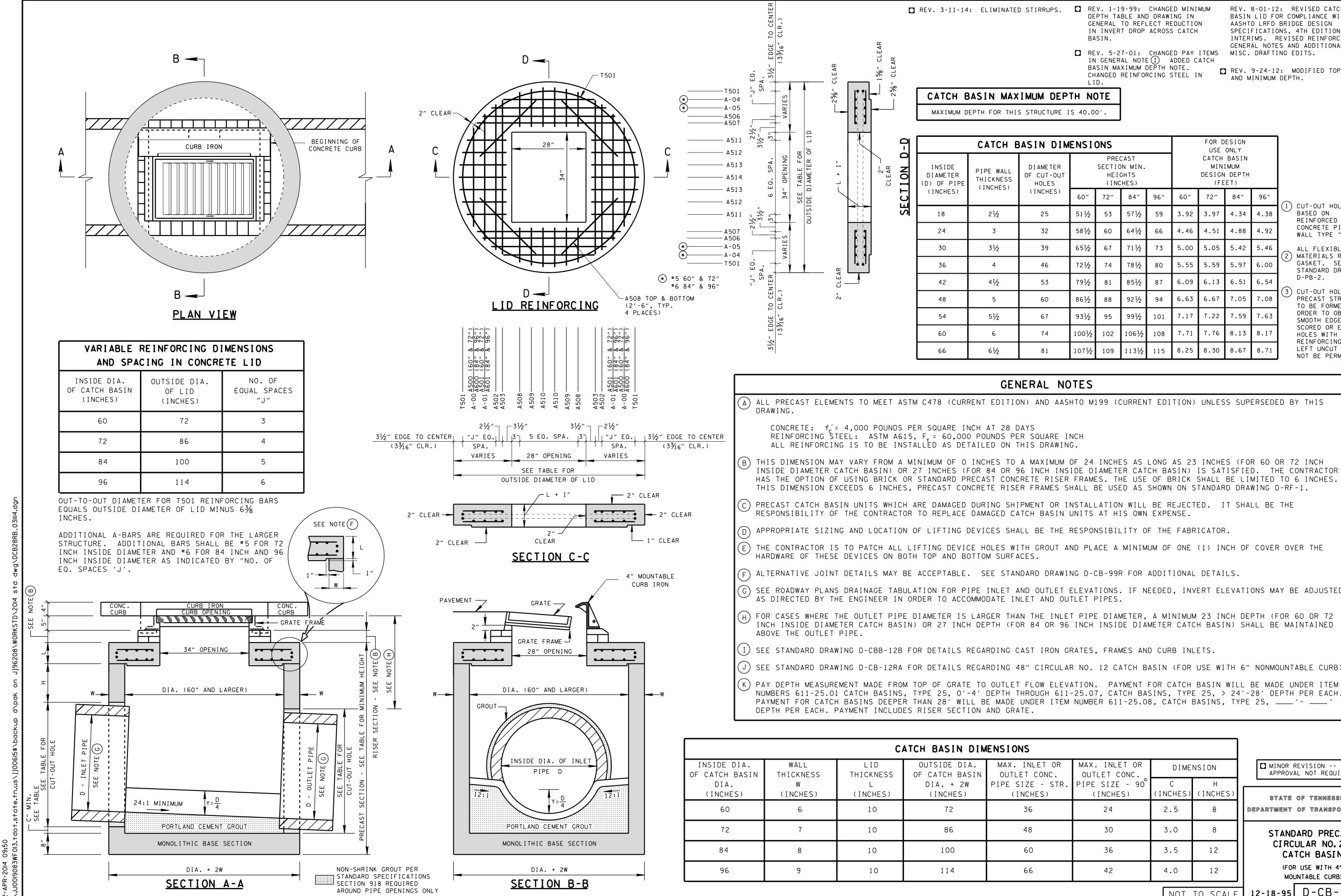
LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL

EGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

EGARDING 60" AND LARGER CIRCULAR NO. 12 CATCH BASIN (FOR USE WITH

TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE YPE 28, 0'-4' DEPTH THROUGH 611-28.05 CATCH BASINS, TYPE 28, > ER SECTION AND GRATE.

	MINOR REVISION FHWA APPROVAL NOT REQUIRED.			
	STATE Department			
	48" CI F CA (FOR	OARD PRECAST RCULAR NO.28 TCH BASIN USE WITH 4" NTABLE CURB)		
NOT TO SCALE	12-18-95	D-CB-28RA		



- □ REV. 3-11-14: ELIMINATED STIRRUPS. □ 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
     REV. 9-24-12: MODIFIE AND MINIMUM DEPTH. 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
  - □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

BASIN DIMENSIONS         FOR DESIGN USE ONLY CATCH BASIN MINIMUM DESIGN DEPTH (FEET)         Image: Cast Catch Basin MINIMUM DESIGN DEPTH (FEET)         Image: Cast Cast Concret WALL TY           39         65½         67         71½         73         5.00         5.05         5.42         5.46         2         ALL FLE MATERIA CaskET. STANDAR D-PB-2.         3         CUT-OUT PRECAST TO BE F		<u> </u>									
DIAMETER OF CUT-OUT HOLES (INCHES)         PRECAST SECTION MIN. HEIGHTS (INCHES)         CATCH BASIN MINIMUM DESIGN DEPTH (FEET)         1 <th1< th=""> <th1< th=""> <th1< th=""> <th1< th=""><th colspan="4">BASIN DIMENSIONS</th><th></th><th></th></th1<></th1<></th1<></th1<>	BASIN DIMENSIONS										
60"       72"       84"       96"       60"       72"       84"       96"         25       51½       53       57½       59       3.92       3.97       4.34       4.38         32       58½       60       64½       66       4.46       4.51       4.88       4.92         39       65½       67       71½       73       5.00       5.05       5.42       5.46         46       72½       74       78½       80       5.55       5.59       5.97       6.00         53       79½       81       85½       87       6.09       6.13       6.51       6.54         60       86½       88       92½       94       6.63       6.67       7.05       7.08	OF		BASIN IMUM I DEPTH	CATCH MINI DESIGN			ON MIN. GHTS	SECTIO HEI		OF CUT-OUT HOLES	
25       51½       53       57½       59       3.92       3.97       4.34       4.38       BASED O REINFOR CONCRET WALL TY         32       58½       60       64½       66       4.46       4.51       4.88       4.92         39       65½       67       71½       73       5.00       5.05       5.42       5.46         46       72½       74       78½       80       5.55       5.59       5.97       6.00         53       79½       81       85½       87       6.09       6.13       6.51       6.54         60       86½       88       92½       94       6.63       6.67       7.05       7.08			84″	72″	60"	96″	84″	72″	60″	(INCHES)	
32       58½       60       64½       66       4.46       4.51       4.88       4.92       CONCRET WALL TY         39       65½       67       71½       73       5.00       5.05       5.42       5.46       2.46         46       72½       74       78½       80       5.55       5.59       5.97       6.00       2.41       ALL FLE MATERIA GASKET. STANDAR D-PB-2.         53       79½       81       85½       87       6.09       6.13       6.51       6.54       3.01       3.01       3.01       3.01       3.01       3.01       3.01       3.01       0.01       3.01       0.01       3.01       0.01       3.01       0.01       3.01       0.01		4.38 B	4.34	3.97	3.92	59	57½	53	51 ½	25	
46       72 <sup>1</sup> / <sub>2</sub> 74       78 <sup>1</sup> / <sub>2</sub> 80       5.55       5.59       5.97       6.00       2       MATERIA GASKET. STANDAR D-PB-2.         53       79 <sup>1</sup> / <sub>2</sub> 81       85 <sup>1</sup> / <sub>2</sub> 87       6.09       6.13       6.51       6.54       3       CUT-OUT PRECAST		4 92 C	4.88	4.51	4.46	66	64½	60	58½	32	
46       72 <sup>1</sup> / <sub>2</sub> 74       78 <sup>1</sup> / <sub>2</sub> 80       5.55       5.59       5.97       6.00       GASKET. STANDAR D-PB-2.         53       79 <sup>1</sup> / <sub>2</sub> 81       85 <sup>1</sup> / <sub>2</sub> 87       6.09       6.13       6.51       6.54       O-PB-2.         60       86 <sup>1</sup> / <sub>2</sub> 88       92 <sup>1</sup> / <sub>2</sub> 94       6.63       6.67       7.05       7.08       OUT-OUT PRECAST			5.42	5.05	5.00	73	71 <sup>1</sup> /2	67	65½	39	
53       79½       81       85½       87       6.09       6.13       6.51       6.54         60       86½       88       92½       94       6.63       6.67       7.05       7.08       3       CUT-OUT PRECAST		6.00 G	5.97	5.59	5.55	80	78½	74	72 <sup>1</sup> ⁄2	46	
60 86 <sup>1</sup> / <sub>2</sub> 88 92 <sup>1</sup> / <sub>2</sub> 94 6.63 6.67 7.05 7.08 PRECAST		6.54	6.51	6.13	6.09	87	85½	81	79½	53	
		7.08 💛 P	7.05	6.67	6.63	94	92 <sup>1</sup> ⁄2	88	86½	60	
67 93½ 95 99½ 101 7.17 7.22 7.59 7.63 ORDER T SMOOTH		7.63 0	7.59	7.22	7.17	101	99 <sup>1</sup> ⁄2	95	93½	67	
74         100½         102         106½         108         7.71         7.76         8.13         8.17         SCORED HOLES W REINFOR		8.17 H	8.13	7.76	7.71	108	106½	102	100½	74	
81 107 <sup>1</sup> / <sub>2</sub> 109 113 <sup>1</sup> / <sub>2</sub> 115 8.25 8.30 8.67 8.71 LEFT UN NOT BE		8.71 L	8.67	8.30	8.25	115	1131/2	109	1071/2	81	

- HOLES ΈD PIPE WITH PE "B".
- XIBLE PIPE LS REQUIRE SEE DRAWING
- HOLES FOR STRUCTURES D OBTAIN A EDGED HOLE DR ETCHED ТΗ ING STEEL CUT WILL PERMITTED.

## GENERAL NOTES

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 84 OR 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.

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE

G SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED

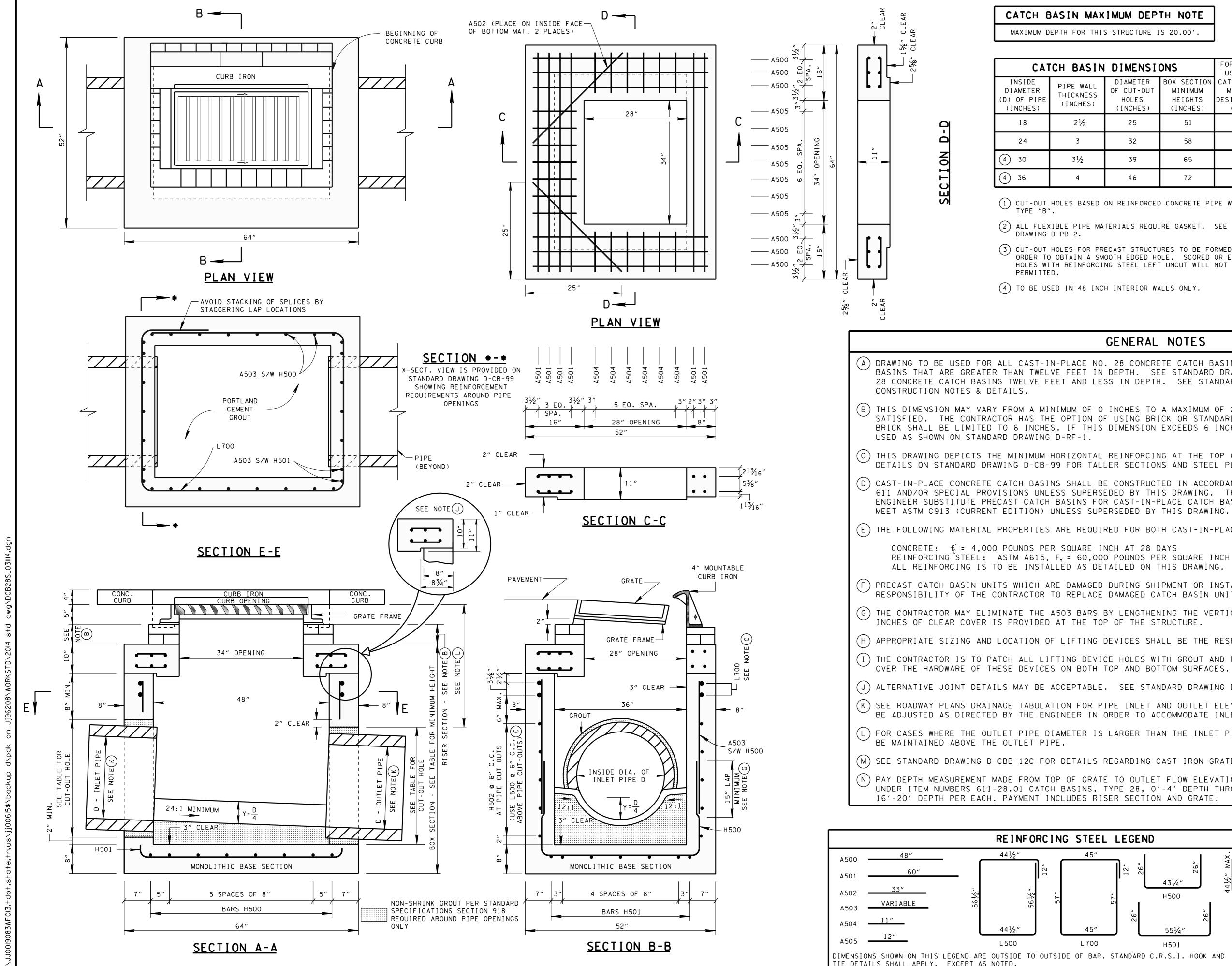
INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH BASIN) SHALL BE MAINTAINED

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

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, \_\_\_\_'- \_\_\_\_

IS				
INLET OR T CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION		
IZE - STR. NCHES)	PIPE SIZE - 90° (INCHES)	C (INCHES)	H (INCHES)	
36	24	2.5	8	
48	30	3.0	8	
60	36	3.5	12	
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				



TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

L700

XI	MUM	DEF	۲۲	NOTE	
HIS	STRUC	TURE	IS	20.00′.	

[ N	DIMENSI	FOR DESIGN USE ONLY	
- 5	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	51	3.88
	32	58	4.42
	39	65	4.96
	46	72	5.50

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

(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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- ☐ REV. 3-11-14: ELIMINATED STIRRUPS.

## 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

(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

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

(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 11/2

(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

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

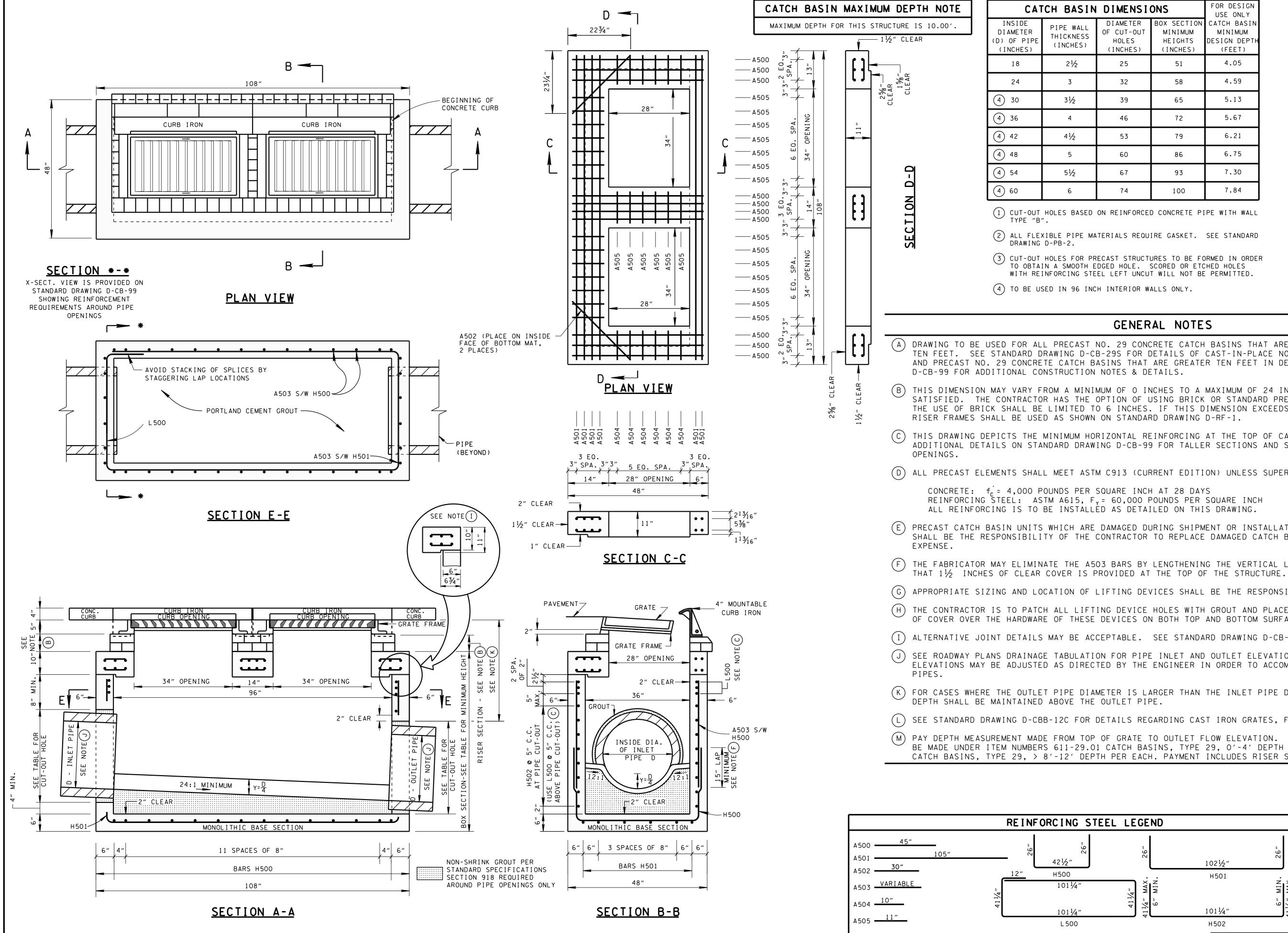
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH SHALL

(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, >

EL LEGEND			REVISION FHWA NL NOT REQUIRED.
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	6" MIN. 6" MIN. 1 <u>/</u> 2" MAX.	STATE Department	OF TENNESSEE OF TRANSPORTATION
<sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup> <sup>1</sup>	<u>56½</u> ″ ₹	REC CONCR CAT	ANDARD TANGULAR ETE NO. 28 CH BASIN USE WITH 4"
Н 501		MOL	INTABLE CURB)
R. STANDARD C.R.S.I. HOOK AND	NOT TO SCALE	5-27-95	D-CB-28S



L 500

DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTS HOOK AND TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

ASIN	DIMENSI	FOR DESIGN USE ONLY	
WALL NESS HES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
1/2	25	51	4.05
	32	58	4.59
2	39	65	5.13
	46	72	5.67
2	53	79	6.21
	60	86	6.75
/2	67	93	7.30
	74	100	7.84

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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 (G) 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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

#### GENERAL NOTES

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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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.

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

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

REINFORCING STEEL: ASTM A615, F, = 60,000 POUNDS PER SQUARE INCH ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

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

THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO

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

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.

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

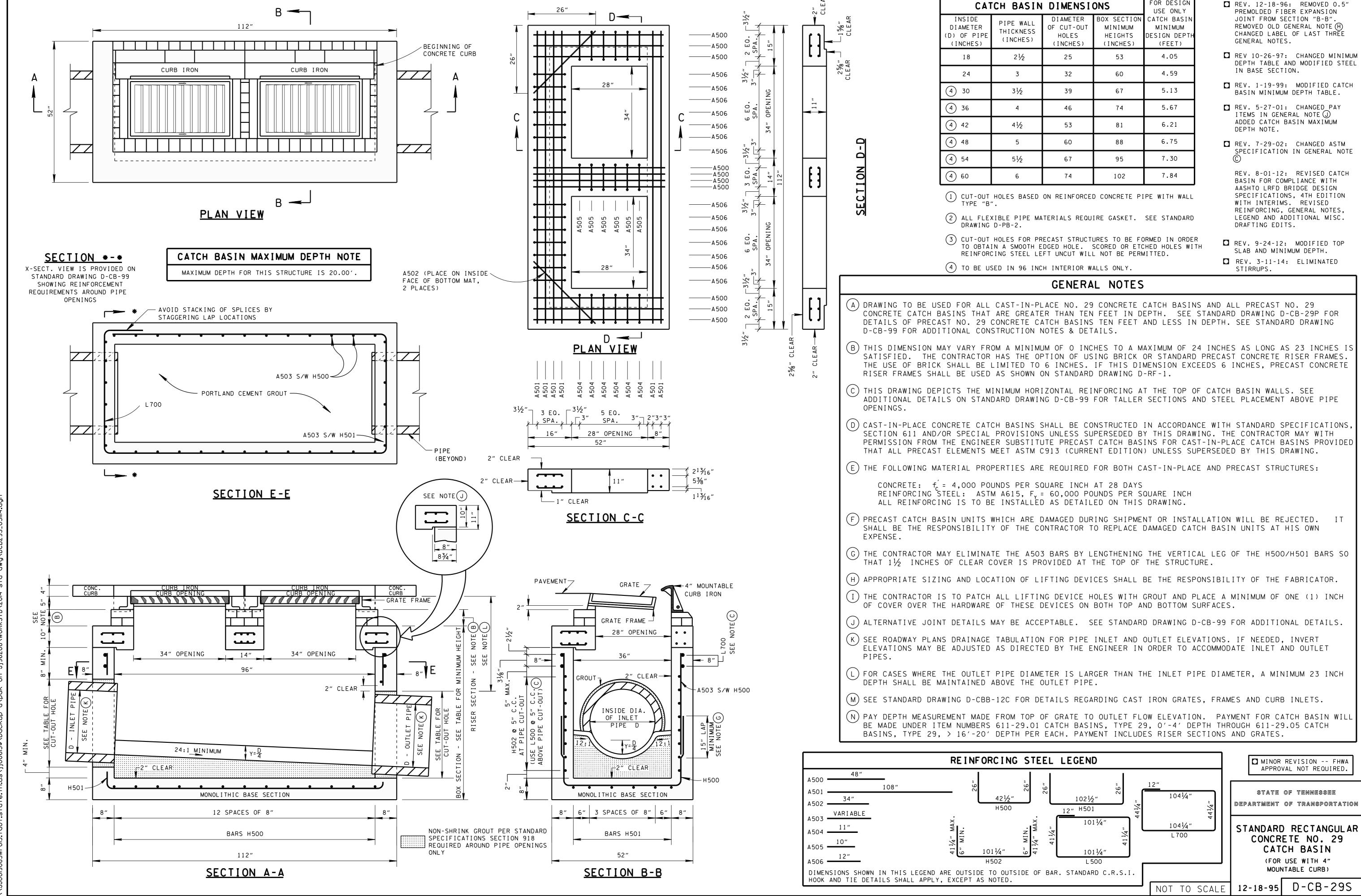
SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

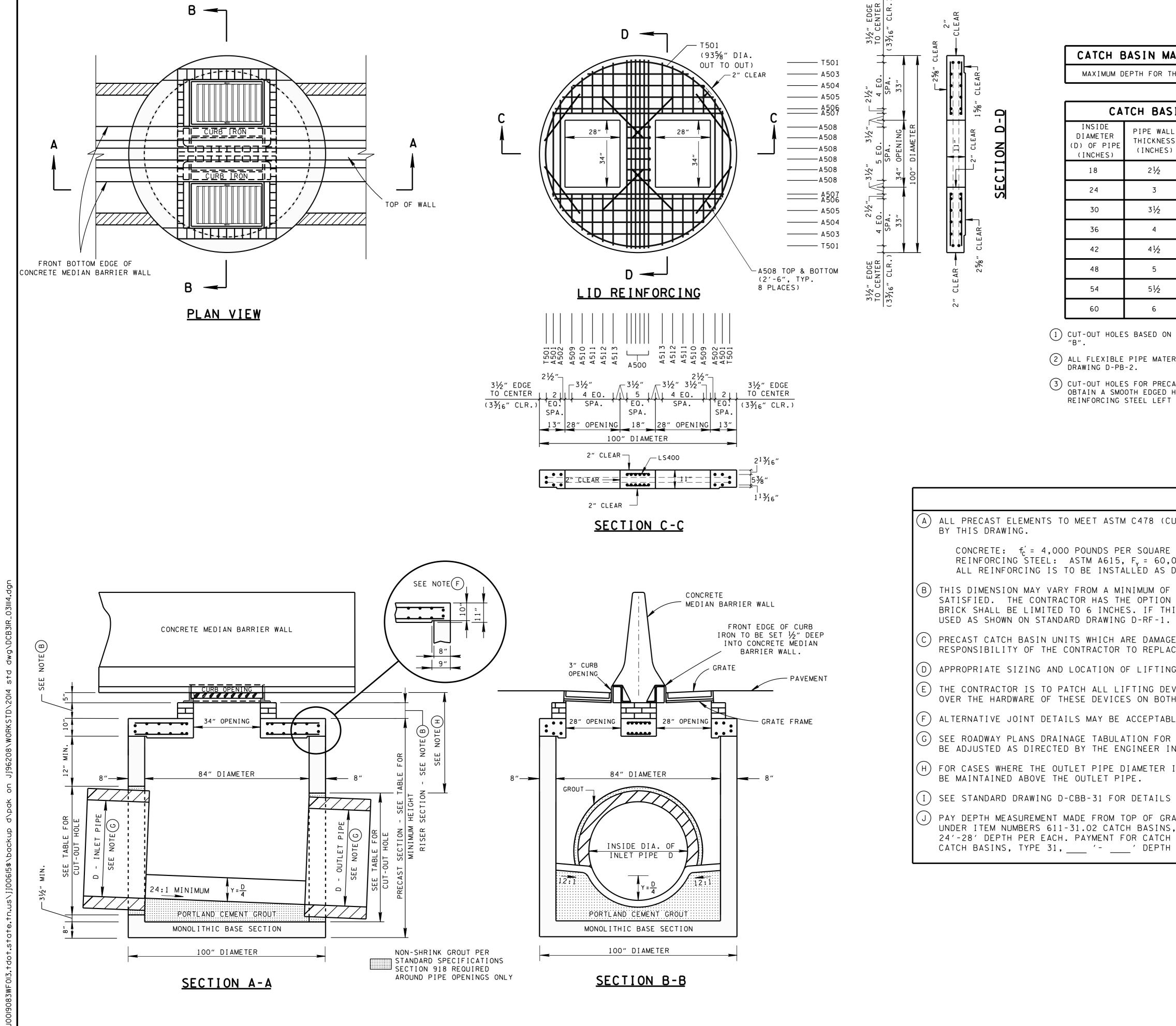
SEE STANDARD DRAWING D-CBB-12C FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

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.

G STEEL	LEGEND				REVISION FHWA Al NOT REQUIRED.
26"	26"	102 <sup>1</sup> ⁄2″	26"		OF TENNESSEE OF TRANSPORTATION
4" 4"	41 <i>1/4 "</i> 41 <i>1/4 "</i> MAX. 6 " MIN.	H501 <u>101¼″</u> H502	6" MIN. 41 <sup>1</sup> /4" MAX.	REC CONCR CAT (FOR	ARD PRECAST TANGULAR ETE NO. 29 CH BASIN USE WITH 4" NTABLE CURB)
SIDE OF BAR	. STANDARD C.R.S.I	· NOT T	TO SCALE	12-18-95	D-CB-29P



BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PE WALL ICKNESS NCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21/2	25	53	4.05
3	32	60	4.59
31/2	39	67	5.13
4	46	74	5.67
4 <sup>1</sup> /2	53	81	6.21
5	60	88	6.75
5½	67	95	7.30
6	74	102	7.84



XI	MUM	DEF	PTH	4	NO	ΤE	
HIS	STRUC	TURE	ΙS	4(	0.00	'•	

IN	N DIMESIO	FOR DESIGN USE ONLY	
-	DIAMETER OF CUT-OUT HOLES (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
	25	62½	4.34
	32	69½	4.88
	39	76½	5.42
	46	831/2	5.97
	53	90½	6.51
	60	971⁄2	7.05
	67	104½	7.59
	74	1111/2	8.13

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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
- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

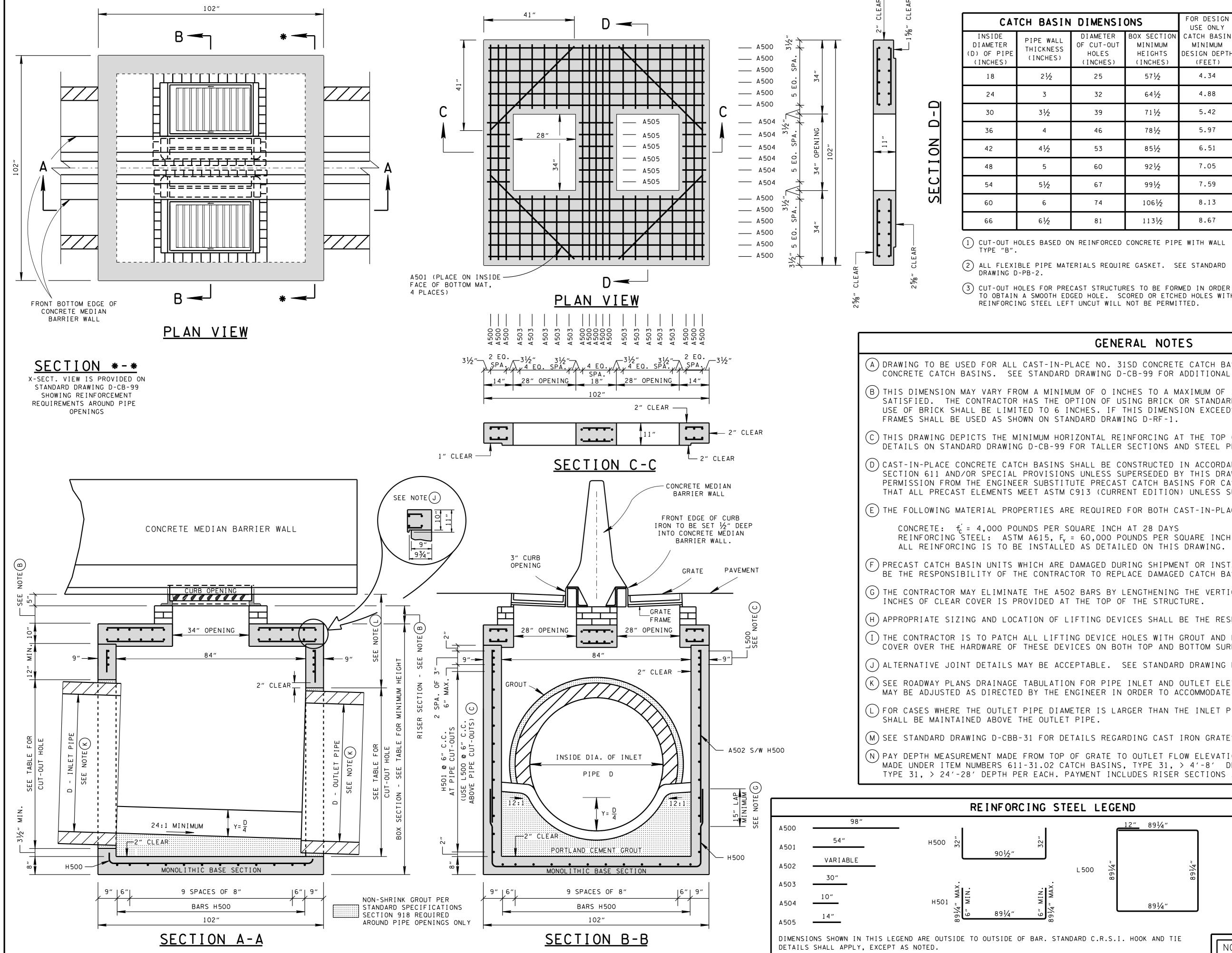
REINFORCING, GENERAL NOTES AND

ADDITIONAL MISC. DRAFTING EDITS.

REV. 3-11-14: ELIMINATED STIRRUPS.

GENERAL NOTES
JRRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED
INCH AT 28 DAYS Doo pounds per square inch Detailed on this drawing.
O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 27 INCHES IS OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE USE OF IS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER FRAMES SHALL BE
ED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE CE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.
G DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
VICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER H TOP AND BOTTOM SURFACES.
.E. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.
PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY N ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.
IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH DEPTH SHALL
REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.
ATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE , TYPE 31, > 4'-8' DEPTH THROUGH 611-31.07, CATCH BASINS, TYPE 31, > BASINS DEEPER THAN 28' WILL BE MADE UNDER ITEM NUMBER 611-31.08, PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.
MINOR REVISION FHWA APPROVAL NOT REQUIRED.
STATE OF TENNESSEE

		OF TRANSPORTATION
		ARD PRECAST
		ULAR NO. 31
	CA	TCH BASIN
		UNDER CONCRETE BARRIER WALL)
NOT TO SCALE	7-31-86	D-CB-31R



N	DIMENSI	FOR DESIGN USE ONLY	
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	571/2	4.34
	32	64 <sup>1</sup> /2	4.88
	39	71 <sup>1</sup> /2	5.42
	46	78½	5.97
	53	85½	6.51
	60	921⁄2	7.05
	67	99 <sup>1</sup> ⁄2	7.59
	74	1061/2	8.13
	81	113½	8.67

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.



### 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 O 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

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:

(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  $1\frac{1}{2}$ 

(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.

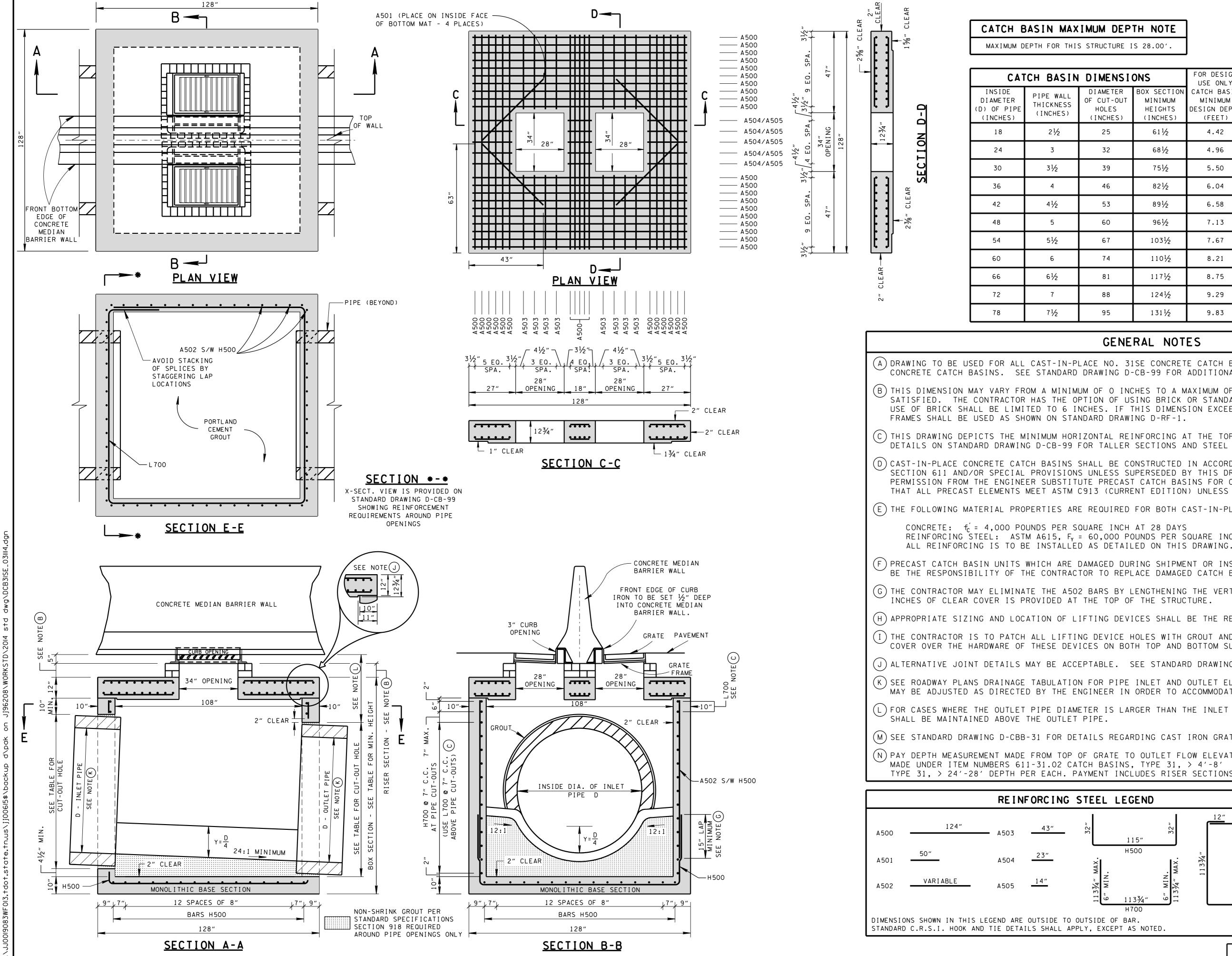
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

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

(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.

EEL LEGEND	MINOR REVISION FHWA
<u>12″</u> 89¼″	APPROVAL NOT REQUIRED.
L 500 × ×	STATE OF TENNESSEE Department of transportation
L 500 <sup>*</sup> 768 <sup>*</sup> 7168 89 <sup>1</sup> ⁄4″	STANDARD 7' X 7' SOUARE CONCRETE NO. 31 CATCH BASIN
	(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
DARD C.R.S.I. HOOK AND TIE	NOT TO SCALE 5-27-95 D-CB-31SD



				REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE () ADDED CATCH BASIN
IMUM DEP	TH NOTE			MAXIMUM DEPTH NOTE.
S STRUCTURE I	S 28.00′.			REV. 5-30-02: MODIFIED REINFORCING STEEL.
DIMENSI	ONS	FOR DESIGN USE ONLY		REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)			REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION.
25	611/2	4.42		REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
32	68½	4.96		REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE
39	75½	5.50		DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL
46	82 <sup>1</sup> ⁄2	6.04		NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
53	89 <sup>1</sup> ⁄2	6.58		REV. 3-11-14: ELIMINATED STIRRUPS.
60	96 <sup>1</sup> ⁄2	7.13		
67	103½	7.67	1	CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
74	1101/2	8.21	(2)	ALL FLEXIBLE PIPE MATERIALS REQUIRE
81	1171/2	8.75	(3)	GASKET. SEE STANDARD DRAWING D-PB-2. CUT-OUT HOLES FOR PRECAST STRUCTURES
88	1241/2	9.29		TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
95	1311/2	9.83		HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

#### 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 O 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

(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:

REINFORCING STEEL: ASTM A615,  $F_{y}$  = 60,000 POUNDS PER SQUARE INCH

(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  $1\frac{1}{2}$ 

(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.

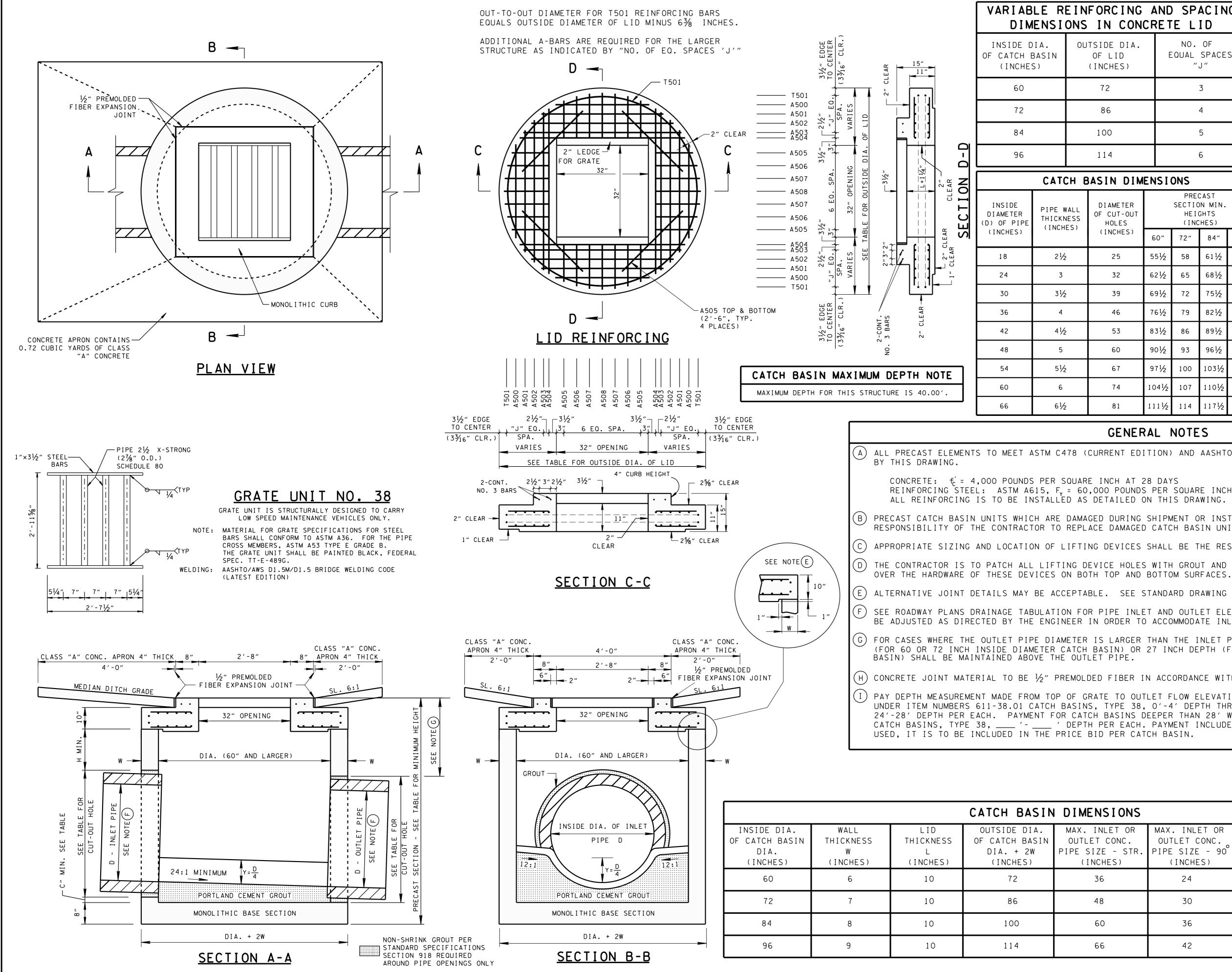
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

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

(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.

STEEL LEGEND		
32"	<u>12" 113¾"</u>	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
115" H500 	1 3 3 4	STATE OF TENNESSEE Department of transportation
H100	<u>113¾"</u> L700	STANDARD 9'X9' SOUARE CONCRETE
DUTSIDE OF BAR. PLY, EXCEPT AS NOTED.		NO. 31 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
	NOT TO SCALE	10-26-99 D-CB-31SE



ORCING				G			DE DE RE	PTH IN	1-12: REVISED_CATCH
SIDE DIA. NO. OF OF LID EQUAL SPACES INCHES) "J"			S			AA SP WI RE AN	SHTO L ECIFIC TH INT INFORC ID ADDI	D FOR COMPLIANCE WITH RFD BRIDGE DESIGN ATIONS, 4TH EDITION ERIMS. REVISED ING, GENERAL NOTES TIONAL MISC. DRAFTING	
72	72 3						🗖 RE		4-12: MODIFIED TOP
86		4					_		MINIMUM DEPTH.
100		5						TIRRUF	-11-14: ELIMINATED PS.
114		6							
ASIN DIM	ENSI	ONS				USE	E S I GN ONL Y		
DIAMETER OF CUT-OUT HOLES		PRECAST SECTION MIN. HEIGHTS (INCHES)				CATCH MIN DESIGN (FE			
(INCHES)	60″	72″	84″	96″	60″	72"	84"	96″	
25	55½	58	61½	63	3.88	4.26	4.27	4.29	(1) CUT-OUT HOLES BASED ON REINFORCED
32	62½	65	68½	70	4.42	4.80	4.83	4.83	CONCRETE PIPE WITH WALL TYPE "B".
39	69½	72	75½	77	4.97	5.34	5.38	5.38	ALL FLEXIBLE PIPE
46	76 <sup>1</sup> ⁄2	79	82 <sup>1</sup> ⁄2	84	5.51	5.88	5.92	5.92	GASKET. SEE STANDARD DRAWING
53	83½	86	89½	91	6.05	6.42	6.46	4.46	D-PB-2.
60	90½	93	96 <sup>1</sup> ⁄2	98	6.59	6.97	7.00	7.00	PRECAST STRUCTURES TO BE FORMED IN
67	97½	100	103½	105	7.13	7.51	7.54	7.54	ORDER TO OBTAIN A SMOOTH EDGED HOLE.
74	104½	107	110½	112	7.67	8.05	8.08	8.08	SCORED OR ETCHED HOLES WITH REINFORCING STEEL
81	1111/2	114	117 <sup>1</sup> ⁄2	119	8.22	8.59	8.63	8.63	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

(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.

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

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

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

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.

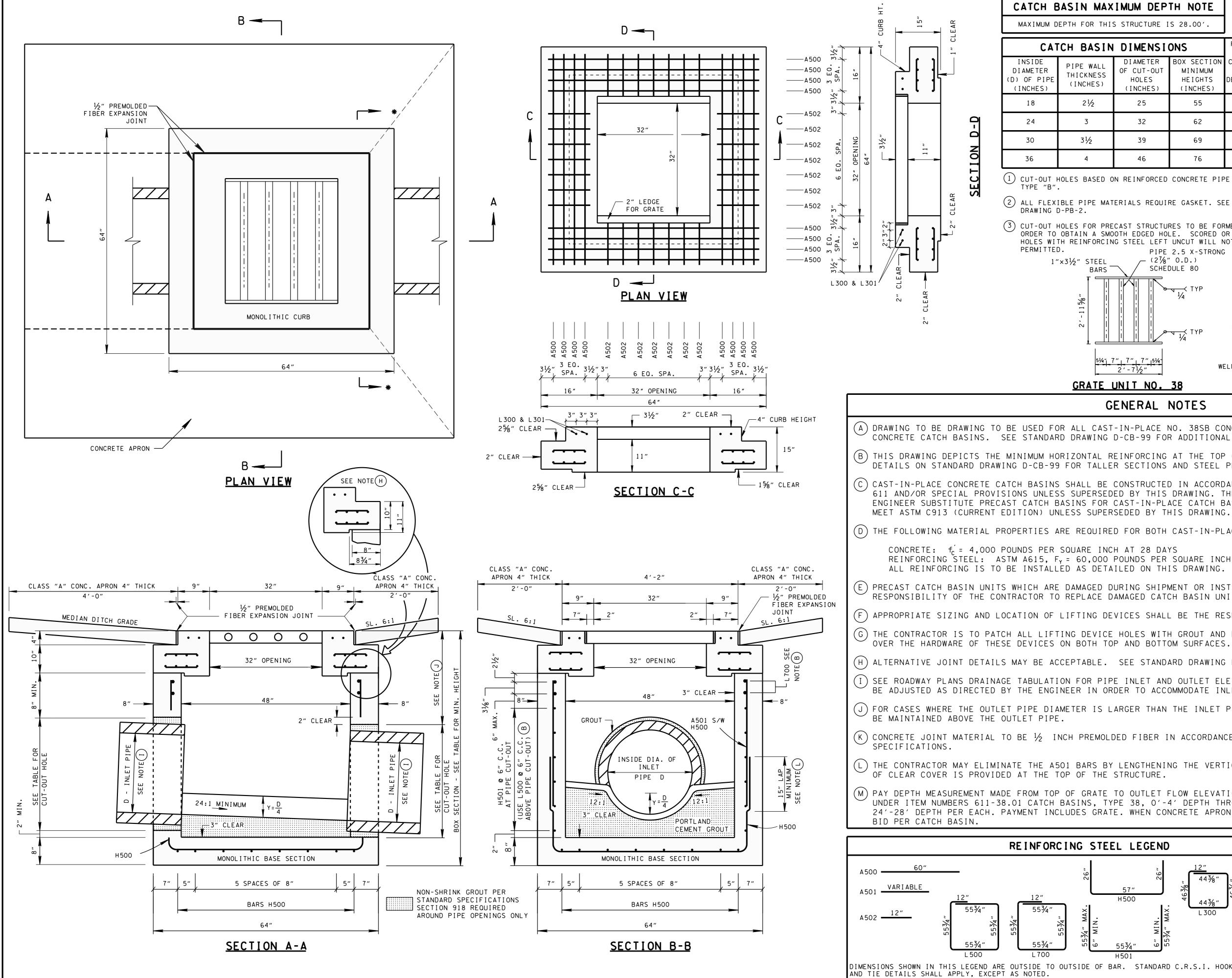
(G) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH

(H) CONCRETE JOINT MATERIAL TO BE  $\frac{1}{2}$ " 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

NSIONS					
INLET OR T CONC.	MAX. INLET OR OUTLET CONC.	DIMENSION			
ZE - STR. ICHES)	PIPE SIZE - 90° (INCHES)	C (INCHES)	H (INCHES)		
36	24	2.5	8		
48	30	3.0	8		
60	36	3.5	12		
66	42	4.0	12		
		NOT	TO SCALE		

MINOR F APPROVA	REVISION FHWA Al not required.						
	of tennessee of transportation	Ø					
C N	STANDARD PRECAST CIRCULAR NO. 38 CATCH BASIN						
1-19-98	D-CB-38RB	•					



THIS	S STRUCTURE I		
SIN	DIMENSI	FOR DESIGN USE ONLY	
ALL ESS ES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	55	3.88
	32	62	4.42
	39	69	4.96
	46	76	5.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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 PIPE 2.5 X-STRONG - (2½″ O.D.) SCHEDULE 80 BARS 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. 5¼<u>" 7" 7" 7" 5¼</u>" 2'-7½" WELDING: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (LATEST EDITION) GRATE UNIT NO. 38

#### 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

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

(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

(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 22 INCH DEPTH SHALL

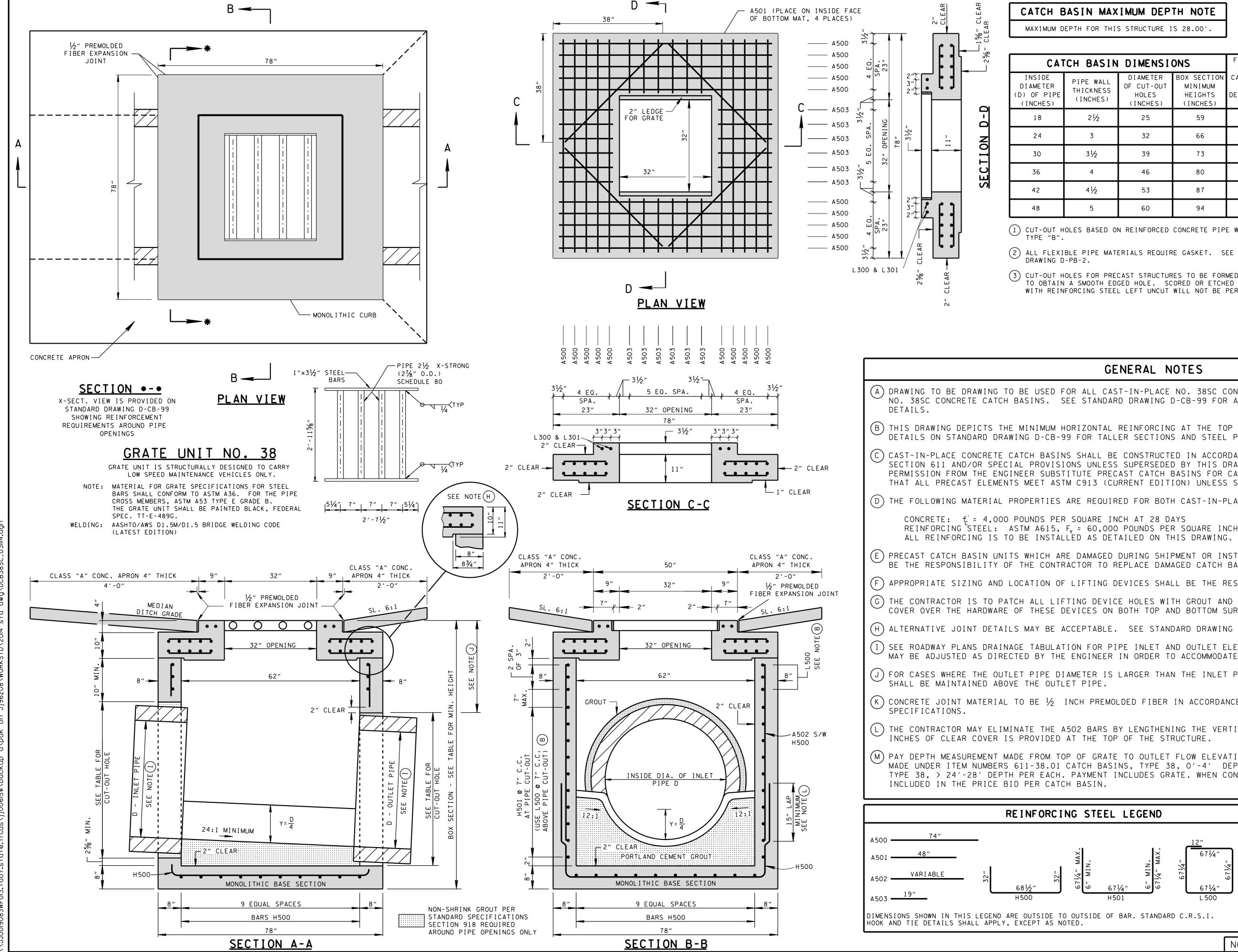
(K) CONCRETE JOINT MATERIAL TO BE  $\frac{1}{2}$  INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES

(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

TEEL LEGEND			REVISION FHWA VAL NOT REQUIRED.
57" 12" 44 <sup>3</sup> %" 57" 4500	12" "%00 40%" "%00	STATE Department	OF TENNESSEE OF TRANSPORTATION
57" H500 	28 <sup>0</sup> 38 <sup>3</sup> / <sub>8</sub> " L 301	4′X CONC	ANDARD 4′ SQUARE RETE NO.38 CH BASIN
OF BAR. STANDARD C.R.S.I. HOOK	NOT TO SCALE	5-27-99	D-CB-38SB

- □ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE  $\bigcirc$  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.
- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.



## CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'

H BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21⁄2	25	59	4.05
3	32	66	4.59
31⁄2	39	73	5.13
4	46	80	5.67
4 <sup>1</sup> /2	53	87	6.22
5	60	94	6.76

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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. 38SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 38SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND

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:

(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 24 INCH DEPTH

(K) CONCRETE JOINT MATERIAL TO BE  $\frac{1}{2}$  INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 11/2

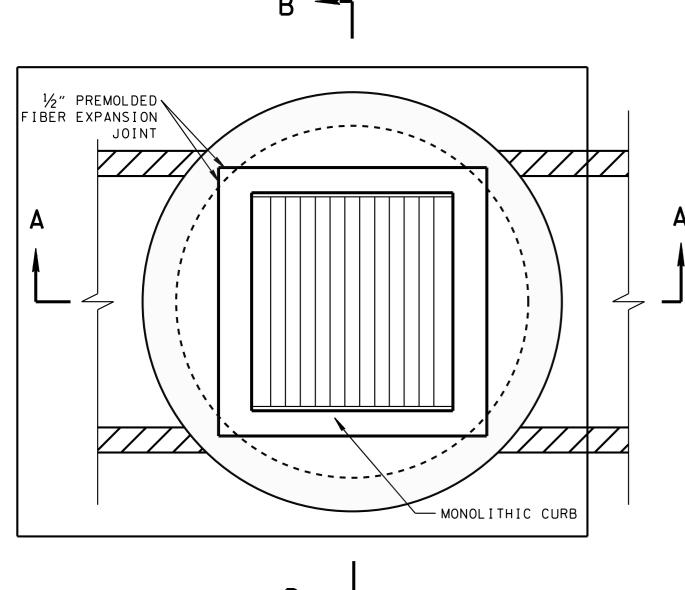
(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-38.01 CATCH BASINS, TYPE 38, 0'-4' DEPTH THROUGH 611-38.07 CATCH BASINS, TYPE 38, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES GRATE. WHEN CONCRETE APRON IS USED, IT IS TO BE

STEEL LEGEND	12//	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
· · · · · · · · · · · · · · · · · · ·	12" 44 <sup>3</sup> %" % 44 <sup>3</sup> %" % 44 <sup>3</sup> %"	STATE OF TENNESSEE Department of transportation
NIN 10 NIN 10 NIN 10 NIN 10 0 0 0 0 0 0 0 0 0 0 0 0 0	L 300 12" % 860 703("	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.38
UTSIDE OF BAR. STANDARD C.R.S.I. D.	4 38 <sup>3</sup> / <sub>8</sub> " L 301	CATCH BASIN
	NOT TO SCALE	9-11-02 D-CB-38SC

□ REV. 9-5-04: CHANGED GROOVE DEPTH IN LID.

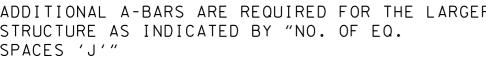
REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

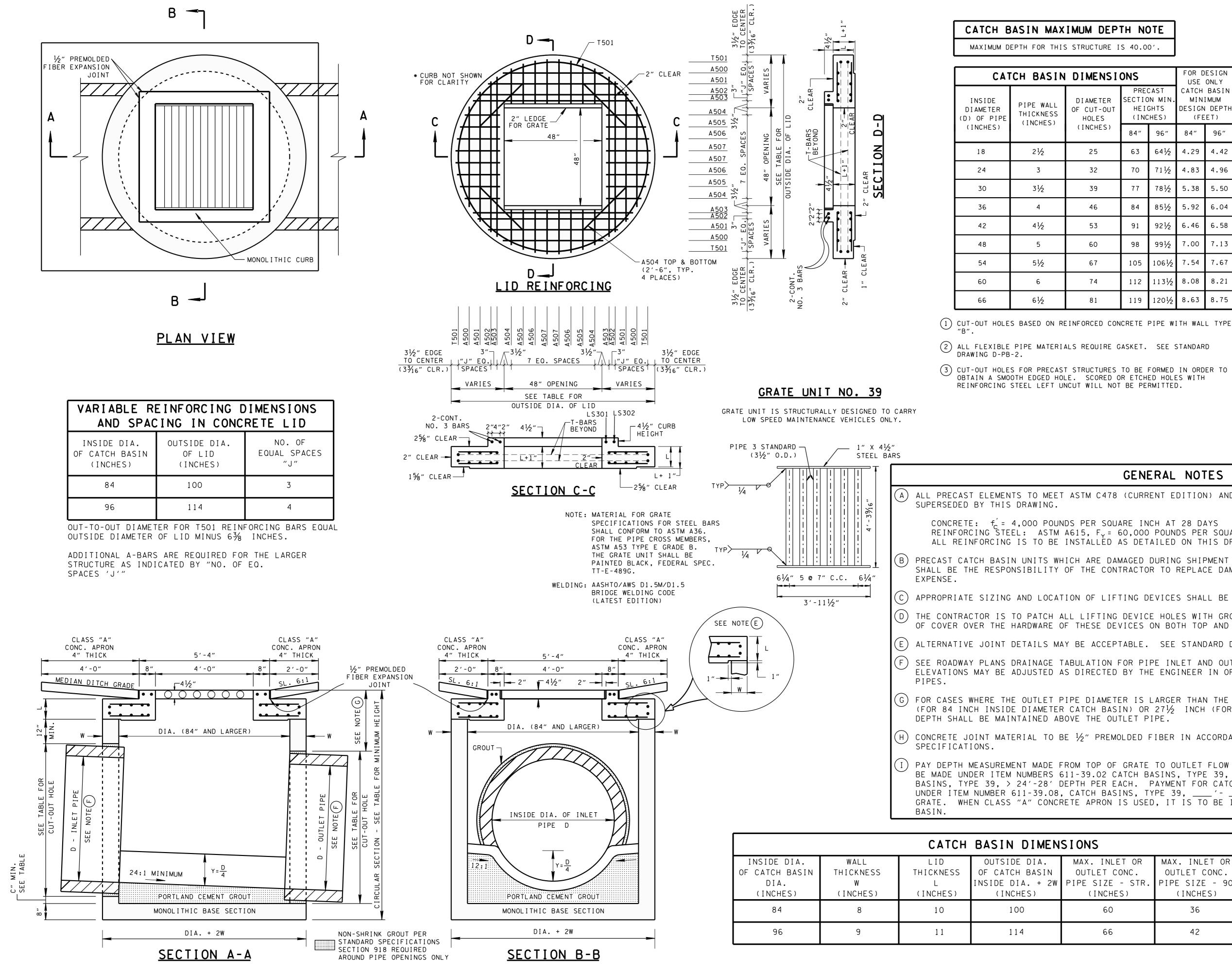
- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS.



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			







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JM DEP	TH NO	DTE			
RUCTURE I	S 40.0	Ο΄.			
IMENSI	ONS	FOR DESIGN USE ONLY			
I AMETER CUT-OUT HOLES	SECTIC HEI(	CAST DN MIN. GHTS HESD	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		
INCHES)	84″	96″	84″	96″	
25	63	64½	4.29	4.42	
32	70	71 <sup>1</sup> /2	4.83	4.96	
39	77	78½	5.38	5.50	
46	84	85½	5.92	6.04	
53	91	92½	6.46	6.58	
60	98	99½	7.00	7.13	
67	105	106½	7.54	7.67	
74	112	113½	8.08	8.21	
81	119	120½	8.63	8.75	

- 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.

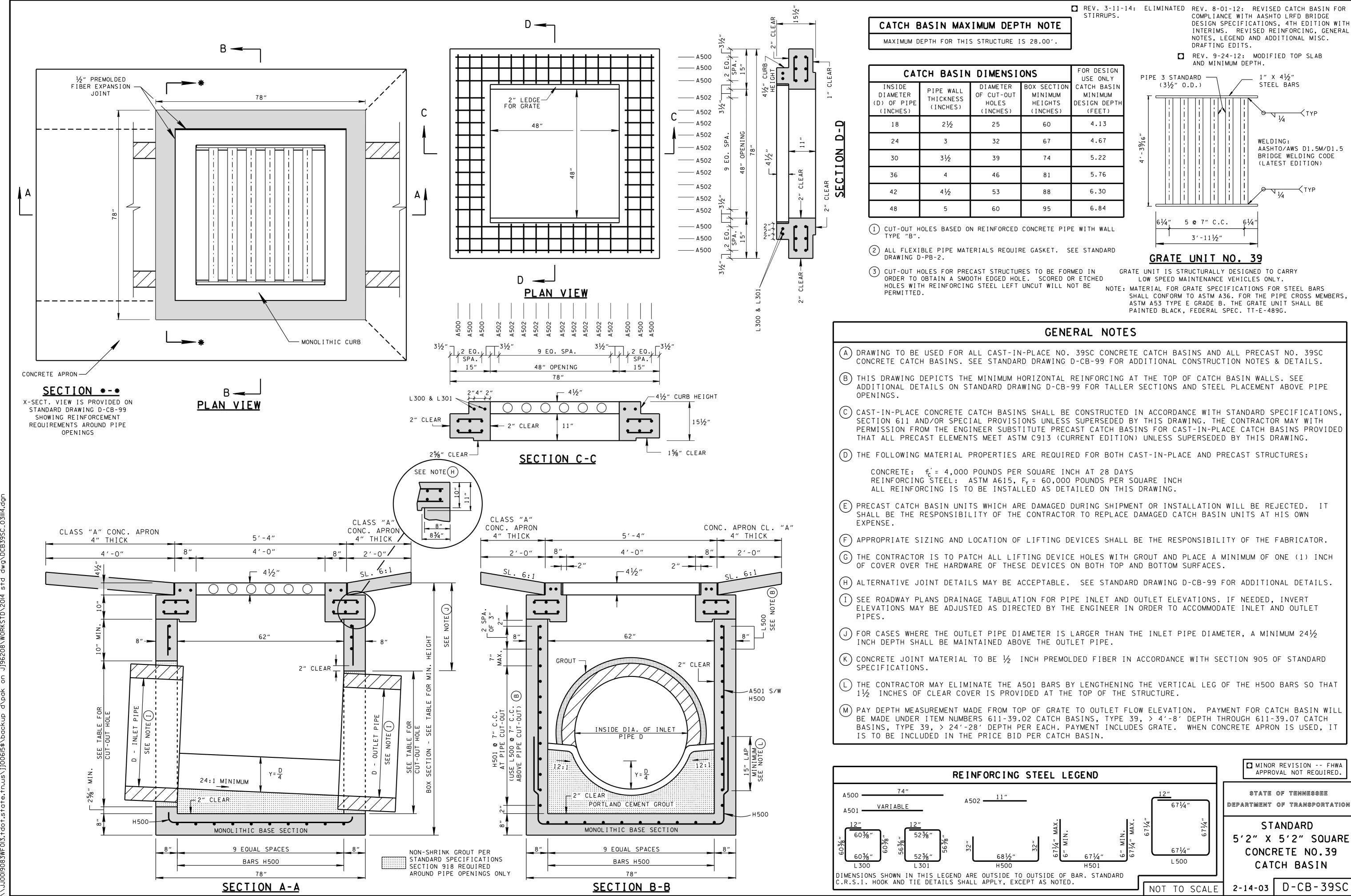
REV. 8-01-12: REVISED CATCH BASIN LID FOR COMPLIANCE WITH LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES AND ADDITIONAL MISC. DRAFTING EDITS.

- REV. 9-24-12: ADDED BAR DESIGNATION FOR CONTINOUS #3 BARS AROUND GRATE AND MODIFIED TOP SLAB.
- REV. 3-11-14: ELIMINATED STIRRUPS.

GENE	RAL NOTES					
STM C478 (CURRE	NT EDITION) AND	AASHTO M19	9 (CUF	RENT EDITION) UNLESS		
PER SQUARE INCH AT 28 DAYS 5, F <sub>y</sub> = 60,000 POUNDS PER SQUARE INCH TALLED AS DETAILED ON THIS DRAWING.						
	ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN					
OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.						
	LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH HESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.					
BE ACCEPTABLE.	SEE STANDARD DR	AWING D-CB	-99R F	OR ADDITIONAL DETAILS.		
JLATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET						
E DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM $26\frac{1}{2}$ INCH ATCH BASIN) OR $27\frac{1}{2}$ INCH (FOR 96 INCH INSIDE DIAMETER CATCH BASIN) E THE OUTLET PIPE.						
½″ PREMOLDED F	IBER IN ACCORDAN	CE WITH SE	CTION	905 OF STANDARD		
M TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL -39.02 CATCH BASINS, TYPE 39, > 4'-8' DEPTH THROUGH 611-39.07, CATCH TH PER EACH. PAYMENT FOR CATCH BASINS DEEPER THAN 28' WILL BE MADE ATCH BASINS, TYPE 39,'' DEPTH PER EACH. PAYMENT INCLUDES E APRON IS USED, IT IS TO BE INCLUDED IN THE PRICE BID PER CATCH						
			1	MINOR REVISION FHWA APPROVAL NOT REQUIRED.		
ONS						
MAX. INLET OR DUTLET CONC. PE SIZE - STR.	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90°	DIMENSION C		STATE OF TENNESSEE Department of transportatio		
(INCHES) 60	(INCHES) 36	(INCHES) 3.5		STANDARD PRECAST		
				CIRCULAR NO. 39		
66	42	4.0		CATCH BASIN		

NOT TO SCALE

10-26-98 D-CB-39RB

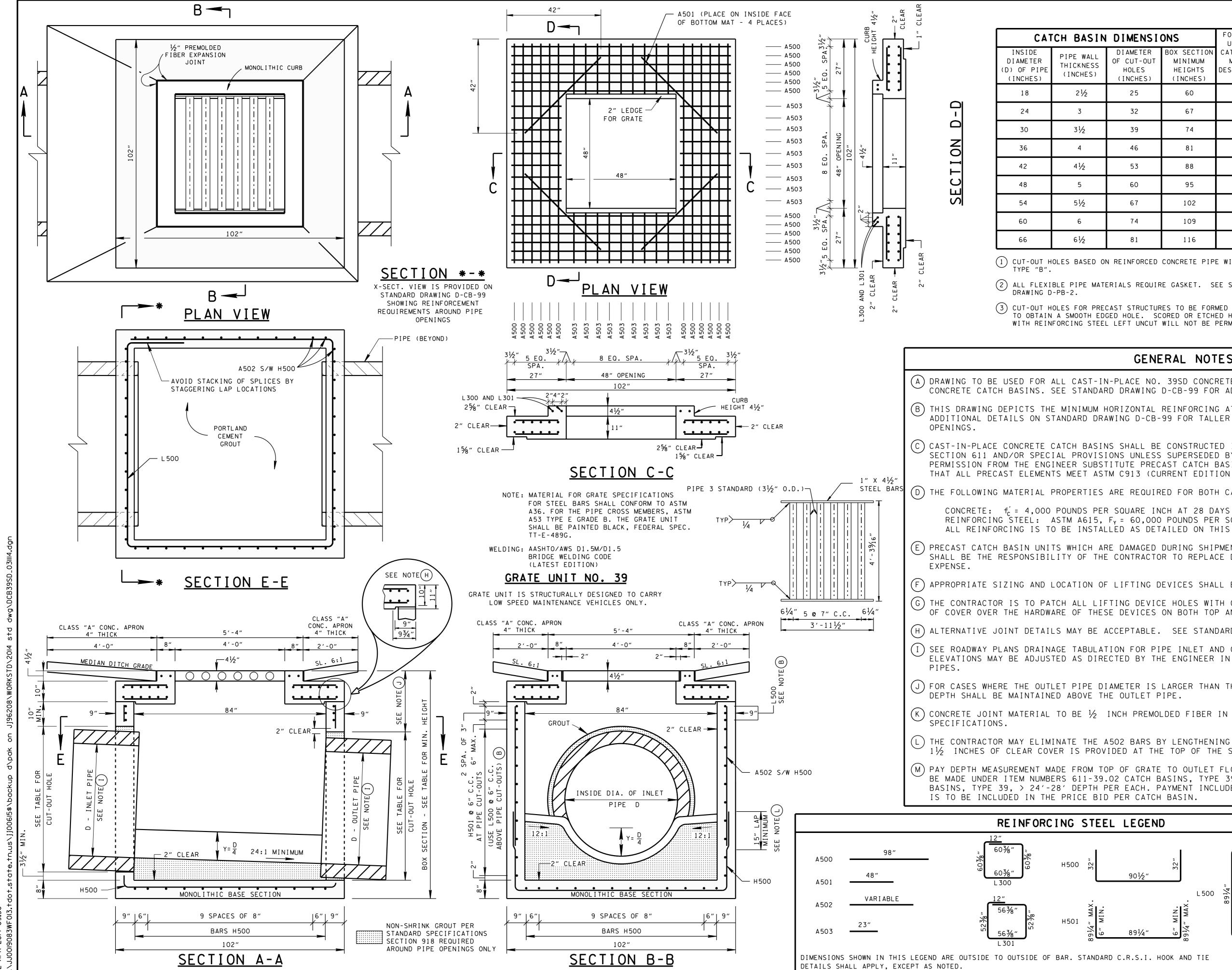


CAI	CH BASIN	DIMEN
INSIDE DIAMETER (D) OF PIPE (INCHES)	PIPE WALL THICKNESS (INCHES)	DIAMETE OF CUT-C HOLES (INCHES
18	21/2	25
24	3	32
30	31/2	39
36	4	46
42	4 <sup>1</sup> /2	53
48	5	60
	IOLES BASED O	N REINFOR

(A)	DRAW] Concf	[NG	ΤO	ΒE	USED	FOR	AL	L	CAS	ST
$\bigcirc$	CONCF	RETE	СА	TCF	BAS	INS.	SE	E	ST	A٨
$\bigcirc$	титс					тс т		мт	NI T I	

SHALL CONFORM TO ASTM A36. FOR THE PIPE CROSS MEMBERS, ASTM A53 TYPE E GRADE B. THE GRATE UNIT SHALL BE

NG STEEL LEGEND		R REVISION FHWA DVAL NOT REQUIRED.	
	<u>67¼"</u>	STATE DEPARTMENT	OF TENNESSEE OF TRANSPORTATION
	" <sup>*</sup> <sup>4</sup> <sup>7</sup> L9 <u>67<sup>1</sup>/4</u> " L 500	5'2" X CONCI	ANDARD 5'2" SOUARE RETE NO.39 CH BASIN
EXCEPT AS NOTED.	NOT TO SCALE	2-14-03	D-CB-39SC



ΙN	DIMENSI	ONS	FOR DESIGN USE ONLY
.L SS )	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	60	4.13
	32	67	4.67
	39	74	5.22
	46	81	5.76
	53	88	6.30
	60	95	6.84
	67	102	7.38
	74	109	7.92
	81	116	8.47

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.



### 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

(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:

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

(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

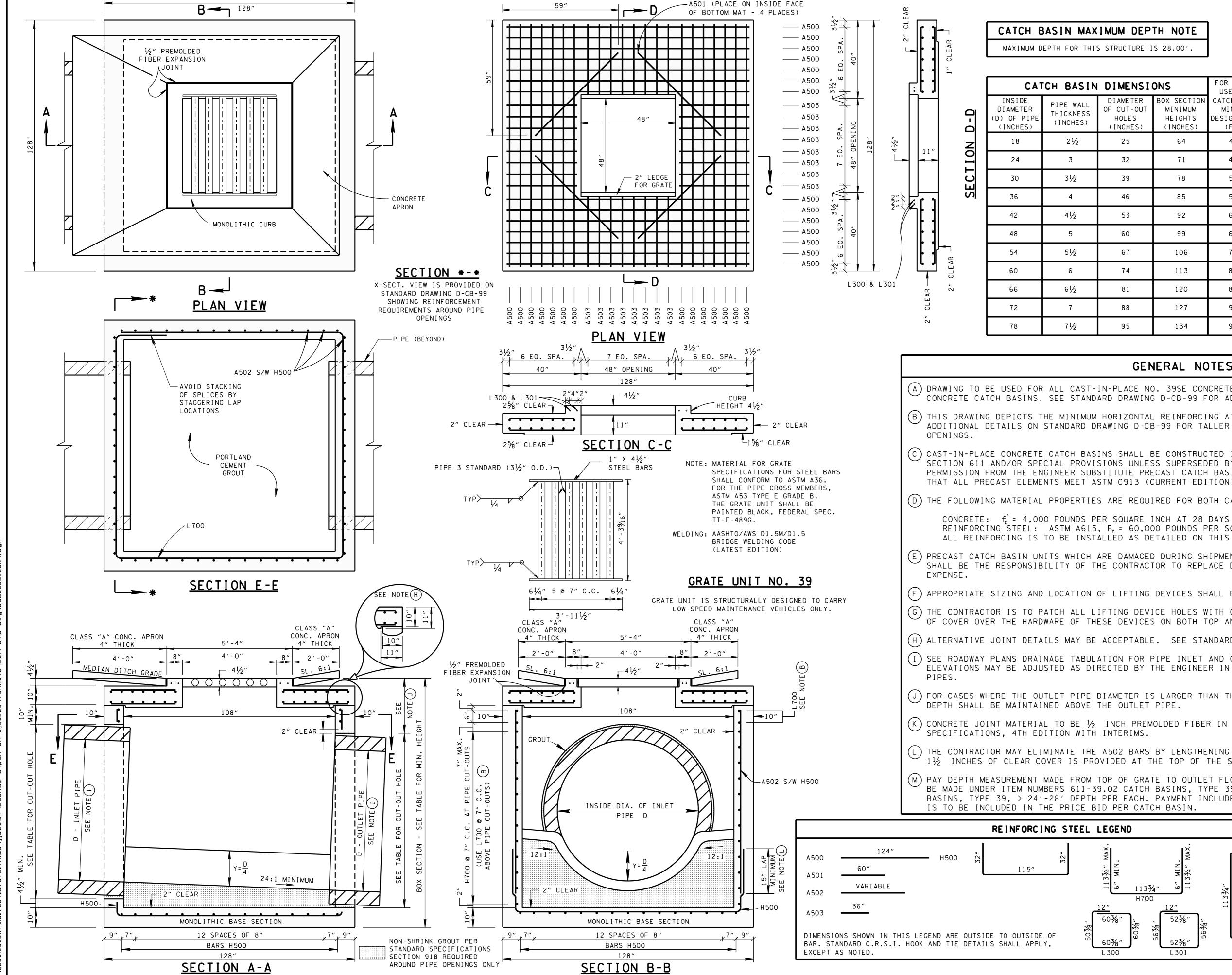
(J)FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 $^{1}\!\!/_{2}$  INCH

(K) CONCRETE JOINT MATERIAL TO BE  $\frac{1}{2}$  INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 11/2 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

EEL	LEGEND								REVISION FHWA AL NOT REQUIRED.
		_			<u>12″</u> 8	391⁄4″		APPROVA	AL NOT REGUIRED.
		32"		ſ				STATE	of tennessee
	90½″	M						DEPARTMENT	OF TRANSPORTATION
			L 500	891/4"			891/4"	STANDA	ARD 7' X 7'
MIN.		MIN.		ω			ω		E CONCRETE
¥ °	89¼″	6" M 91/4"			8	39¼″		N	D. 39
		0; @						CAT	CH BASIN
DARD (	C.R.S.I. HO	OK AND	TIE		NO	τ το	SCALE	10-26-99	D-CB-39SD



9:50 013.

					REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE ⓒ
	IMUM DEP				REV. 9-11-02: CHANGED REINFORCING STEE IN BASE SECTION.
					REV. 2-13-04: CHANGED REINFORCING STEE IN BASE SECTION.
N	DIMENSI		FOR DESIGN USE ONLY		REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
	25	64	4.21		REV. 3-11-14: ELIMINATED STIRRUPS.
	32	71	4.75		KEV. J-II-I4: LEIMINAILU STIKKUIS.
	39	78	5.29		
	46	85	5.83		
	53	92	6.38		
	60	99	6.92		
	67	106	7.46	1	CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	74	113	8.00	(2)	ALL FLEXIBLE PIPE MATERIALS REQUIRE
	81	120	8.54	(3)	GASKET. SEE STANDARD DRAWING D-PB-2. CUT-OUT HOLES FOR PRECAST STRUCTURES
	88	127	9.08		TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
	95	134	9.63		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

(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:

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

(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

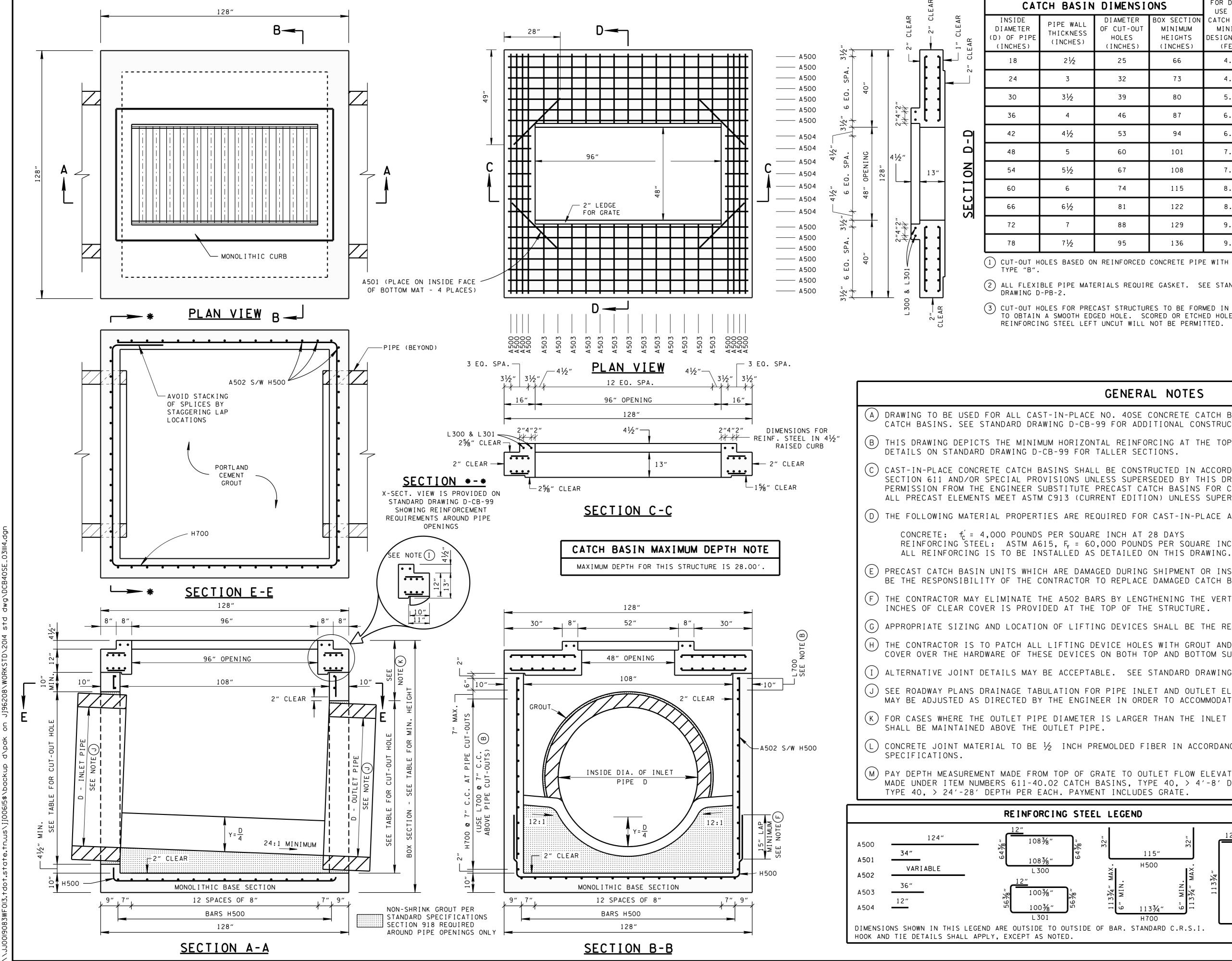
(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 $\frac{1}{2}$  INCH

(K) CONCRETE JOINT MATERIAL TO BE 1/2 INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1<sup>1</sup>/<sub>2</sub> 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

LEGEND		MINOR REVISION FHWA
· · · · · · · · · · · · · · · · · · ·	<u>2″</u> 113¾″	APPROVAL NOT REQUIRED.
1334 " MIN. 1334 "	، ح	STATE OF TENNESSEE Department of transportation
H700	11334	STANDARD 9'X9'SQUARE
60¾″ <sup>%</sup> 52¾″	113¾" L700	CONCRETE NO. 39 CATCH BASIN
L 300 L 301		
	NOT TO SCALE	12-18-98 D-CB-39SE



CH BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21/2	25	66	4.38
3	32	73	4.92
31/2	39	80	5.46
4	46	87	6.00
4 <sup>1</sup> /2	53	94	6.54
5	60	101	7.08
51⁄2	67	108	7.63
6	74	115	8.17
6 <sup>1</sup> ⁄2	81	122	8.71
7	88	129	9.25
7 <sup>1</sup> /2	95	136	9.79

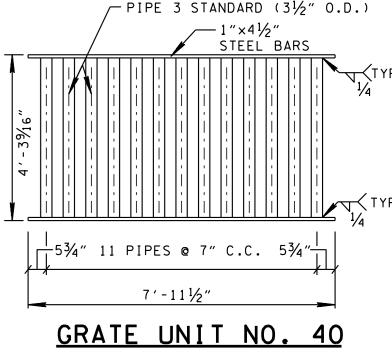
(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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 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)

### 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
  - 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.

THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR CAST-IN-PLACE AND PRECAST STRUCTURES:

REINFORCING STEEL: ASTM A615, F<sub>Y</sub> = 60,000 POUNDS PER SQUARE INCH

(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 11/2

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.

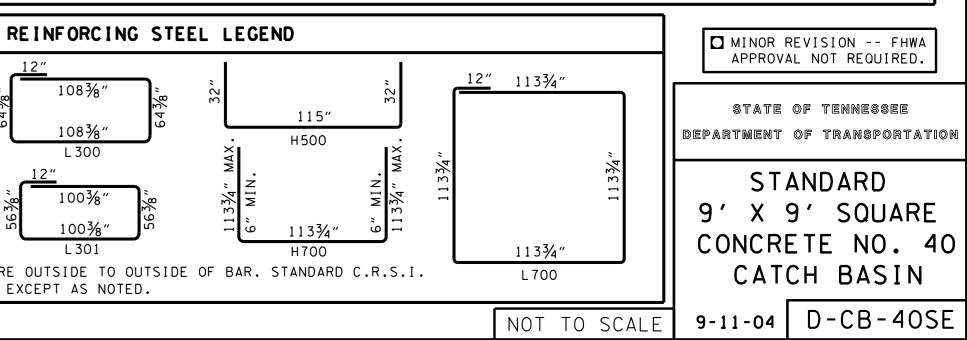
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

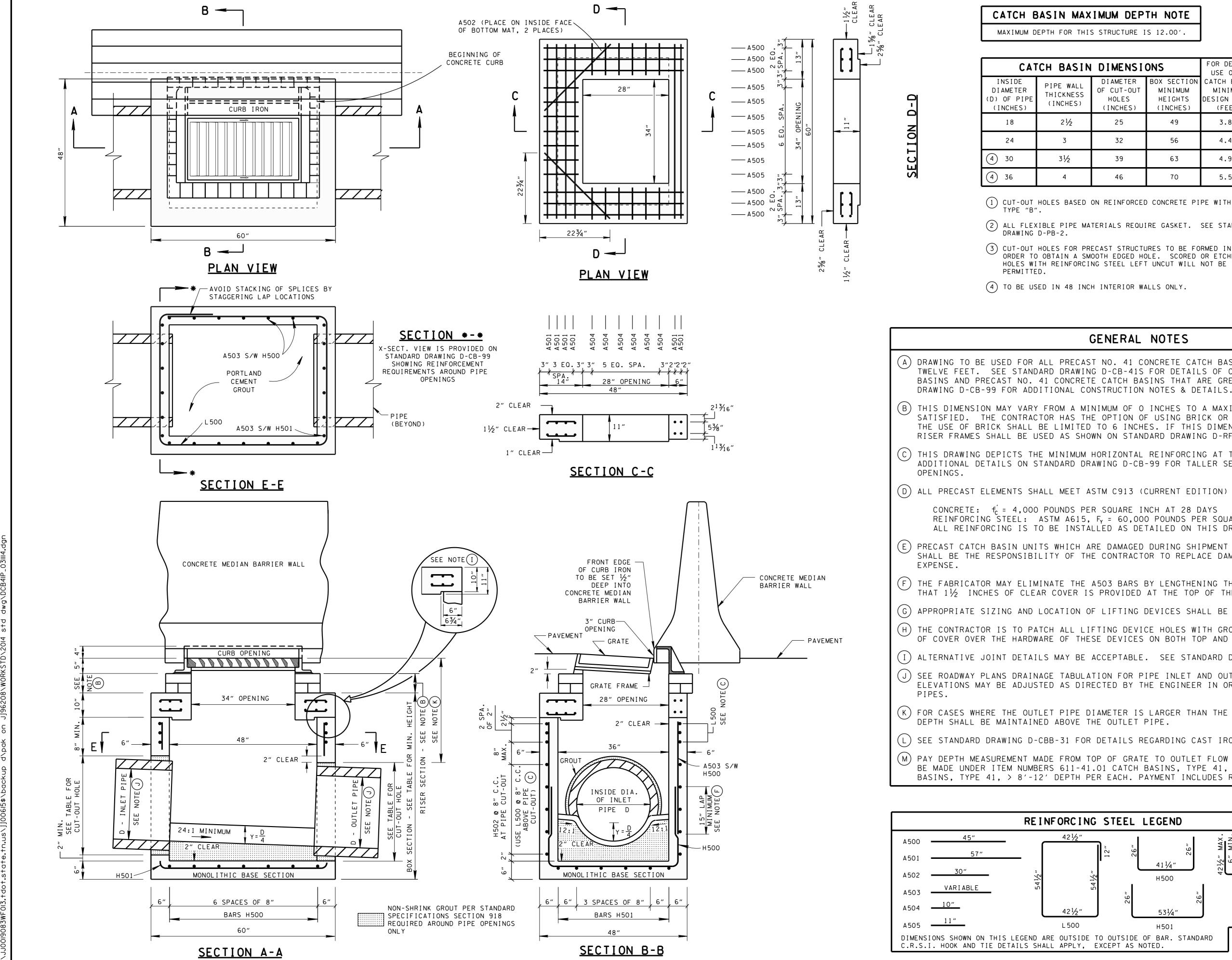
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26½ INCH DEPTH

(L) CONCRETE JOINT MATERIAL TO BE  $\frac{1}{2}$  INCH PREMOLDED FIBER IN ACCORDANCE WITH SECTION 905 OF STANDARD

(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,





## CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 12.00'

N	DIMENSI	ONS	FOR DESIGN USE ONLY
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	49	3.88
	32	56	4.42
	39	63	4.96
	46	70	5.50

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

(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.
- **C** 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. 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 (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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS.

### 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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

REINFORCING STEEL: ASTM A615,  $F_{y}$  = 60,000 POUNDS PER SQUARE INCH ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

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

(F) THE FABRICATOR MAY ELIMINATE THE A503 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT 1<sup>1</sup>/<sub>2</sub> 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.

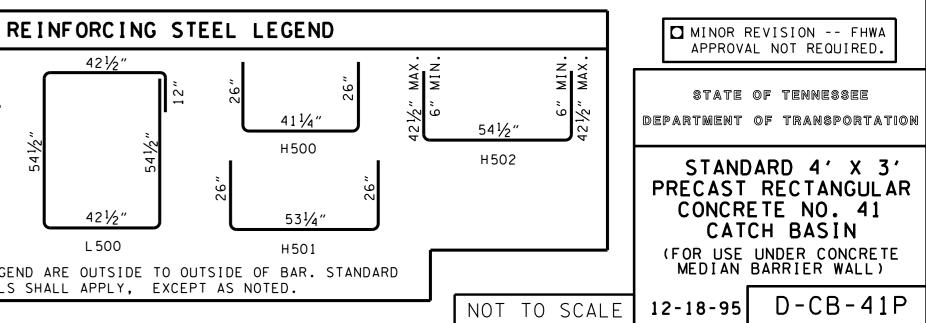
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

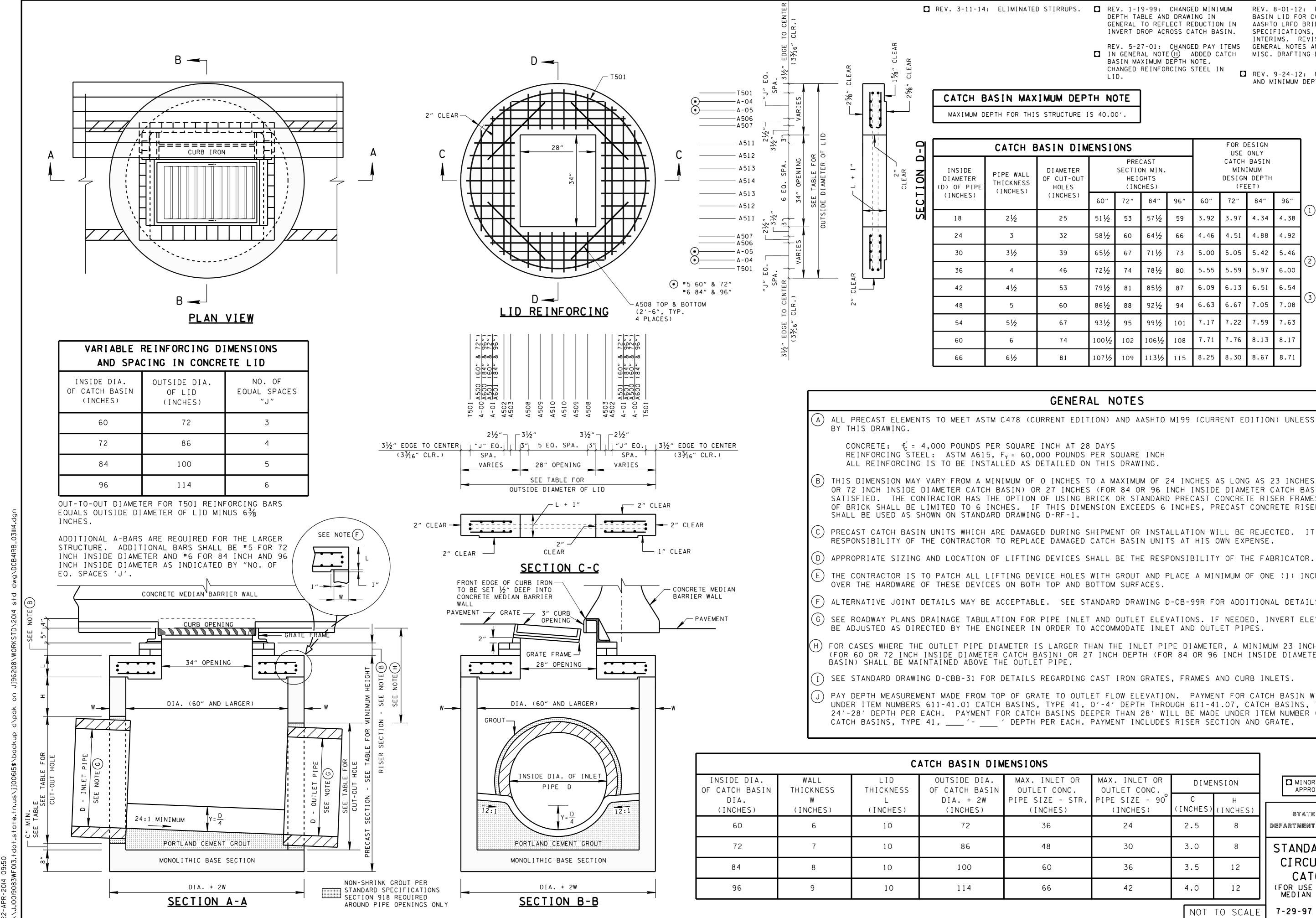
(J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH

(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.





- □ REV. 3-11-14: ELIMINATED STIRRUPS. □ 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 GENERAL NOTES AND ADDI IN GENERAL NOTE (H) ADDED CATCH MISC. DRAFTING EDITS. 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

□ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

3	ASIN DIM	ENSI	ONS					ESIGN ONLY		
	DIAMETER OF CUT-OUT HOLES		SECTIO HEI	CAST )N MIN. GHTS CHES)			CATCH MIN DESIGN	BASIN IMUM I DEPTH ET)		
	(INCHES)	60"	72"	84″	96″	60″	72″	84″	96″	
	25	51 ½	53	57½	59	3.92	3.97	4.34	4.38	(1) CUT-OUT HOLES BASED ON REINFORCED
	32	58½	60	64½	66	4.46	4.51	4.88	4.92	CONCRETE PIPE WITH WALL TYPE "B".
	39	65½	67	71 <sup>1</sup> /2	73	5.00	5.05	5.42	5.46	ALL FLEXIBLE PIPE
	46	72½ 74 78½ 80		5.55	5.59	5.97	GASKET. SEE STANDARD DRAWING			
	53	79½	81	85½	87	6.09	6.13	6.51	6.54	D-PB-2.
	60	86 <sup>1</sup> ⁄2	88	92 <sup>1</sup> ⁄2	94	6.63	6.67	7.05	7.08	(3) CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN
	67	93½	95	99 <sup>1</sup> ⁄2	101	7.17	7.22	7.59	7.63	ORDER TO OBTAIN A SMOOTH EDGED HOLE.
	74	100 <sup>1</sup> /2	102	106½	108	7.71	7.76	8.13	8.17	SCORED OR ETCHED HOLES WITH REINFORCING STEEL
	81	107½	109	113½	115	8.25	8.30	8.67	8.71	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

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCHES (FOR 84 OR 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

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) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

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.

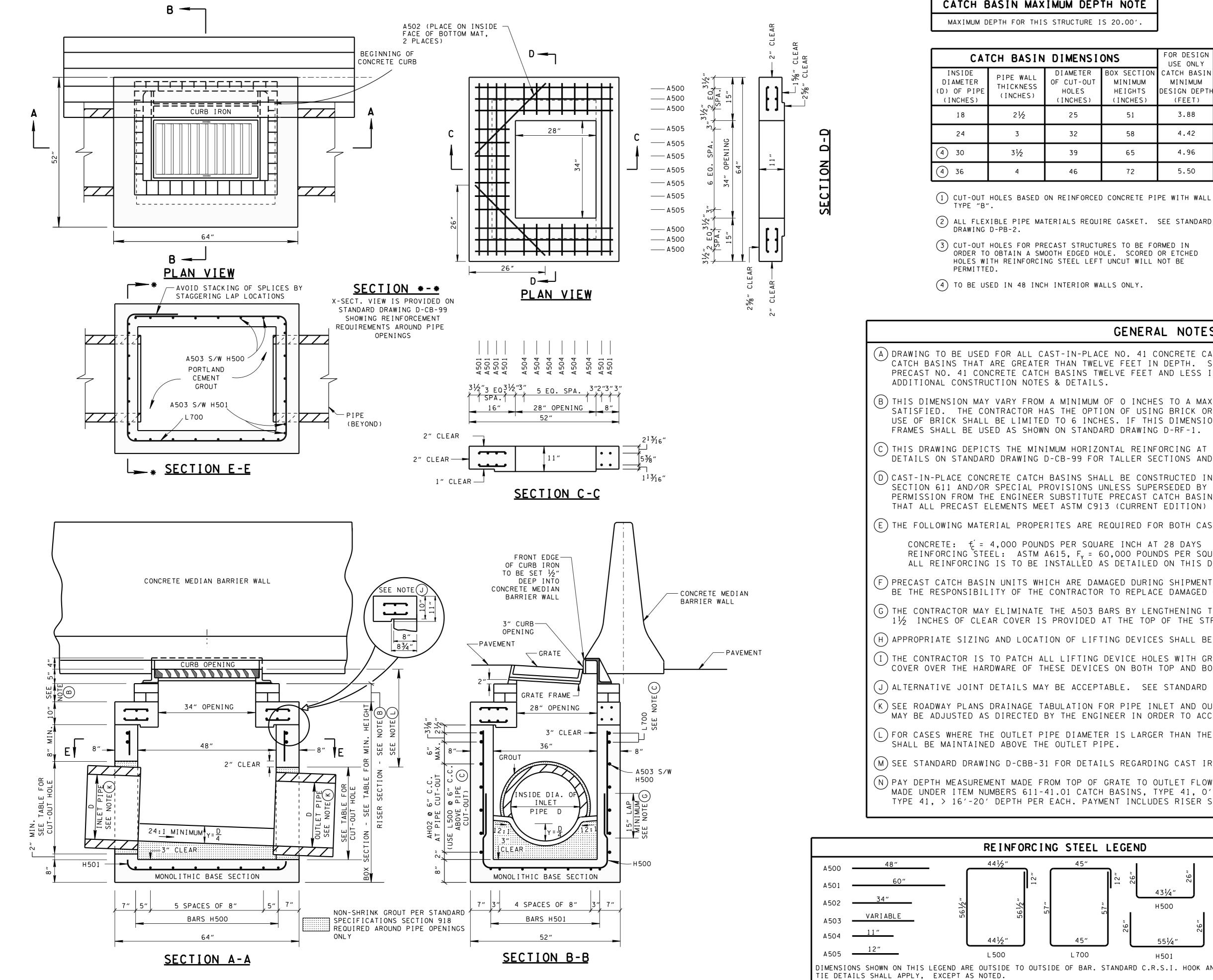
FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH

SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

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, O'-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.

IS									
INLET OR T CONC.	MAX. INLET OR OUTLET CONC.		DIMENSION						
IZE - STR. NCHES)	PIPE SIZE - 90° (INCHES)	( I	C NCHES)	H (INCHES)					
36	24		2.5	8					
48	30		3.0	8					
60	36		3.5	12					
66	42		4.0	12					
			NOT	TO SCALE					

MINOR F APPROVA	REVISION FHWA AL NOT REQUIRED.
STATE (	DF TENNESSEE
DEPARTMENT (	OF TRANSPORTATION
STANDAF	RD PRECAST
	AR NO.41
CATC	H BASIN
	INDER CONCRETE ARRIER WALL)
7-29-97	D-CB-41RB



## CATCH BASIN MAXIMUM D

CAI	CATCH BASIN DIMENSIONS									
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	21/2	25	51	3.88						
24	3	32	58	4.42						
4 30	31/2	39	65	4.96						
4 36	4	46	72	5.50						

- (1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL
- (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

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

(	A	DR CA PR AD	TC EC	H A	B S T	: A ا	S I NC	N ).	S 4	T   1	Н / (	4 T C C	- )N	AI CI	RE Re	E E T	G	RI (	E A C A	ι Τ ι Τ	E F C F	R R	T B	H A	AN S I	N [ N	TV IS
	B	TH SA US FR	T I E	SF OF	- I	E I B I	D. RI	С	T K	Ή S	E H /	C A L	0 . L	N . [	t f Be	R A E	C L	T ( I I	OF MI	۲ ۲	H/ E[	4S )	S T	Т О	HE (	2	OF IN
	C	TH DE	I S T A	, [ . [ [	DR _S	۸۱ (	N I On	N	G S T	D	e f N[	PI DA	C AR	T : D	S [	T DR	H	E W	N I N	1I IG	N [ ]	I N D -	/U - C	M B	ا 9 _ 0	+0 99	R] F
(	D	C A SE PE TH	C T RM	I ( I S	DN SS	) I (	61 0N	1	A F F	N 20	D, M	/ C T	)R H	ڊ E	S F E	PE E N	C IG	I I I I	A L N E	Ē	Pf R	ר כ	) V 5 U	I B	S I S T	[	NS TL
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	G	ТН 1 <sup>1</sup> /																									
	H	AP	PR	OF	۶R	I	ΑT	E	S	ΞI	Z	[ N	١G		4٨	١D	1	L	00	Â	T	ΙC	ΟN		OF	-	L]
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- **C** REV. 10-26-96: REMOVE 0.875" HOLE FROM BACK OF CURB IRON IN SECTION B-B.
- **C** 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  $\bigcirc$  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.
- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.

## GENERAL NOTES

LACE NO. 41 CONCRETE CATCH BASINS AND ALL PRECAST NO. 41 CONCRETE WELVE FEET IN DEPTH. SEE STANDARD DRAWING D-CB-41P FOR DETAILS OF TWELVE FEET AND LESS IN DEPTH.SEE STANDARD DRAWING D-CB-99 FOR AILS.

IUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. THE NCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE RISER ANDARD DRAWING D-RF-1.

RIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE ADDITIONAL FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.

SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, NS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH UTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

RE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES

SQUARE INCH AT 28 DAYS = 60,000 POUNDS PER SQUARE INCH ED AS DETAILED ON THIS DRAWING.

DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL CTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN EXPENSE.

D3 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500/H501 BARS SO THAT ED AT THE TOP OF THE STRUCTURE.

\_IFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

NG DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF VICES ON BOTH TOP AND BOTTOM SURFACES.

CEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

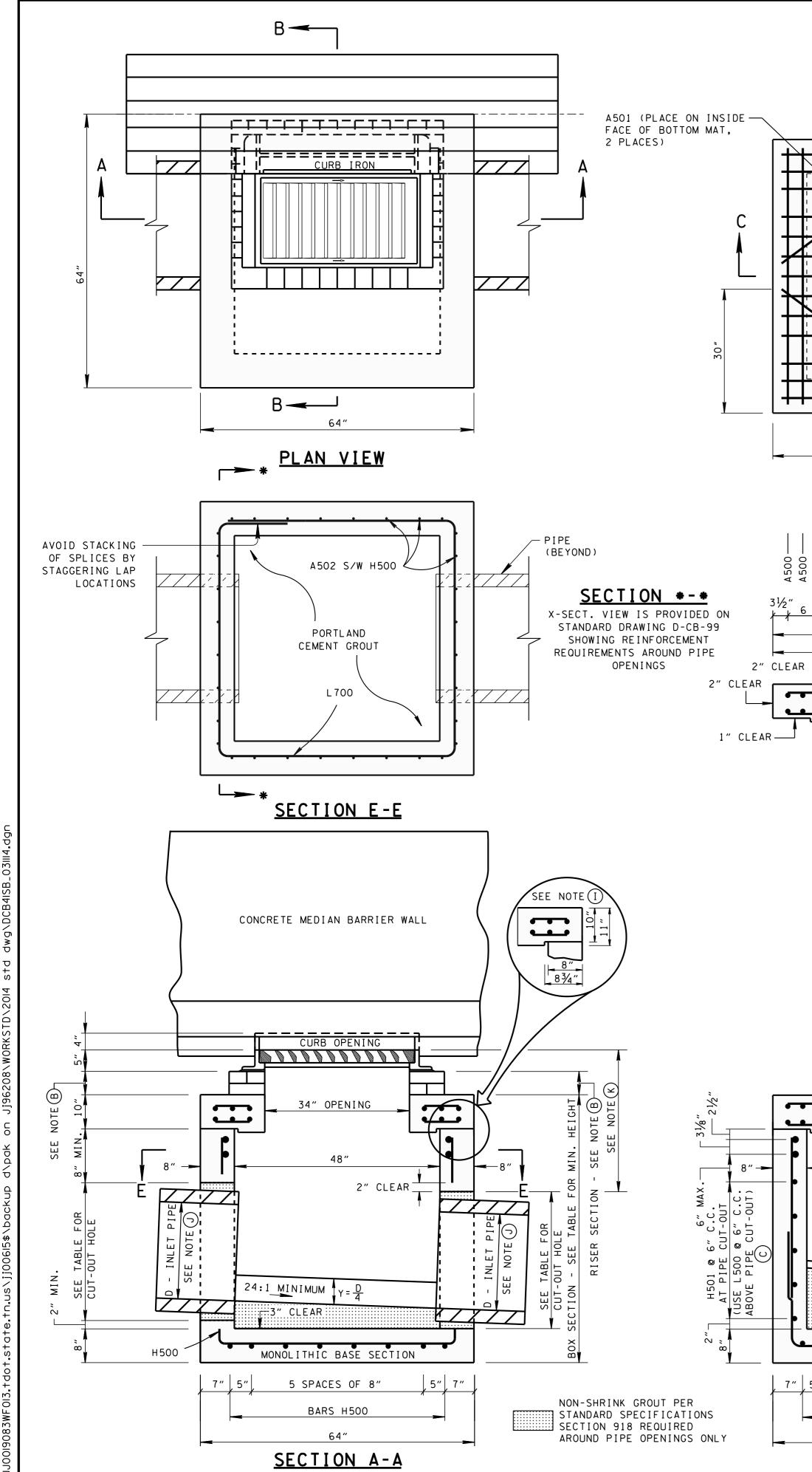
ON FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS INGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

METER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH DEPTH PIPE.

ETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE ATCH BASINS, TYPE 41, O'-4' DEPTH THROUGH 611-41.05 CATCH BASINS, PAYMENT INCLUDES RISER SECTION AND GRATE.

EL LEGEND		MINOR REVISION FHWA APPROVAL NOT REQUIRED.
41½" MAX.	6 % MIN. 6 % MIN. 412 % MAX.	STATE OF TENNESSEE Department of transportation
<u>43¼</u> H500 <sup>8</sup> <sup>8</sup> 55¼″ 0 H501	56½″ 4	STANDARD 4' X 3' RECTANGULAR CONCRETE NO. 41 CATCH BASIN (FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)
AR. STANDARD C.R.S.I. HOOK AND	NOT TO SCALE	10-26-95 D-CB-41S



# CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 28.00'

DIAMETER (D) OF PIPE (INCHES)PIPE WALL THICKNESS (INCHES)OF CUT-OUT HOLES (INCHES)MINIMUM HEIGHTS (INCHES)MINIMUM DESIGN DEP (FEET)1821/225513.8824332584.423031/239654.9636446725.501CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WAL TYPE "B".ON REINFORCED CONCRETE PIPE WITH WAL	CAT	FOR DESIGN USE ONLY			
24       3       32       58       4.42         30       3½       39       65       4.96         36       4       46       72       5.50         1       CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL	DIAMETER (D) OF PIPE	THICKNESS	OF CUT-OUT HOLES	MINIMUM HEIGHTS	MINIMUM DESIGN DEPT
30     3½     39     65     4.96       36     4     46     72     5.50       1     CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL	18	2 <sup>1</sup> /2	25	51	3.88
36     4     46     72     5.50       1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WAL TYPE "B".	24	3	32	58	4.42
1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WAL	30	65	4.96		
✓ ТҮРЕ "В".	36	4	46	72	5.50
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDAF DRAWING D-PB-2.					

A DRAWING TO BE USED FOR ALL CONCRETE CATCH BASINS. SEE	
B THIS DIMENSION MAY VARY FR SATISFIED. THE CONTRACTOR THE USE OF BRICK SHALL BE RISER FRAMES SHALL BE USED	HAS T LIMITE
C THIS DRAWING DEPICTS THE M ADDITIONAL DETAILS ON STAN OPENINGS.	
D CAST-IN-PLACE CONCRETE CAT SECTION 611 AND/OR SPECIAL PERMISSION FROM THE ENGINE THAT ALL PRECAST ELEMENTS	PROVI ER SUB
E THE FOLLOWING MATERIAL PRO	PERTIE
CONCRETE: f <sub>c</sub> ´= 4,000 PO REINFORCING STEEL: AST ALL REINFORCING IS TO B	M A615
(F) PRECAST CATCH BASIN UNITS SHALL BE THE RESPONSIBILIT EXPENSE.	
G APPROPRIATE SIZING AND LOC	ATION
(H) THE CONTRACTOR IS TO PATCH OF COVER OVER THE HARDWARE	
I ALTERNATIVE JOINT DETAILS	MAY BE
J SEE ROADWAY PLANS DRAINAGE ELEVATIONS MAY BE ADJUSTED PIPES.	
(K) FOR CASES WHERE THE OUTLET DEPTH SHALL BE MAINTAINED	
L SEE STANDARD DRAWING D-CBB	-31 FC
(M) THE CONTRACTOR MAY ELIMINA $1\frac{1}{2}$ INCHES OF CLEAR COVER	
N PAY DEPTH MEASUREMENT MADE BE MADE UNDER ITEM NUMBERS BASINS, TYPE 41, > 24'-28'	611-4
REINF	ORCIN
A50060"	26"
A501 <u>45"</u>	

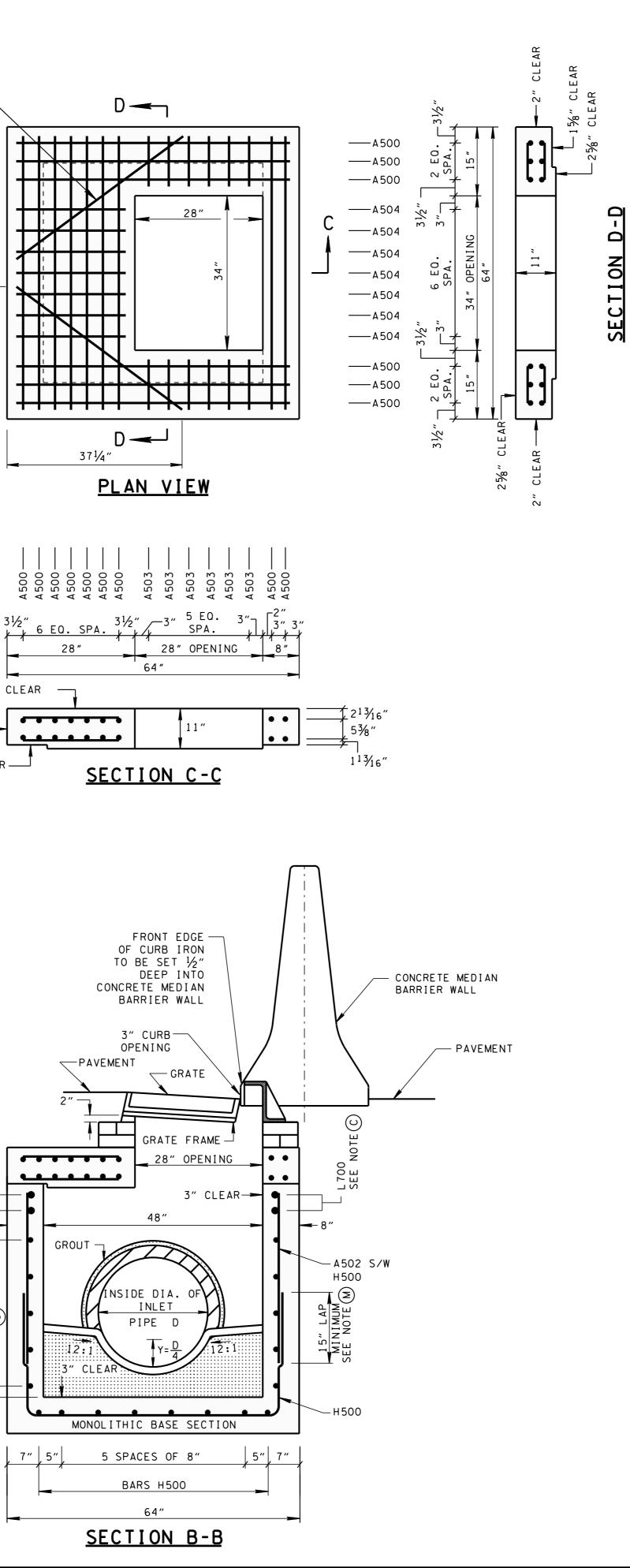
VARIABLE

TIE DETAILS SHALL APPLY, EXCEPT AS NOTED.

A502 -

A504 -

A503 <u>11"</u>



### GENERAL NOTES

-IN-PLACE NO. 41SB CONCRETE CATCH BASINS AND ALL PRECAST NO. 41SB DARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES AND DETAILS.

MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 INCHES IS THE OPTION OF USING BRICK OR STANDARD PRECAST CONCRETE RISER FRAMES. ED TO 6 INCHES. IF THIS DIMENSION EXCEEDS 6 INCHES, PRECAST CONCRETE HOWN ON STANDARD DRAWING D-RF-1.

JM HORIZONTAL REINFORCING AT THE TOP OF CATCH BASIN WALLS. SEE DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE

SINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, ISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY WITH BSTITUTE PRECAST CATCH BASINS FOR CAST-IN-PLACE CATCH BASINS PROVIDED ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.

ES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:

PER SQUARE INCH AT 28 DAYS 15,  $F_{y}$  = 60,000 POUNDS PER SQUARE INCH TALLED AS DETAILED ON THIS DRAWING.

ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT THE CONTRACTOR TO REPLACE DAMAGED CATCH BASIN UNITS AT HIS OWN

OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

\_IFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH HESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.

E ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

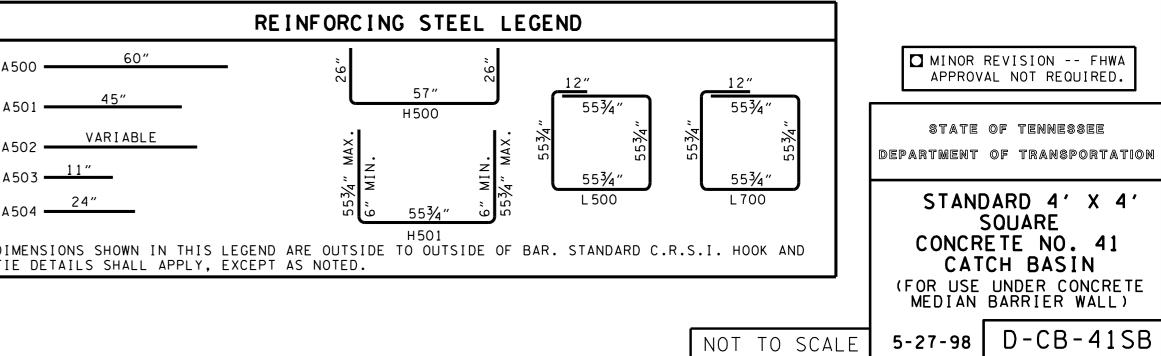
ATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT IRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 23 INCH THE OUTLET PIPE.

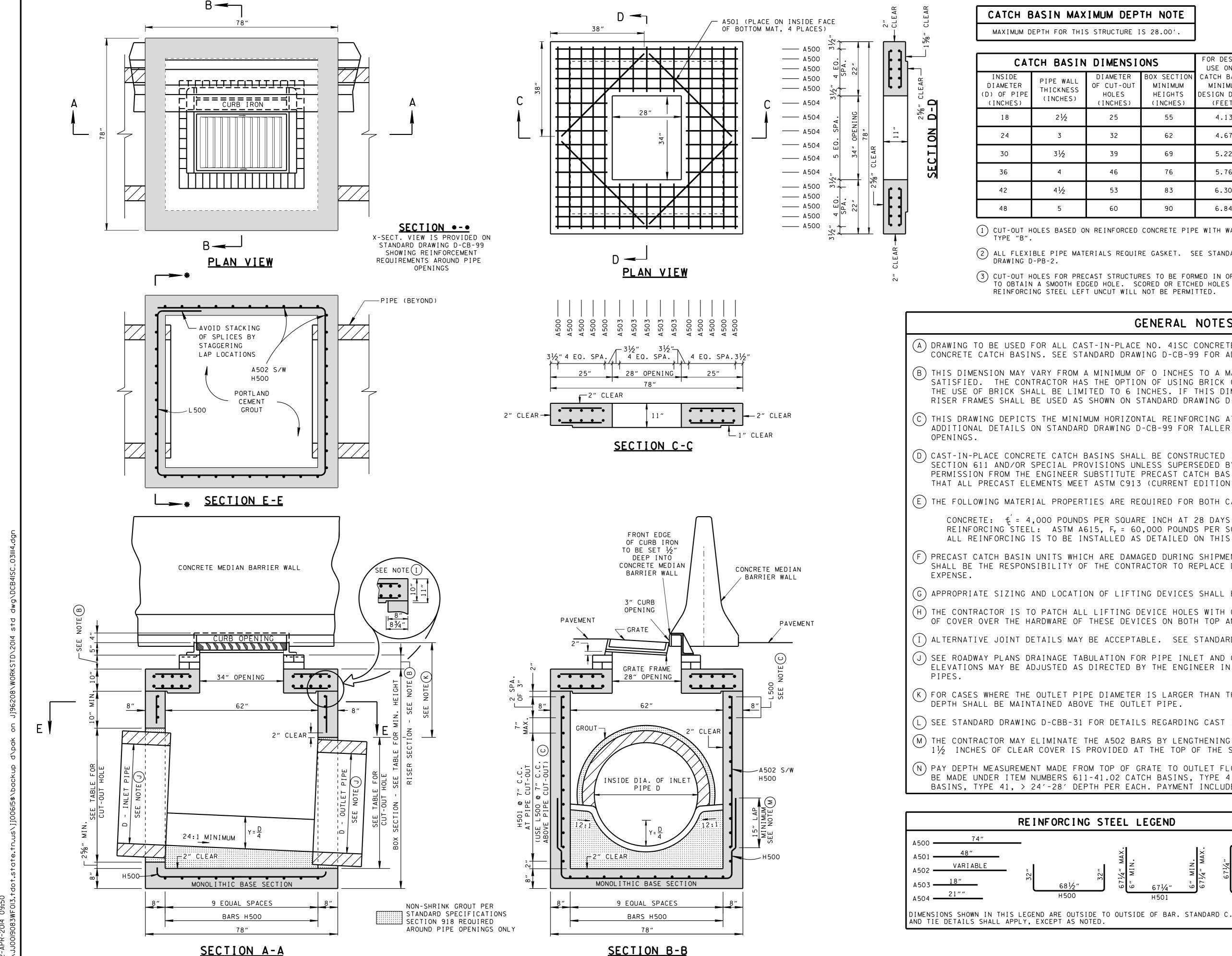
OR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

E A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT ROVIDED AT THE TOP OF THE STRUCTURE.

TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL -41.01 CATCH BASINS, TYPE 41, O'-4' DEPTH THROUGH 611-41.07 CATCH TH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.



- □ 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.
- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.



MUM DEP	TH NOTE	
STRUCTURE I	S 28.00′.	
DIMENSI	FOR DESIGN USE ONLY	
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPT (FEET)
25	55	4.13
32	62	4.67
39	69	5.22
46	76	5.76
53	83	6.30
60	90	6.84

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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. 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 O 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

(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:

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

(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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

(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  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

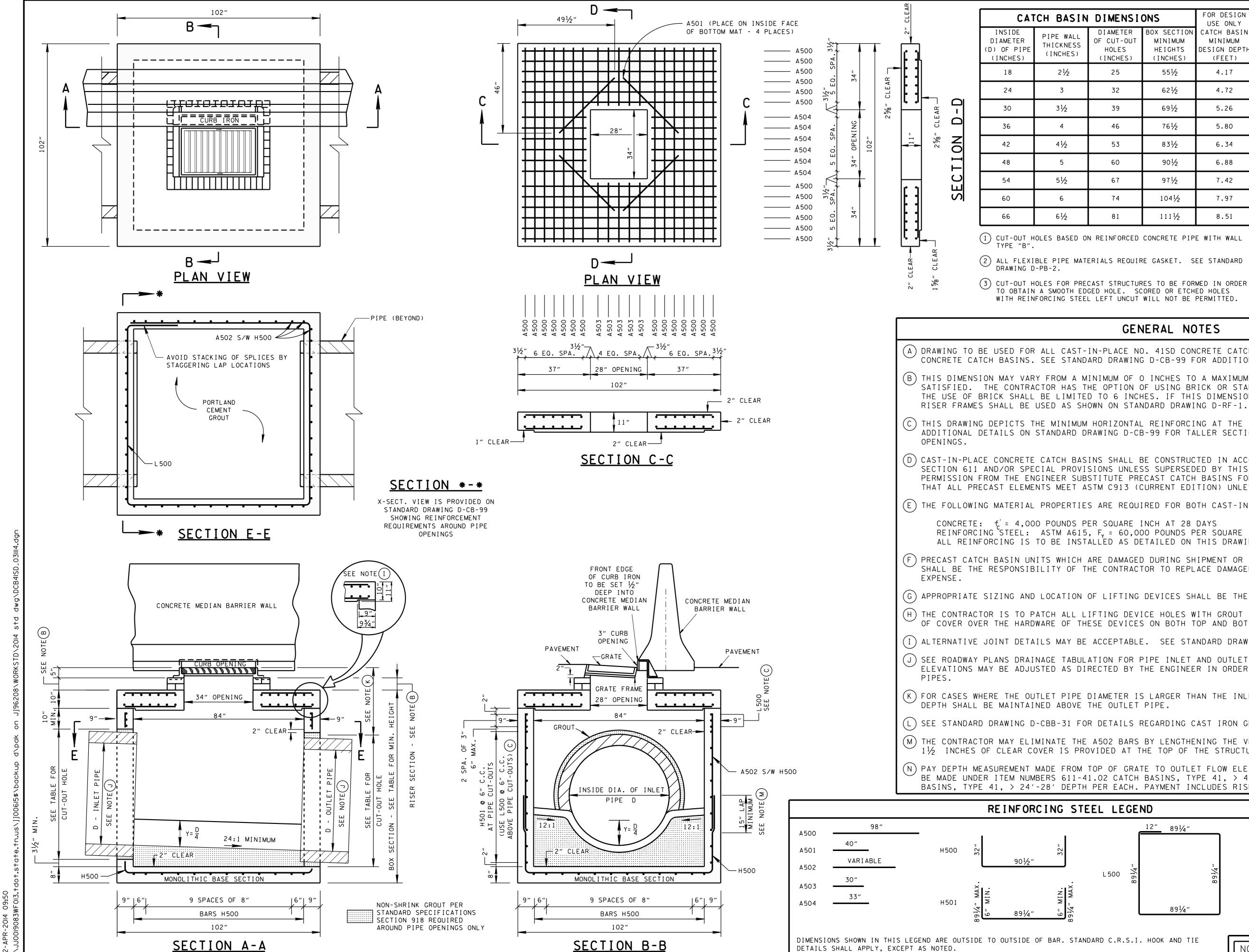
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-41.02 CATCH BASINS, TYPE 41, > 4'-8' DEPTH THROUGH 611-41.07 CATCH BASINS, TYPE 41, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND GRATE.

STEEL LEGEND			REVISION FHWA Al not required.
4 W V V V	571/4" "		OF TENNESSEE OF TRANSPORTATION
	571⁄4"	5'2" X 5	TANDARD 5'2" SQUARE TE NO. 41
E TO OUTSIDE OF BAR. STANDARD C.R.S ED.	.І. НООК	CATO	CH BASIN
		MEDIAN	BARRIER WALL)
[	NOT TO S	SCALE 9-5-00	D-CB-41SC

- □ 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.



N	DIMENSI	FOR DESIGN USE ONLY	
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	55½	4.17
	32	62 <sup>1</sup> ⁄2	4.72
	39	691⁄2	5.26
	46	76 <sup>1</sup> /2	5.80
	53	831/2	6.34
	60	901⁄2	6.88
	67	971⁄2	7.42
	74	1041⁄2	7.97
	81	1111/2	8.51

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

- 🗖 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.

- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- ☐ REV. 3-11-14: ELIMINATED STIRRUPS.

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

(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 O 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

(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

(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:

REINFORCING STEEL: ASTM A615, F, = 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

(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

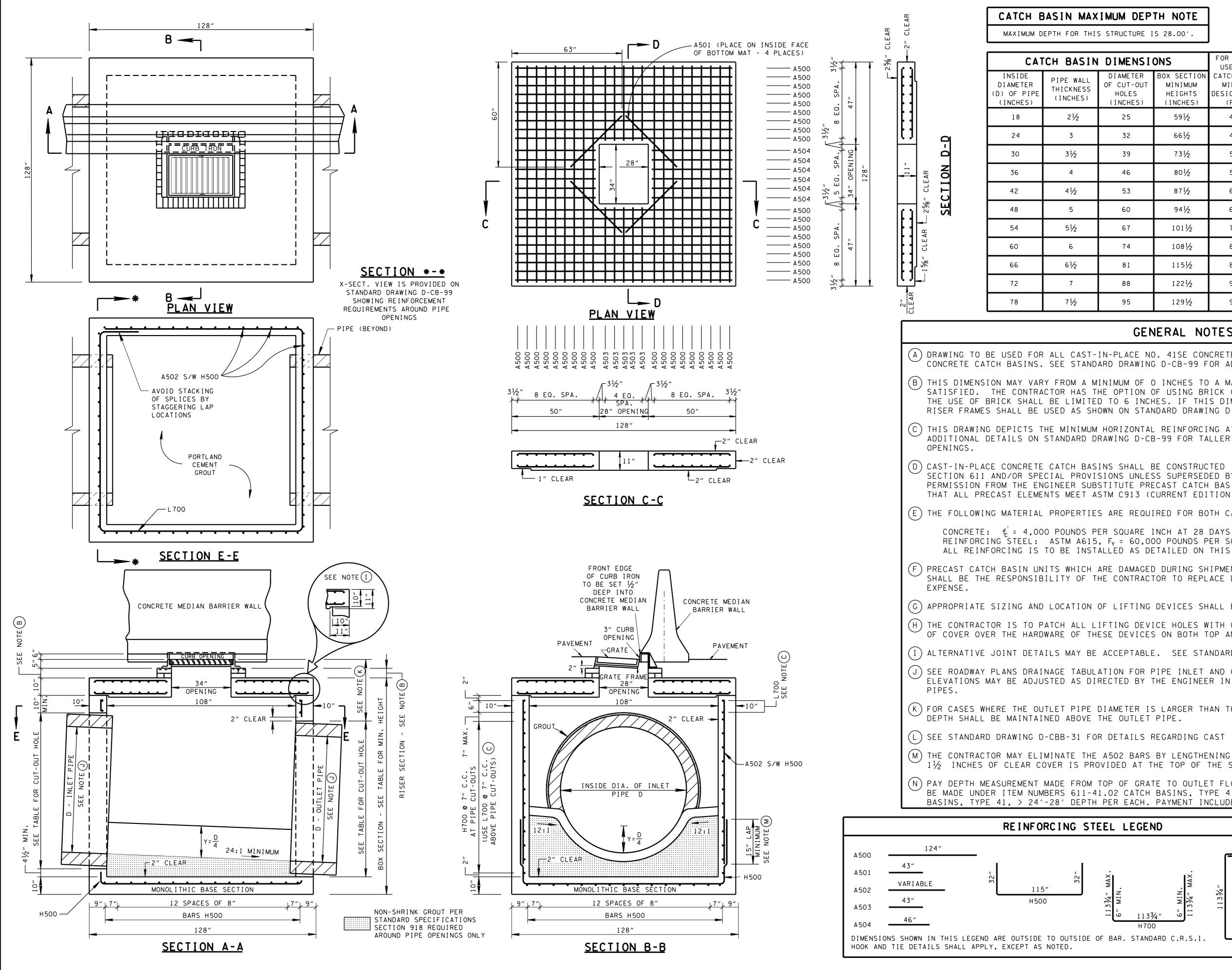
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

(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 11/2 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.

EEL LEGEND				EVISION FHWA
12	<u> </u>			_ NOT REQUIRED.
×4	4 "		STATE Department	of tennessee of transportation
L 500 168	89¼″ 89¼″		7'X CONCI	STANDARD 7' SOUARE RETE NO. 41 TCH BASIN
			(FOR US MEDIA	E UNDER CONCRETE N BARRIER WALL)
DARD C.R.S.I. HO	OK AND TIE	NOT TO SCALE	7-10-02	D-CB-41SD



AXIMUM DEPTH NOTE					REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.	
HIS STRUCTURE IS 28.00'.				REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.		
IN DIMENSIONS DIAMETER BOX SECTION		DNS BOX SECTION	FOR DESIGN USE ONLY CATCH BASIN		REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH	
L S	OF CUT-OUT HOLES (INCHES)	MINIMUM MINIMUM HEIGHTS DESIGN DEF	MINIMUM DESIGN DEPTH (FEET)			INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
	25	59½	4.25		REV. 3-11-14: ELIMINATED STIRRUPS.	
	32	66 <sup>1</sup> ⁄2	4.79			
	39	731/2	5.33			
	46	80 <sup>1</sup> ⁄2	5.88			
	53	871/2	6.42			
	60	941⁄2	6.96			
	67	1011/2	7.50		1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".	
	74	1081/2	8.04		2) ALL FLEXIBLE PIPE MATERIALS REQUIRE	
	81	115½	8.58		GASKET. SEE STANDARD DRAWING D-PB-2.	
	88	122 <sup>1</sup> ⁄2	9.13	Ċ	TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED	
	95	129½	9.67		HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.	
	GEN	IERAL NO	TES			

(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 O 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

(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:

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

(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

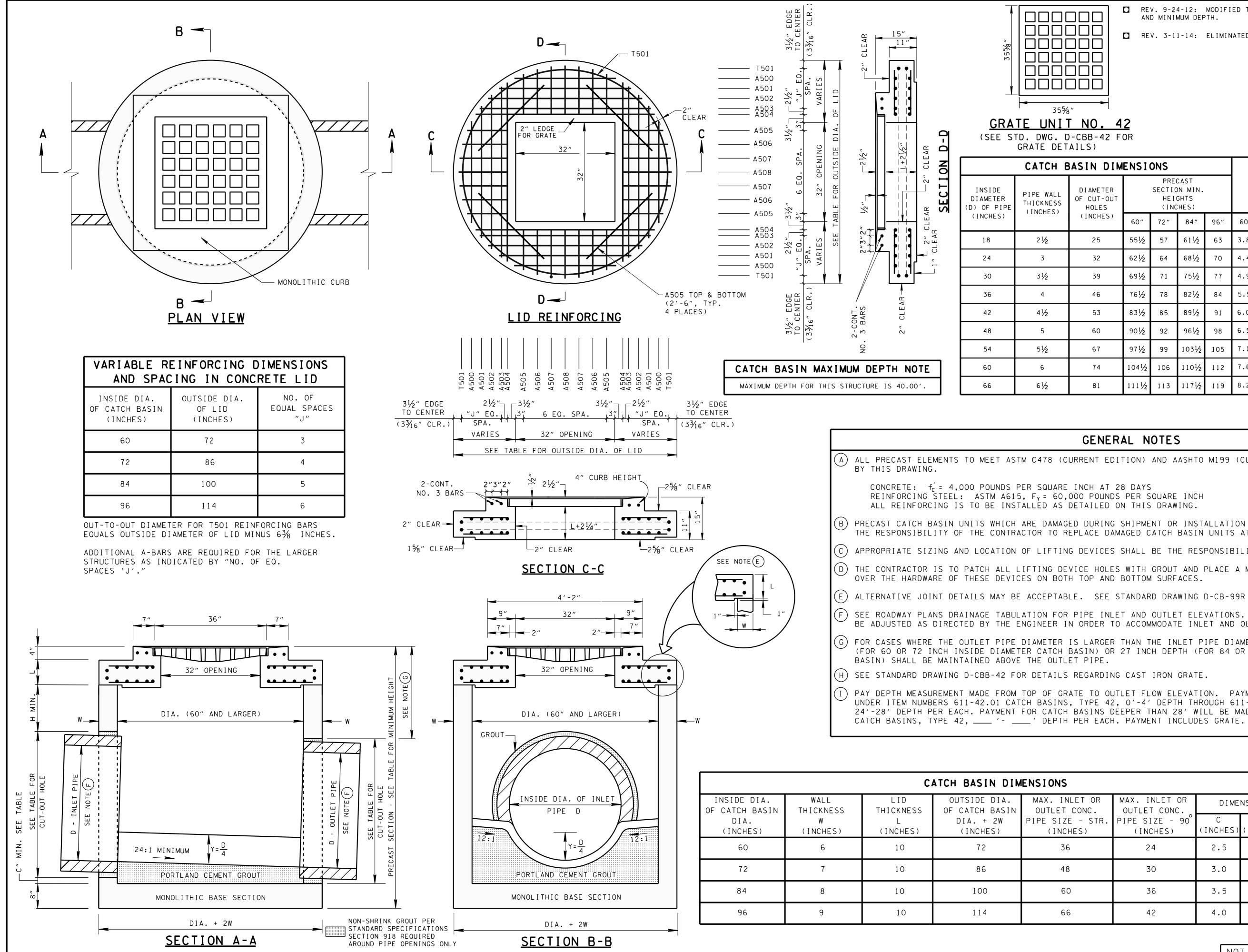
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

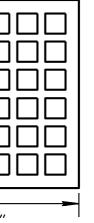
(L) SEE STANDARD DRAWING D-CBB-31 FOR DETAILS REGARDING CAST IRON GRATES, FRAMES AND CURB INLETS.

M THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT  $1\frac{1}{2}$  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.

TEEL LEGEND		MINOR REVISION FHWA APPROVAL NOT REQUIRED.
		STATE OF TENNESSEE Department of transportation
<sup>"</sup>	113¾" L 700	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





REV. 8 BASIN AASHTC SPECIF WITH I REINFC ADDITI EDITS. CBB-42 FOR ILS)										
ASIN DIM	ENSI	ONS					E S I GN ONL Y			
DIAMETER OF CUT-OUT HOLES		SECTIO HEI	CAST ON MIN. GHTS CHES)			MIN DESIGN	BASIN IMUM DEPTH ET)			
(INCHES)	60″	72″	84″	96″	60″	72″	84″	96″		
25	55½	57	61½	63	3.88	4.26	4.27	4.29		
32	62½	64	68½	70	4.42	4.80	4.83	4.83		
39	69½	71	75½	77	4.97	5.34	5.38	5.38		
46	76½	78	82½	84	5.51	5.88	5.92	5.92		
53	83½	85	89½	91	6.05	6.42	6.46	6.46		
60	90 <sup>1</sup> ⁄2	92	96½	98	6.59	6.97	7.00	7.00		
67	97 <sup>1</sup> ⁄2	99	103½	105	7.13	7.51	7.54	7.54		
74	104½	106	110½	112	7.67	8.05	8.08	8.08		
81	111 <sup>1</sup> ⁄2	113	117 <sup>1</sup> /2	119	8.22	8.59	8.63	8.63		

REV. 9-24-12: MODIFIED TOP SLAB

□ REV. 3-11-14: ELIMINATED STIRRUPS.

AND MINIMUM DEPTH.

- □ REV. 1-19-99: ADDED CURB HEIGHT.
- **D** REV. 5-27-01: CHANGED\_PAY ITEMS IN GENERAL NOTE (H) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.

REV. 8-01-12: REVISED CATCH ID FOR COMPLIANCE WITH LRFD BRIDGE DESIGN CATIONS, 4TH EDITION TERIMS. REVISED RCING, GENERAL NOTES AND NAL MISC. DRAFTING

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

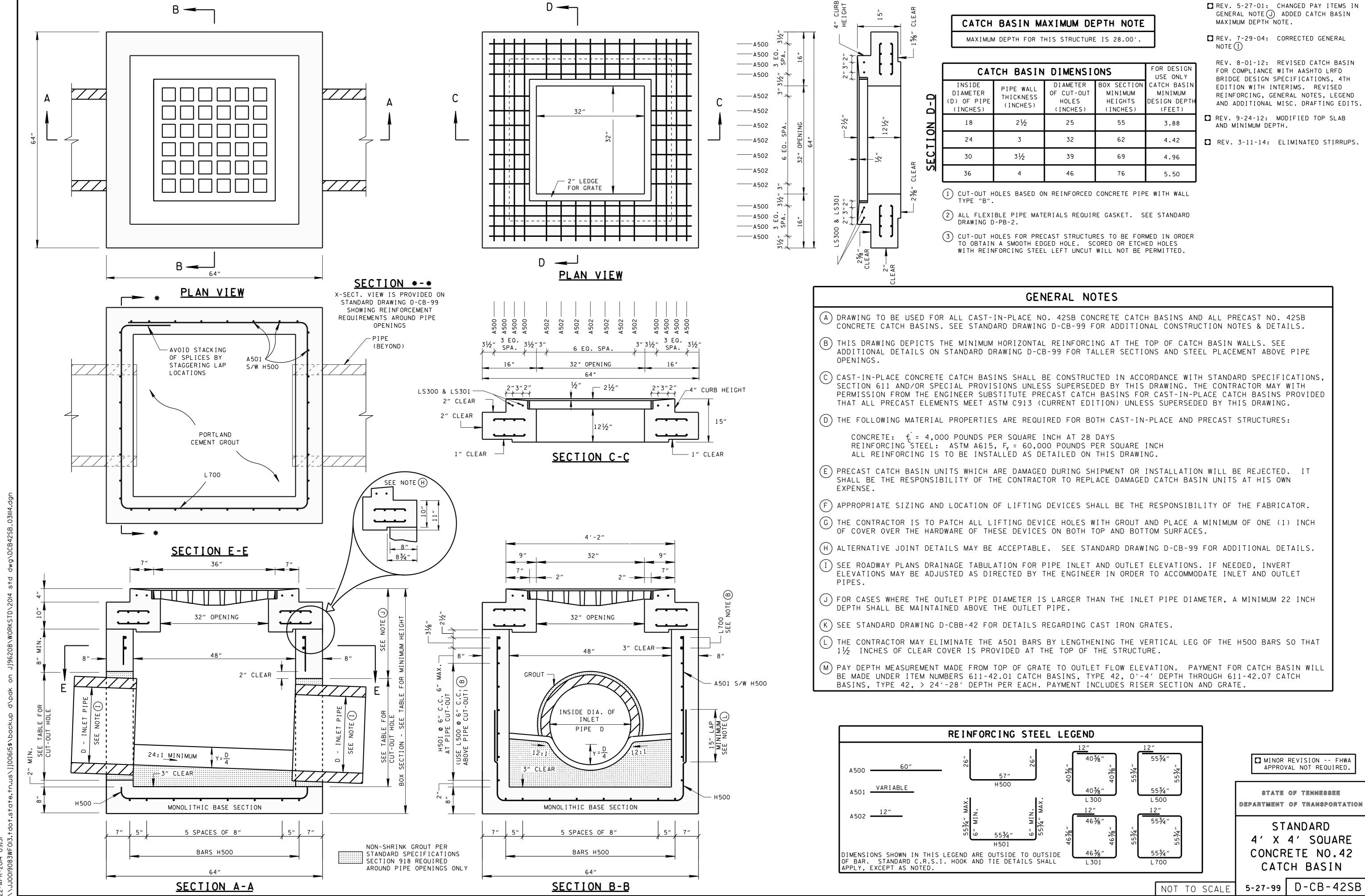
ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

- 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.
- APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
- THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER
- 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 23 INCH DEPTH (FOR 60 OR 72 INCH INSIDE DIAMETER CATCH BASIN) OR 27 INCH DEPTH (FOR 84 OR 96 INCH INSIDE DIAMETER CATCH
- (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,

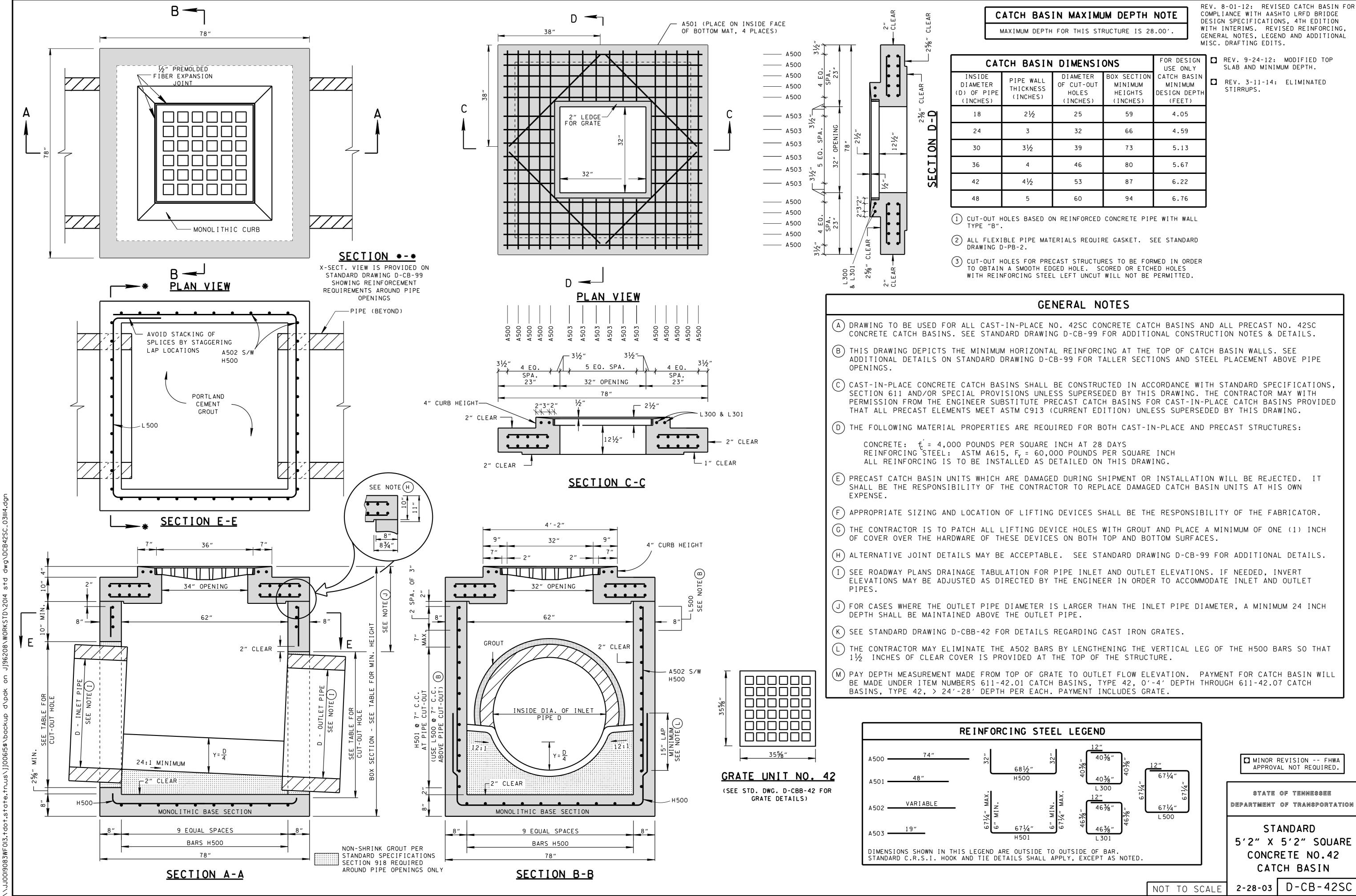
NOT TO SCALE

LET OR CONC.	MAX. INLET OR OUTLET CONC. PIPE SIZE - 90 (INCHES)	DIMENSION	
E - STR. HES)		C (INCHES)	H (INCHES)
	24	2.5	8
	30	3.0	8
	36	3.5	12
	42	4.0	12

MINOR REVISION FHWA APPROVAL NOT REQUIRED.					
		TENNESSEE TRANSPORTATION			
STANDARD PRECAST CIRCULAR NO. 42 CATCH BASIN					
10-26-97	C	)-CB-42RB			

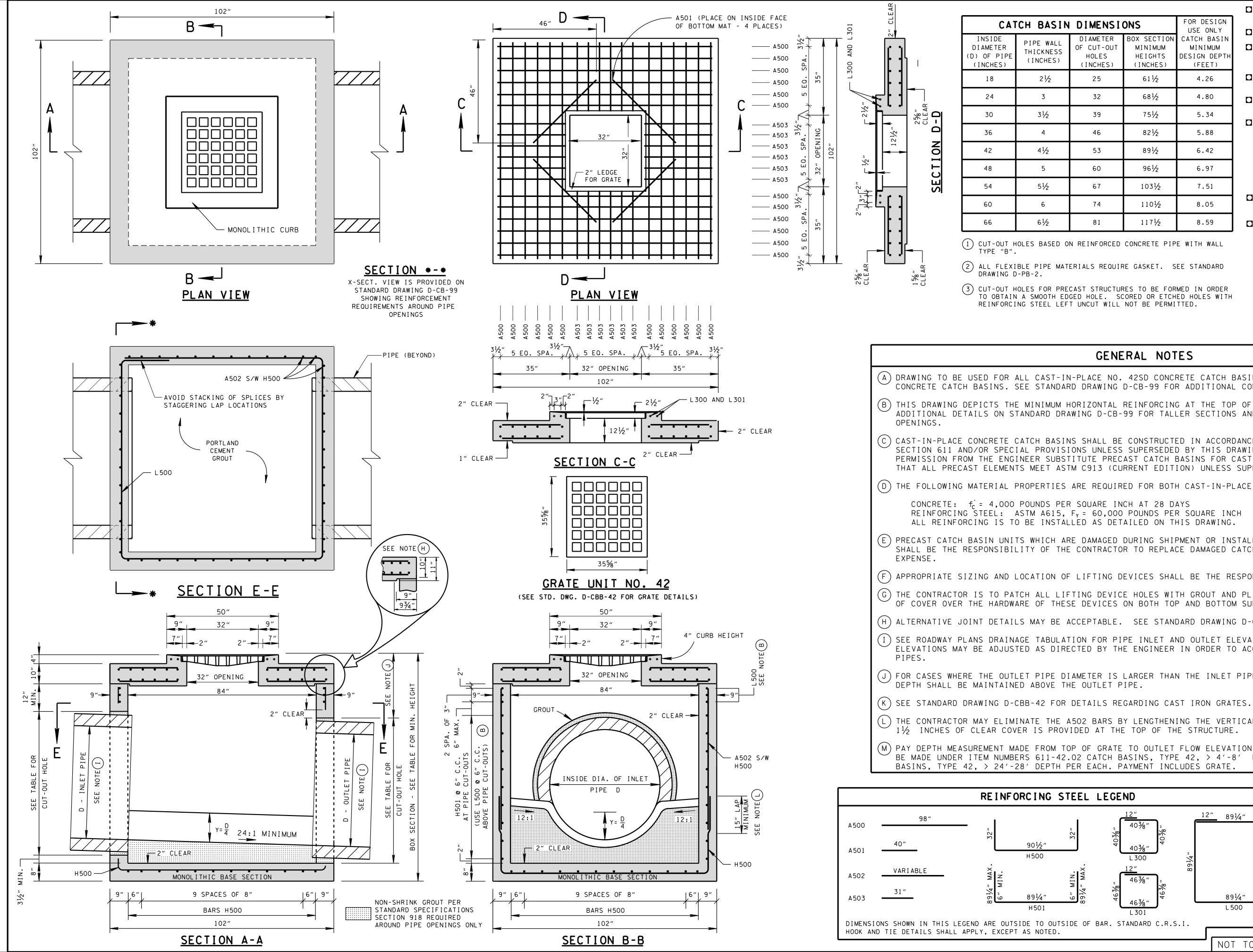


BASIN	FOR DESIGN USE ONLY		
E WALL CKNESS NCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2 <sup>1</sup> /2	25	55	3.88
3	32	62	4.42
31/2	39	69	4.96
4	46	76	5.50



ТСН	BASIN	MAXIMUM	DEPTH	NOTE

H BASIN	FOR DESIGN USE ONLY		
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21⁄2	25	59	4.05
3	32	66	4.59
31⁄2	39	73	5.13
4	46	80	5.67
4 <sup>1</sup> /2	53	87	6.22
5	60	94	6.76



N	DIMENSI	FOR DESIGN USE ONLY	
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
	25	611/2	4.26
	32	68½	4.80
	39	75½	5.34
	46	82 <sup>1</sup> ⁄2	5.88
	53	89½	6.42
	60	961⁄2	6.97
	67	1031/2	7.51
	74	1101/2	8.05
	81	1171/2	8.59

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

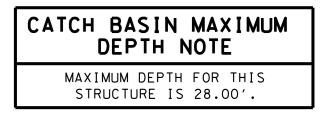
(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS



## 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

(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:

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

(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.

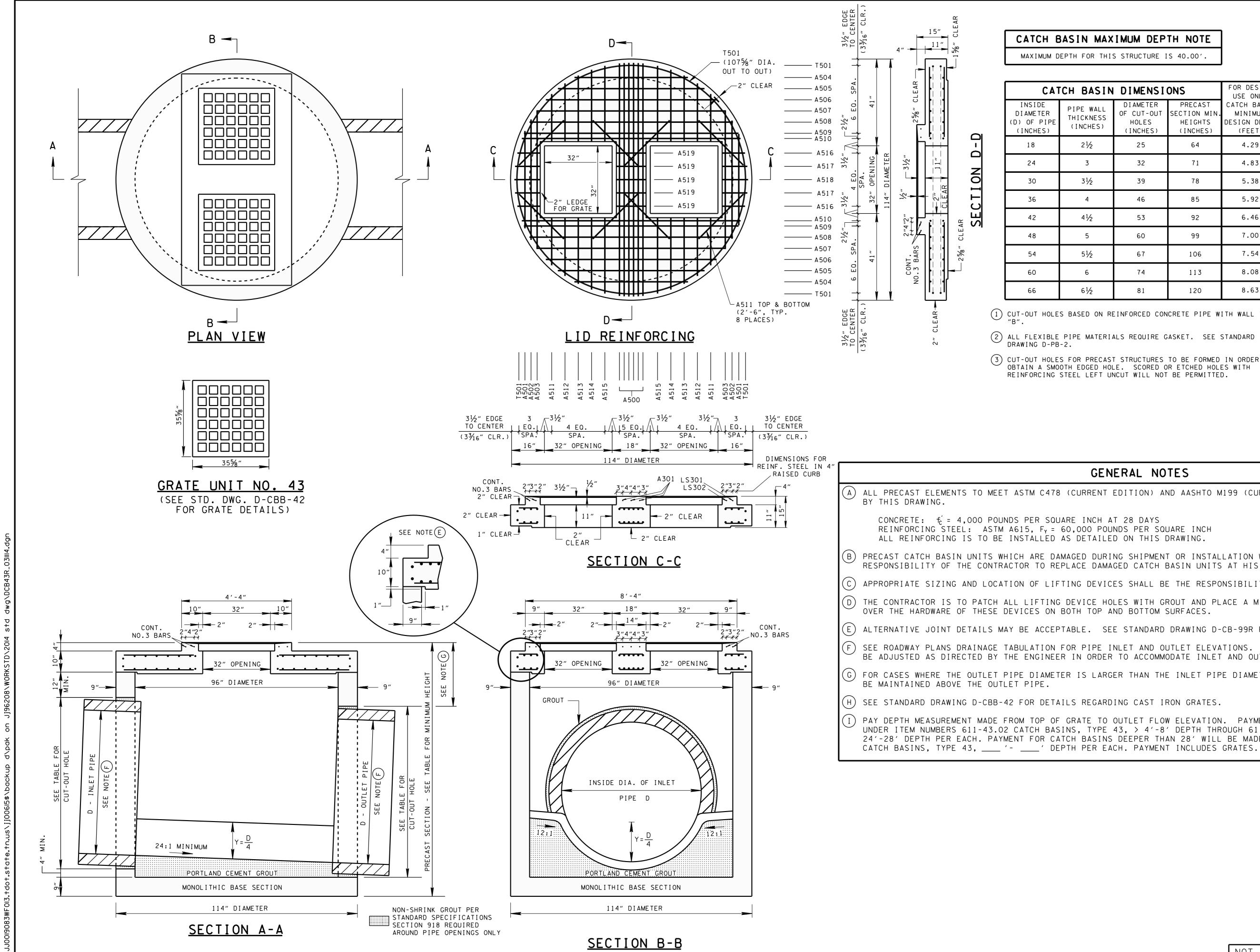
(I) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(J) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 26 INCH

(L) THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT  $1\frac{1}{2}$  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.

TEEL	LEGEND				
		2″89¼″			REVISION FHWA Al not required.
32"	<sup>1078</sup> <sup>1078</sup> <sup>12″</sup>		891⁄4"	STATE Department	of tennessee of transportation
0E 0F 0F	12″ 00 463%″ 00 463%% 00 463% 00 463%% 00	89¼" L 500	68	SQUAF	ARD 7' X 7' RE CONCRETE NO. 42 CH BASIN
		NOT TO	SCALE	8-28-98	D-CB-42SD



4 09:51 3WF013.

N	MAXIMUM	DEPTH	NOTE	

MAXIMUM DEPTH FOR THIS STRUCTURE IS 40.00'.

BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY	
PE WALL ICKNESS NCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	PRECAST SECTION MIN. HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
21/2	25	64	4.29	
3	32	71	4.83	
3 <sup>1</sup> /2	39	78	5.38	
4	46	85	5.92	
4 <sup>1</sup> /2	53	92	6.46	
5	60	99	7.00	
5 <sup>1</sup> /2	67	106	7.54	
6	74	113	8.08	
6 <sup>1</sup> /2	81	120	8.63	

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

(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.

- REV 9-24-12: ADDED BAR DESIGNATION FOR CONTINUOUS #3 BARS AROUND GRATE AND MODIFIED TOP SLAB.
- **D** REV. 3-11-14: ELIMINATED STIRRUPS.

## GENERAL NOTES

ALL PRECAST ELEMENTS TO MEET ASTM C478 (CURRENT EDITION) AND AASHTO M199 (CURRENT EDITION) UNLESS SUPERSEDED

(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.

THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER

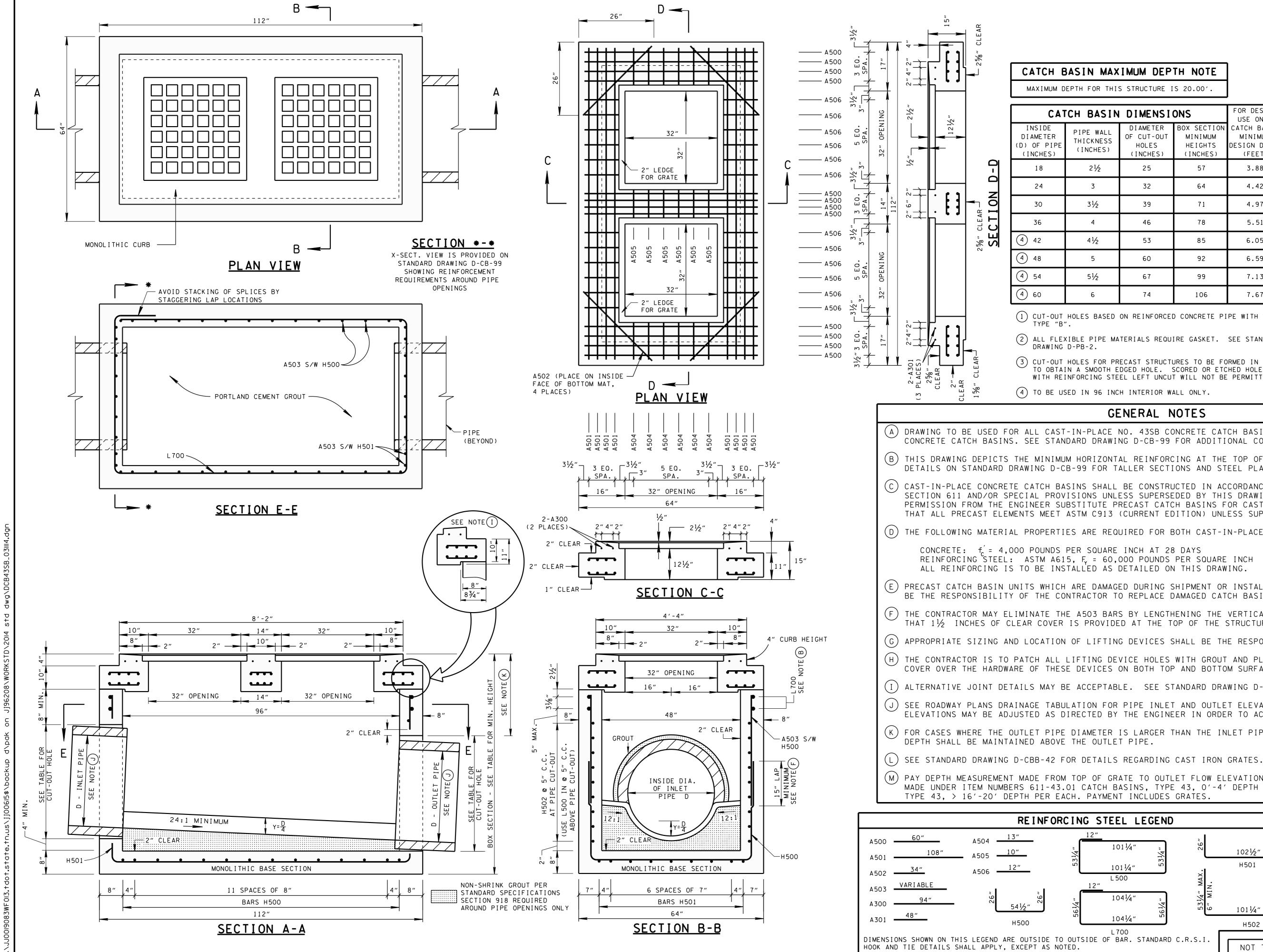
(E) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99R FOR ADDITIONAL DETAILS.

(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

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,

		REVISION FHWA Al not required.
		OF TENNESSEE OF TRANSPORTATION
	C I N	ARD PRECAST RCULAR 0. 43R CH BASIN
NOT TO SCALE	1-19-00	D-CB-43R



SIN	MAXIMUM	DEPTH	NOTE	
				1

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

H BASIN	DIMENSI	ONS	FOR DESIGN USE ONLY
PIPE WALL HICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21⁄2	25	57	3.88
3	32	64	4.42
3 <sup>1</sup> /2	39	71	4.97
4	46	78	5.51
4 <sup>1</sup> /2	53	85	6.05
5	60	92	6.59
5½	67	99	7.13
6	74	106	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.

## 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:

REINFORCING STEEL: ASTM A615, F = 60,000 POUNDS PER SQUARE INCH

(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  $1\frac{1}{2}$  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) 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 22 INCH

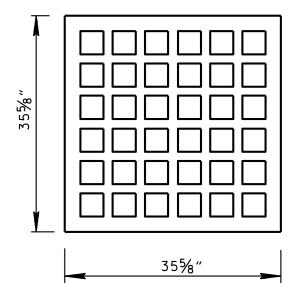
(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-43.01 CATCH BASINS, TYPE 43, 0'-4' DEPTH THROUGH 611-43.05, CATCH BASINS,

NG STEEL LEGEND					
12″ 101¼″ ×	26"	1021⁄2″	26"	STATE Department	OF TENNESSEE OF TRANSPORTATION
101 <sup>1</sup> /4"		H501			
L 500 12"	4" MAX. MIN.		MIN. 4" MAX.		RD 8' X 4'
104¼″ ː	53 <sup>1</sup> /4" 6″ MI			REC1	FANGUL AR
104¼″ * ***********************************	6,13	101¼″	6 " 5 3	CONCRE	TE NO.43SB
	_	H502		CATC	CH BASIN
L700 SIDE OF BAR. STANDARD C	.R.S.I.	ΝΟΤ ΤΟ	SCALE	10-26-97	D-CB-43SB

- □ 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.

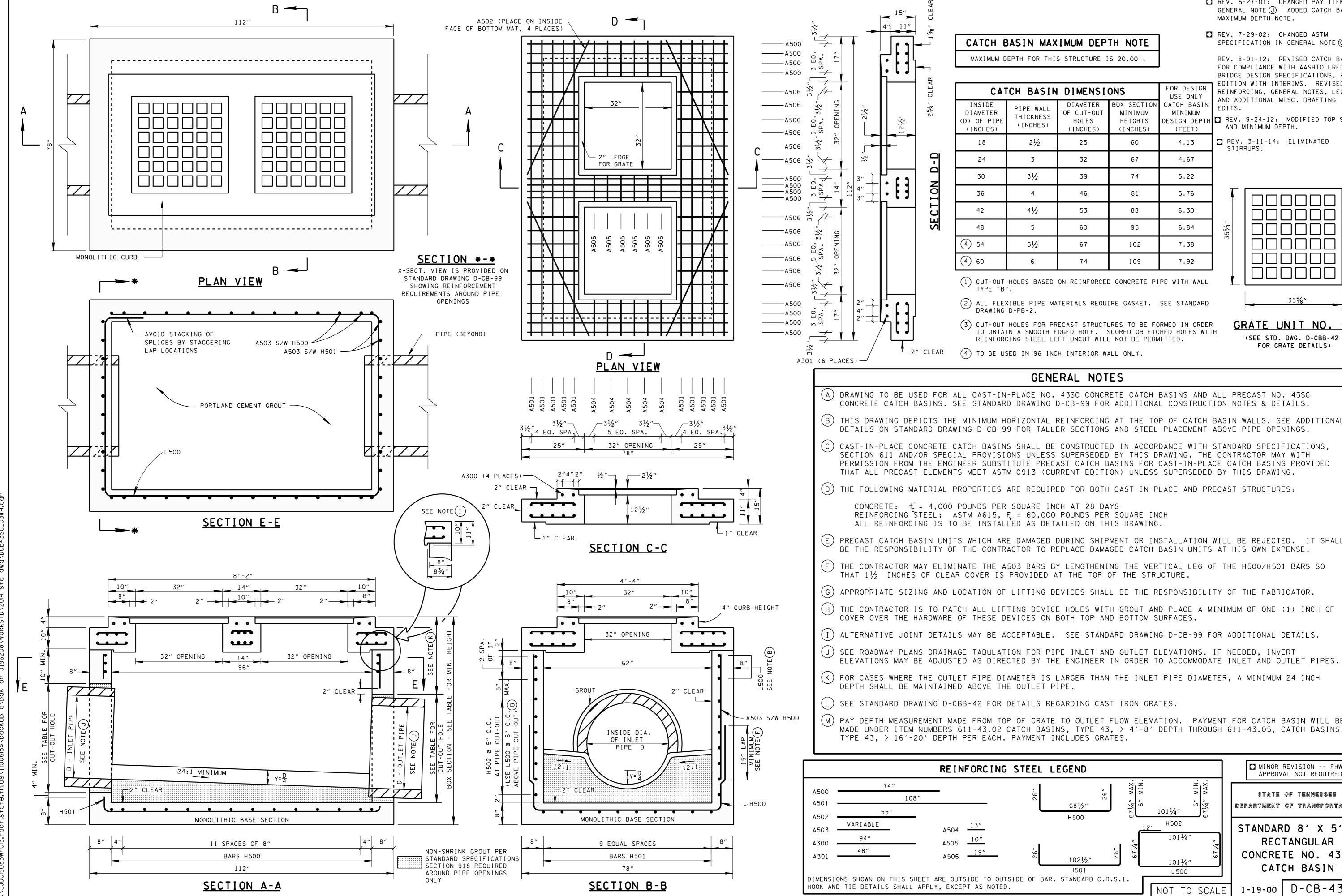
- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.



## GRATE UNIT NO. 43 (SEE STD. DWG. D-CBB-42

FOR GRATE DETAILS)

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED



## CATCH BASIN MAXIMUM DEPTH NOTE

MAXIMUM DEPTH FOR THIS STRUCTURE IS 20.00'

CH BASIN	FOR DESIGN USE ONLY		
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
2 <sup>1</sup> /2	25	60	4.13
3	32	67	4.67
31/2	39	74	5.22
4	46	81	5.76
4 <sup>1</sup> /2	53	88	6.30
5	60	95	6.84
5½	67	102	7.38
6	74	109	7.92

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

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. 43SC CONCRETE CATCH BASINS AND ALL PRECAST NO. 43SC CONCRETE CATCH BASINS. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.

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.

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:

(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  $1\frac{1}{2}$  INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

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.

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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 24 INCH

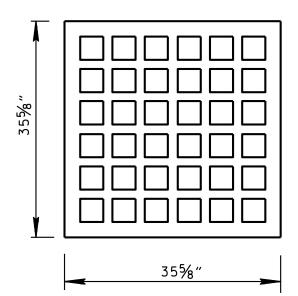
(M) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-43.02 CATCH BASINS, TYPE 43, > 4'-8' DEPTH THROUGH 611-43.05, CATCH BASINS,

STEEL LEGEND				R REVISION FHWA DVAL NOT REQUIRED.
\$9 68½"	26" 67 <u>1/4" MA</u> X. 6" MIN.	101 <sup>1</sup> /4" MAX.	STAT DEPARTMEN	
H500 <sup>™</sup> 102½′ H501 IDE OF BAR. STANDARI	26 <i>"</i> 671/4 <i>"</i>	н502 101¼" <u>101¼"</u> 101¼" L 500	RE CONCR	RD 8' X 5'2" CTANGULAR ETE NO. 43SC TCH BASIN
IDE OF BAR. STANDAR	J C.R.S.I.	NOT TO SCAL	E 1-19-00	D-CB-43SC

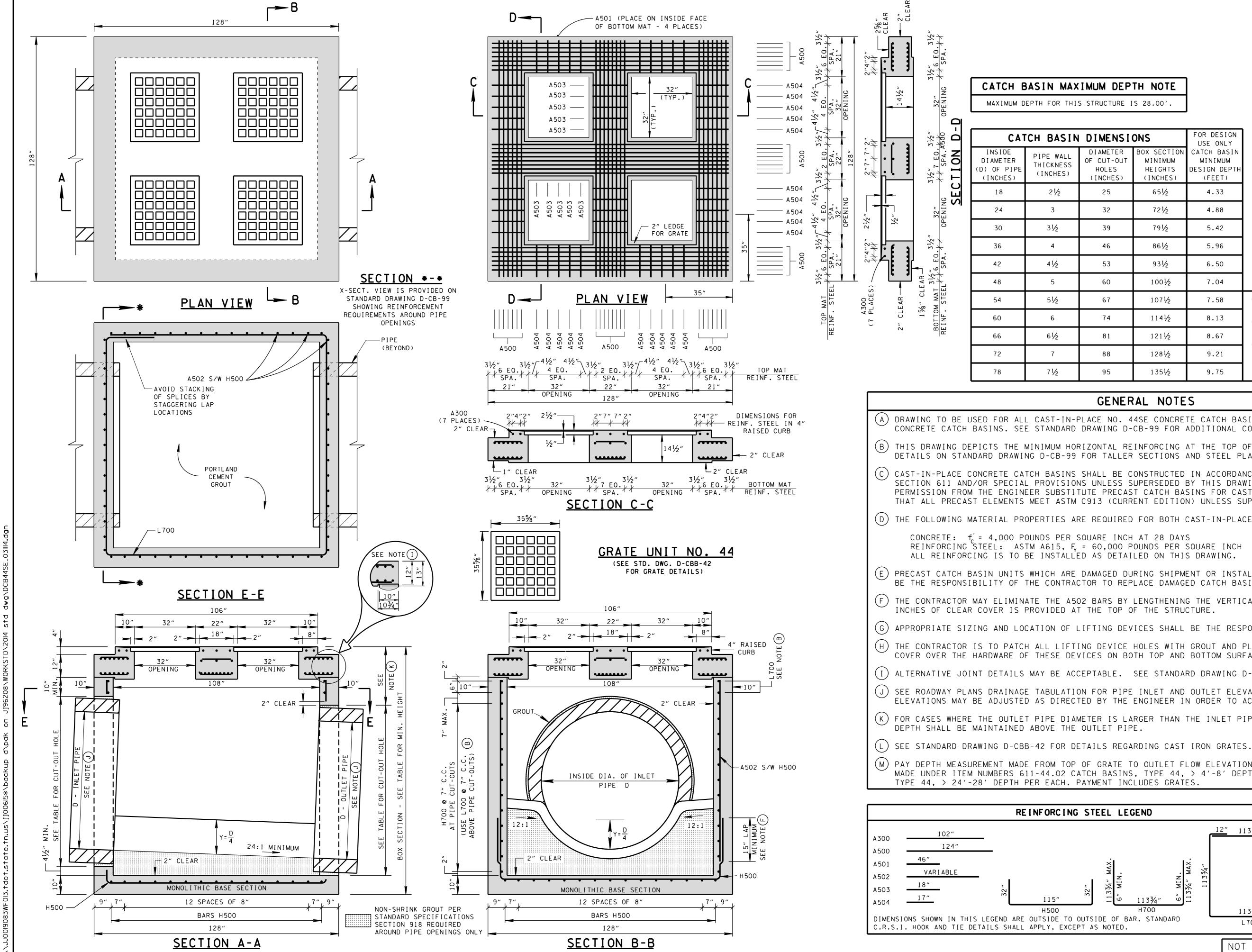
- □ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE (J) ADDED CATCH BASIN MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE (C)

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.

- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.



GRATE UNIT NO. 43 (SEE STD. DWG. D-CBB-42 FOR GRATE DETAILS)



					REV. 2-13-04: CHANGED REINFORCING STEEL IN BASE SECTION.
١X	IMUM DEP	TH NOTE			REV. 5-5-05: ADDED EXTRA STEEL DIMENSION TO SECTION C-C.
HIS	S STRUCTURE I	S 28.00′.			
					REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE
[ N	DIMENSI	ONS	FOR DESIGN USE ONLY		DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL
-	DIAMETER OF CUT-OUT	BOX SECTION MINIMUM			NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
5	HOLES (INCHES)	HEIGHTS (INCHES)	DESIGN DEPTH (FEET)		REV. 3-11-14: ELIMINATED STIRRUPS.
	25	65½	4.33		
	32	72 <sup>1</sup> /2	4.88		
	39	79½	5.42		
	46	861⁄2	5.96		
	53	931⁄2	6.50		
	60	1001/2	7.04		
	67	1071/2	7.58	1	CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	74	1141/2	8.13	2	ALL FLEXIBLE PIPE MATERIALS REQUIRE
	81	1211/2	8.67	(3)	GASKET. SEE STANDARD DRAWING D-PB-2.
	88	128½	9.21		TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
	95	1351/2	9.75		HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

REV. 7-29-02: CHANGED ASTM

IN BASE SECTION.

SPECIFICATION IN GENERAL NOTE C

□ REV. 9-11-02: CHANGED REINFORCING STEEL

## 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.

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:

REINFORCING STEEL: ASTM A615, F = 60,000 POUNDS PER SQUARE INCH ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.

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 11/2

(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.

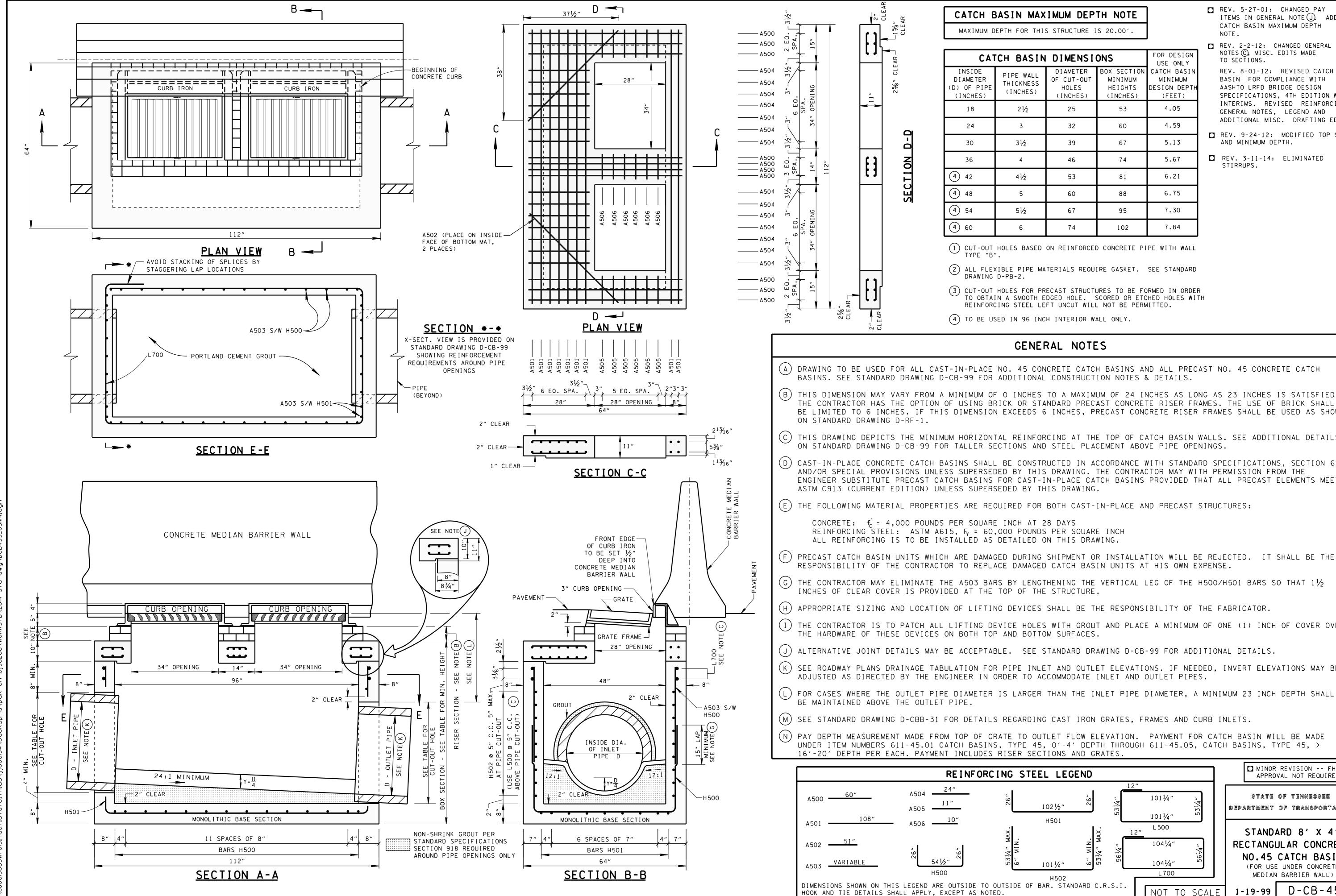
(I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.

(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

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,

		<b>-</b>
G STEEL LEGEND		MINOR REVISION FHWA APPROVAL NOT REQUIRED.
_1	<u>2"</u> 113¾"	ATTROVAL NOT REGUIRED.
		STATE OF TENNESSEE
мах . 	۶	DEPARTMENT OF TRANSPORTATION
	.1334	III SIANDARD I
32 <sup>32</sup> <sup>32</sup> <sup>32</sup> <sup>32</sup> <sup>113</sup> <sup>34</sup> <sup>111</sup> <sup>113</sup> <sup>34</sup>	-	9' X 9' SQUARE
Н700	113¾"	CONCRETE NO. 44
OUTSIDE OF BAR. STANDARD	L700	CATCH BASIN
	NOT TO SCA	LE 10-26-98 D-CB-44SE



SI	Ν	MAX	I MUM	DE	PTH	4	ΝΟΤ	Έ	
ТН	FOR	THIS	STRUC	TURE	ΙS	20	.00′	•	

H BASIN	FOR DESIGN USE ONLY		
PIPE WALL THICKNESS (INCHES)	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)
21⁄2	25	53	4.05
3	32	60	4.59
31/2	39	67	5.13
4	46	74	5.67
4 <sup>1</sup> /2	53	81	6.21
5	60	88	6.75
5½	67	95	7.30
6	74	102	7.84

- 1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL
- 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. 45 CONCRETE CATCH BASINS AND ALL PRECAST NO. 45 CONCRETE CATCH

THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 23 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

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

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

(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  $1\frac{1}{2}$ 

(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

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

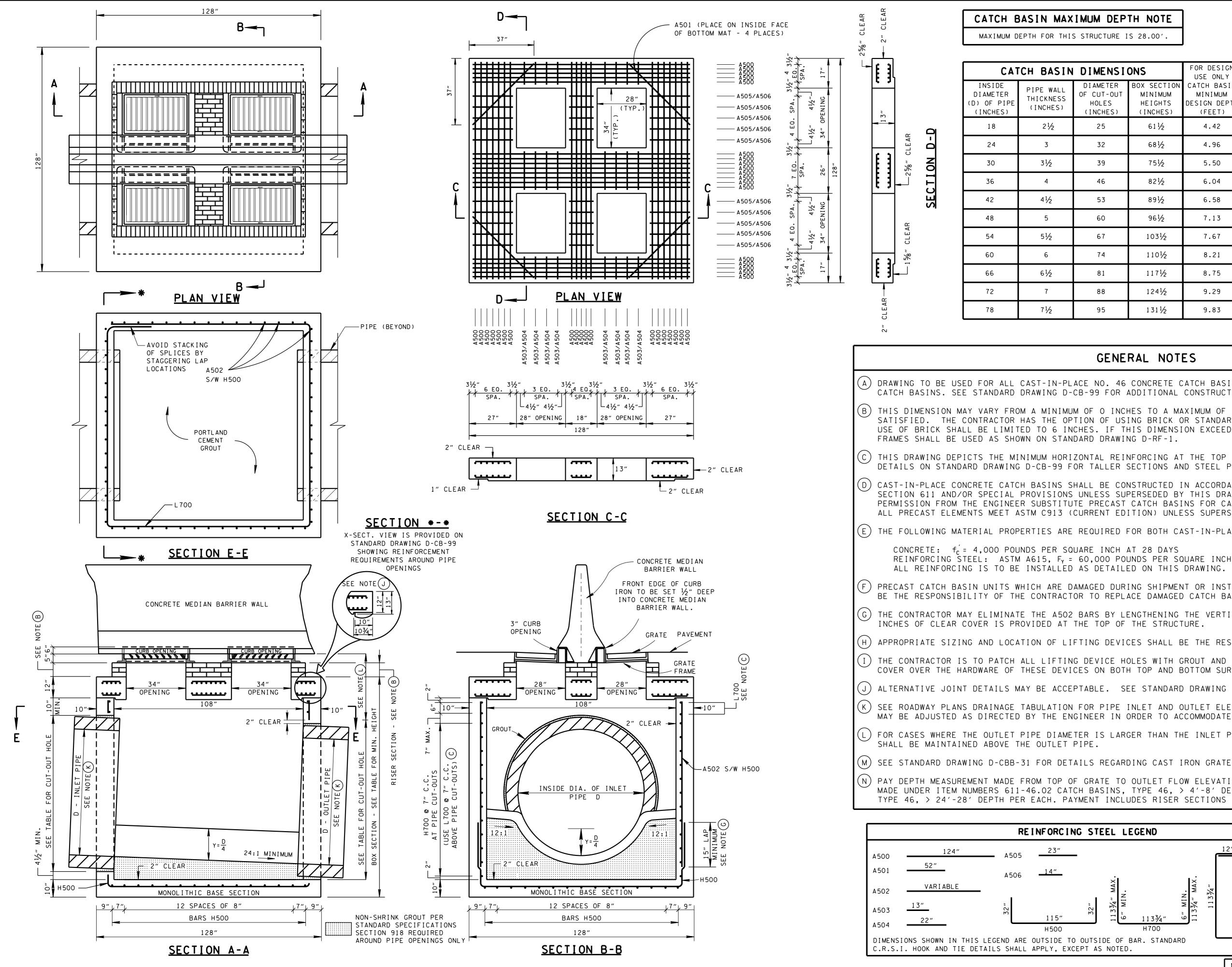
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE

(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, >

IG ST	EEL LEGE	END				MINOR REVISION FHW APPROVAL NOT REQUIRED	
26"	1021⁄2″	26"	53 <sup>1</sup> /4 "	<u> </u>	531/4"	STATE OF TENNESSEE Department of transportat	FION
MAX.	H501	<u> </u> . МАХ.		L 500 2″		STANDARD 8' X 4'	
531/4" M 6" MIN.	101¼″	6" MIN. 531⁄4" M	561/4"	104¼" 104¼"	561/4"	RECTANGULAR CONCRE NO.45 CATCH BASIN	N
	H502		<u> </u>	L 700		(FOR USE UNDER CONCRETE MEDIAN BARRIER WALL)	
SIDE OF	F BAR. STANE	ARD C.R	.S.I.	ΝΟΤ ΤΟ	SCALE	E 1-19-99 D-CB-45	δŚ

- **D** 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.
- □ REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- □ REV. 3-11-14: ELIMINATED STIRRUPS.



			REV. 5-30-02: MODIFIED REINFORCING
IMUM DEP	TH NOTE		STEEL.
S STRUCTURE IS 28.00'.			REV. 5-30-02: CHANGED REINFORCING STEE IN BASE SECTION.
DIMENSIONS		FOR DESIGN USE ONLY	REV. 2-13-04: CHANGED REINFORCING STEE IN BASE SECTION.
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
25	61 <sup>1</sup> /2	4.42	REV. 8-01-12: REVISED CATCH BASIN FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH
32	68 <sup>1</sup> ⁄2	4.96	INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC.
39	75½	5.50	DRAFTING EDITS.
46	821⁄2	6.04	REV. 3-11-14: ELIMINATED STIRRUPS.
53	891⁄2	6.58	
60	96 <sup>1</sup> ⁄2	7.13	
67	103½	7.67	1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
74	110 <sup>1</sup> ⁄2	8.21	2 ALL FLEXIBLE PIPE MATERIALS REQUIRE
81	1171/2	8.75	GASKET. SEE STANDARD DRAWING D-PB-2.
88	1241/2	9.29	TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
95	1 3 1 <sup>1</sup> /2	9.83	HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(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 O 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

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:

(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  $1\frac{1}{2}$ 

(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.

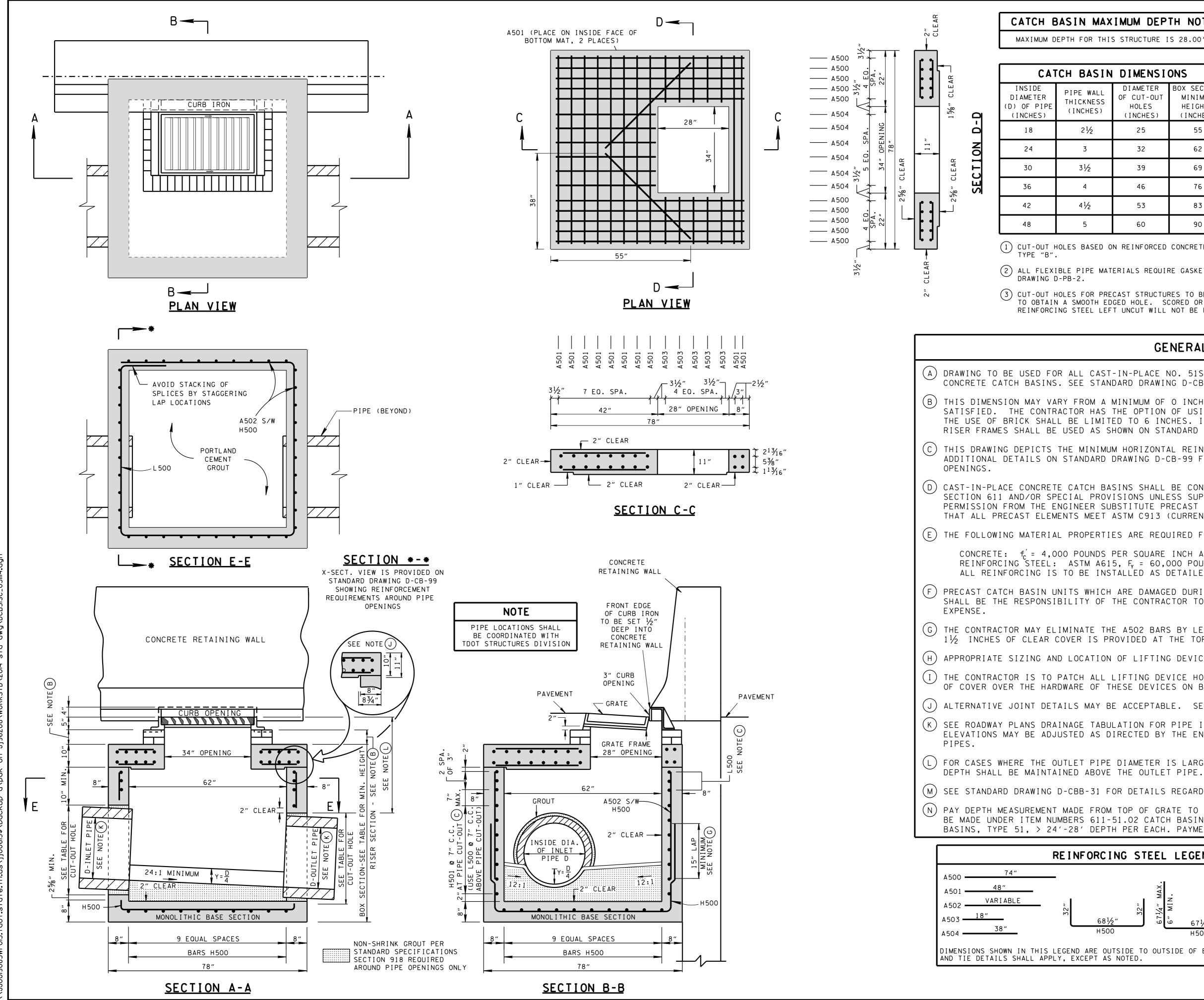
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

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

(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.

NG STEEL LEGEND				REVISION FHWA Al not required.
_1	1 <u>2″</u> 113¾″			
= [			STATE	OF TENNESSEE
×i i i			DEPARTMENT	OF TRANSPORTATION
й МАХ N. 334"		33/4"	ST	ANDARD
32 <i>"</i> 334 <i>"</i> MIN 334" 1133		113	9' X 9	
			CONCRE	TE NO. 46
Н700	1133⁄4″		CATC	H BASIN
O OUTSIDE OF BAR. STANDARD	L700		(FOR USE MEDIAN	UNDER CONCRETE BARRIER WALL)
	NOT TO	SCALE	5-27-99	D-CB-46SE



IMUM DEP	TH NOTE		
S STRUCTURE I	S 28.00′.		
		-	
DIMENSI	FOR DESIGN USE ONLY		
DIAMETER OF CUT-OUT	BOX SECTION MINIMUM	CATCH BASIN MINIMUM	
HOLES (INCHES)	HEIGHTS (INCHES)	DESIGN DEPTH (FEET)	

HOLES (INCHES)	HEIGHTS (INCHES)	DESIGN DEPTH (FEET)
25	55	4.13
32	62	4.67
39	69	5.22
46	76	5.76
53	83	6.30
60	90	6.84

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

□ REV. 5-27-01: CHANGED PAY ITEMS IN GENERAL NOTE () 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.
- REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.
- REV. 3-11-14: ELIMINATED STIRRUPS.

(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.

THIS DIMENSION MAY VARY FROM A MINIMUM OF O 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

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

(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.

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

CONCRETE:  $f_r = 4,000$  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.

68<sup>1</sup>/2"

H500

(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

THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 11/3 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.

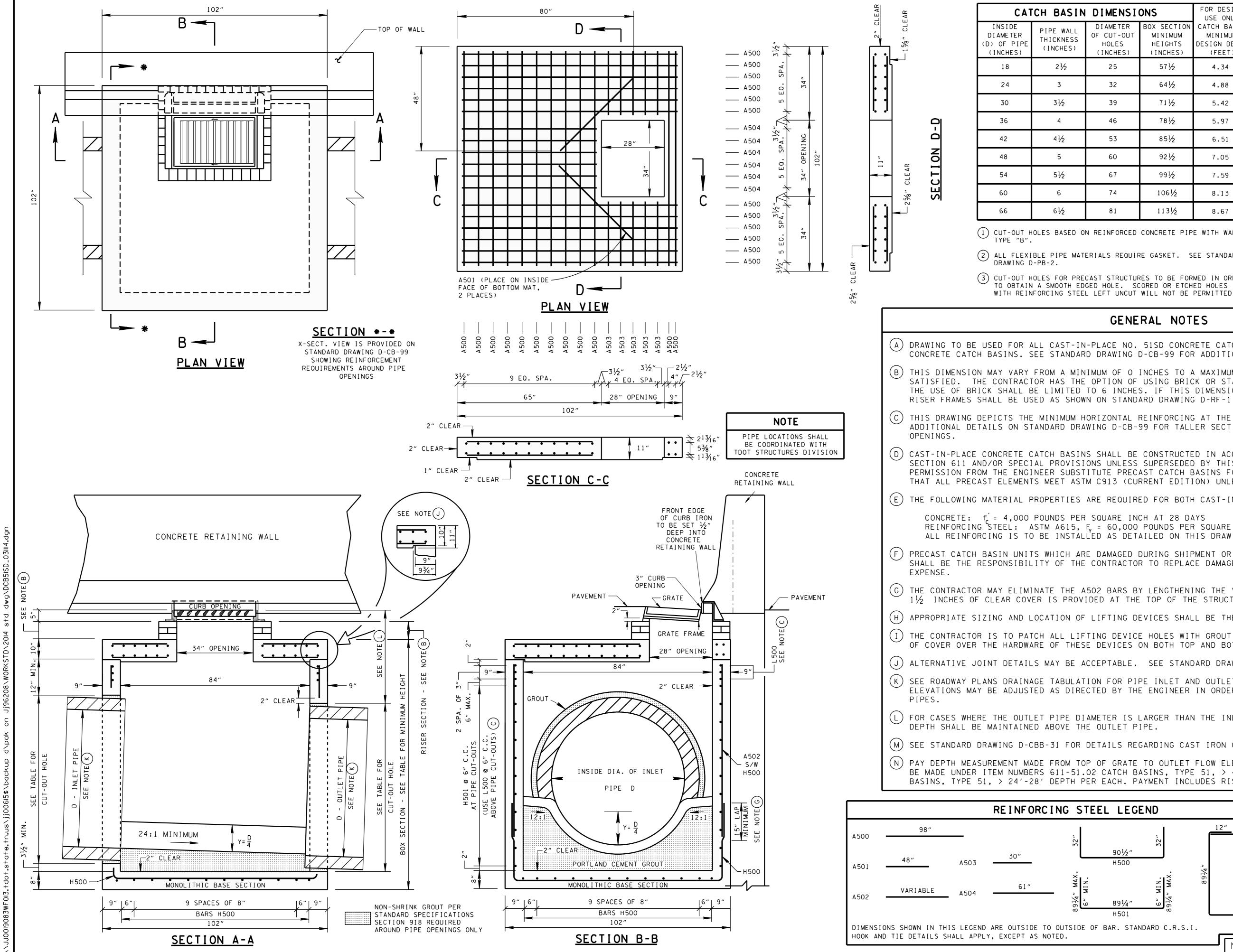
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 25 INCH

(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.

IG STEEL LEGEND	MINOR REVISION FHWA APPROVAL NOT REQUIRED.
32" 32" 32" 32" 32" 32" 14" MAX. 57]4" MAX. 57]4" MAX. 57]4" MAX.	STATE OF TENNESSEE Department of transportation
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO. 51
SIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK NOTED.	CATCH BASIN
	(FOR USE IN FRONT OF CONCRETE RETAINING WALL)
NOT TO SCA	ALE 10-26-00 D-CB-51SC



ΙN	DIMENSI	FOR DESIGN USE ONLY		
.L SS )	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
	25	571/2	4.34	
	32	64 <sup>1</sup> ⁄2	4.88	
	39	71 <sup>1</sup> /2	5.42	
	46	78½	5.97	
	53	85½	6.51	
	60	921⁄2	7.05	
	67	99 <sup>1</sup> ⁄2	7.59	
	74	1061/2	8.13	
	81	1131/2	8.67	

(1) CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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. 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 O 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

(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

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.

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

REINFORCING STEEL: ASTM A615, F = 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

THE CONTRACTOR MAY ELIMINATE THE A502 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT  $1\frac{1}{2}$  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.

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

) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 27 INCH

(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.

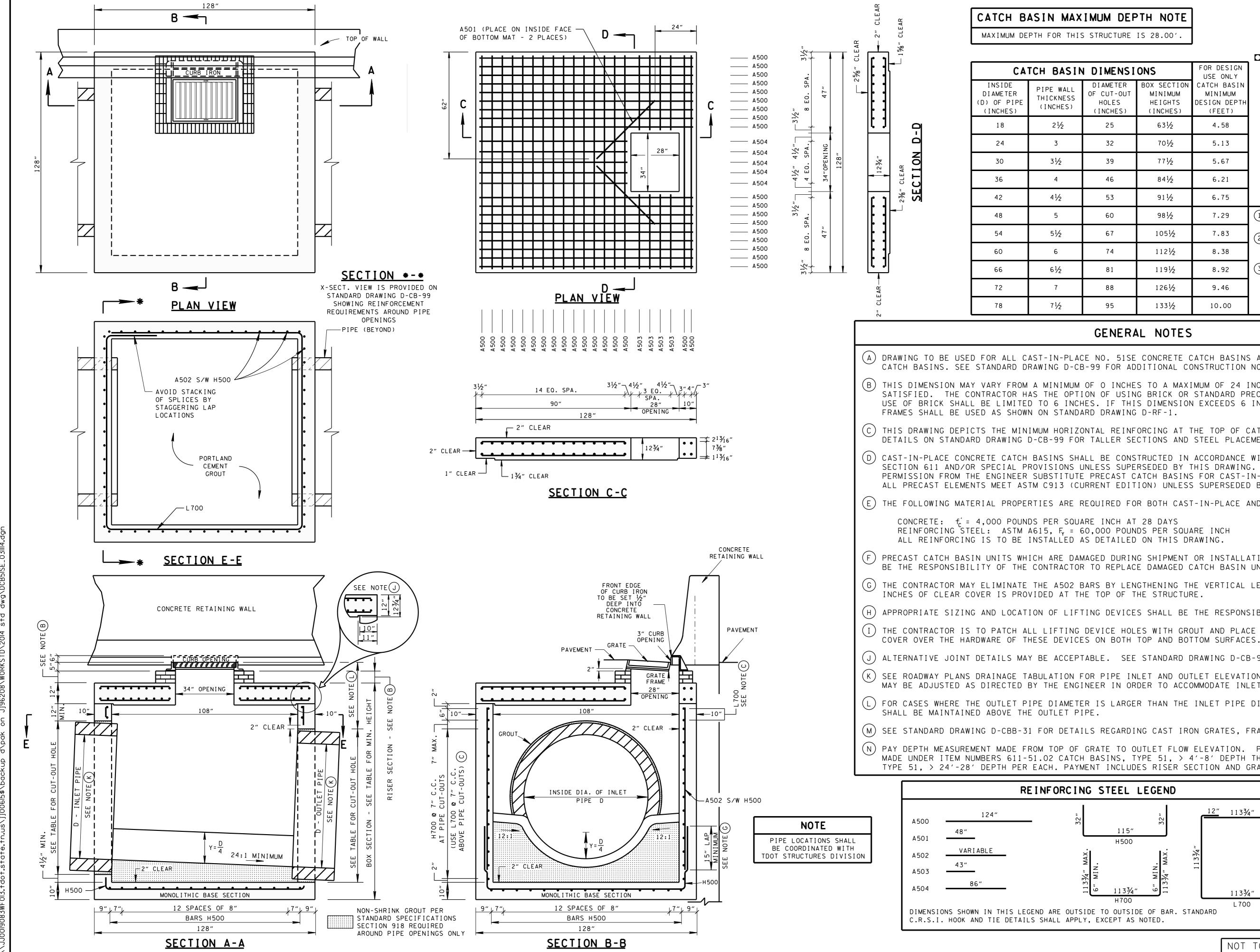
STEEL LEGEND			REVISION FHWA Al not required.
	2″ 89¼″	AFFROM	AL NOT REQUIRED.
й <u>90½"</u> H500 į		STATE Department	of tennessee of transportation
MIN. MIN. 8914	8914	7' X	
من <u>891/4</u> من 20 H501 DE OF BAR. STANDARD C.R.S.I.	89¼″ L 500	CAT	ETE NO. 51 CH BASIN N FRONT OF CONCRETE AINING WALL )
DE OF DAIL. STANDAILD C.IL.S.I.	NOT TO SCALE	9-11-02	D-CB-51SD

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.

REV. 9-24-12: MODIFIED TOP SLAB AND MINIMUM DEPTH.

REV. 3-11-14: ELIMINATED STIRRUPS.

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



				REV. 8-01-12: REVISED CATCH BASIN FOR
X	IMUM DEP	TH NOTE		LRFD DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING,
415	STRUCTURE	IS 28.00'.		GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.
				REV. 3-11-14: ELIMINATED STIRRUPS.
IN	IDIMENSI	ONS	FOR DESIGN USE ONLY	
- 5	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)	
	25	63 <sup>1</sup> ⁄2	4.58	
	32	70 <sup>1</sup> ⁄2	5.13	
	39	771/2	5.67	
	46	841⁄2	6.21	
	53	91 <sup>1</sup> ⁄2	6.75	
	60	98 <sup>1</sup> ⁄2	7.29	1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	67	1051/2	7.83	(2) ALL FLEXIBLE PIPE MATERIALS REQUIRE
	74	1121/2	8.38	GASKET. SEE STANDARD DRAWING D-PB-2.
	81	119½	8.92	3 CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO
	88	1261⁄2	9.46	OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING
	95	1331/2	10.00	STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(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 O 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

(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:

(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  $1\frac{1}{2}$ 

(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

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

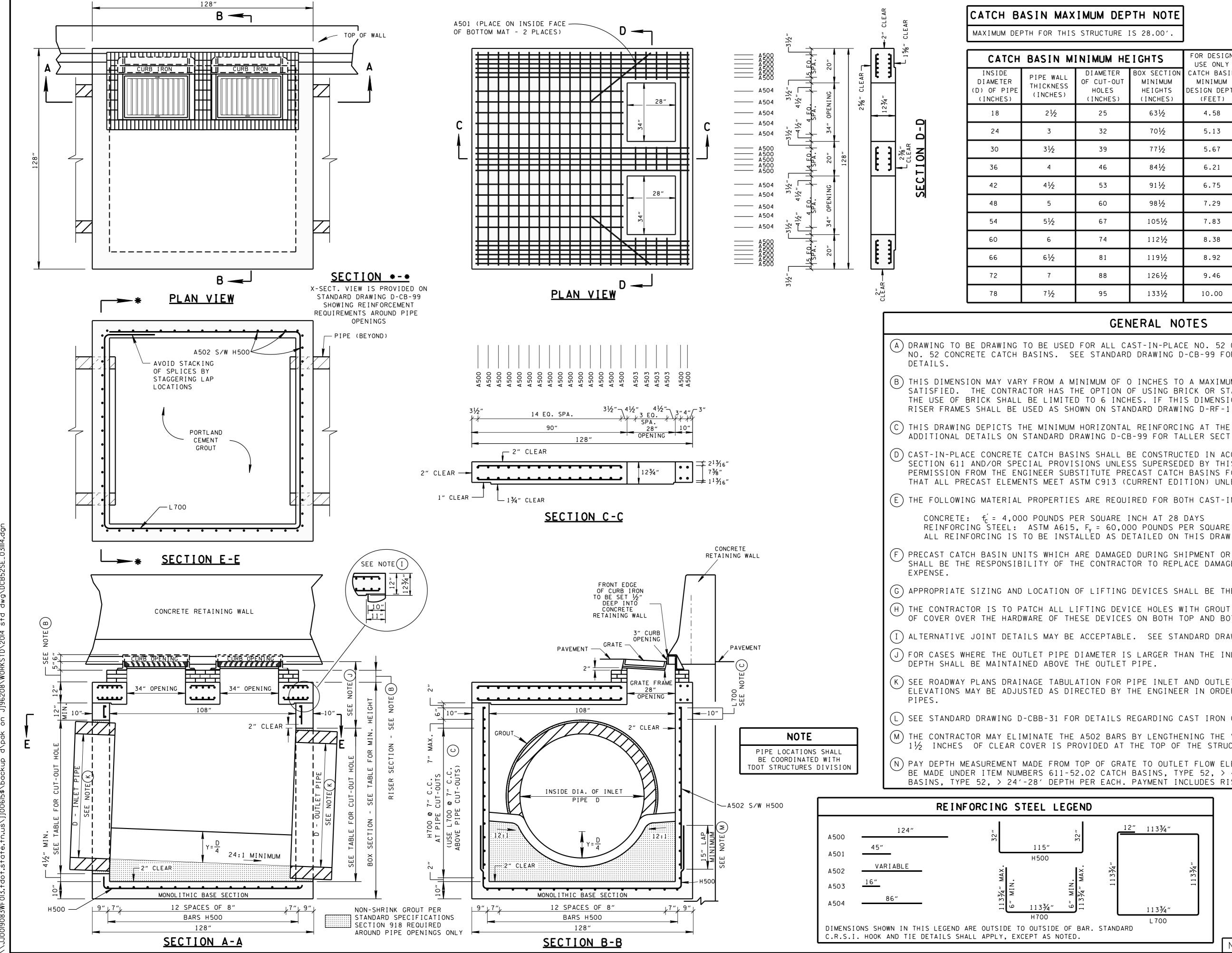
(K) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.

(L) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 29 INCH DEPTH

(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.

ING STEEL LEGEND		MINOR REVISION FHWA
"25" 25"	113¾″	APPROVAL NOT REQUIRED.
115" H500 	1334"	STATE OF TENNESSEE Department of transportatio
.XVW	113¾" L700	STANDARD 9' X 9' SQUARE CONCRETE NO. 51
PPLY, EXCEPT AS NOTED.		_ CATCH BASIN
	NOT TO SCA	LE 5-5-05 D-CB-51SE



					REV. 8-01-12: REVISED CATCH BASIN FOR
(	IMUM DEP	TH NOTE			COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WIT
5	STRUCTURE 1	IS 28.00'.			INTERIMS. REVISED REINFORCING, GENERA NOTES, LEGEND AND ADDITIONAL MISC.
]	NIMUM HE	IGHTS	FOR DESIGN USE ONLY		DRAFTING EDITS. REV. 3-11-14: ELIMINATED STIRRUPS.
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	CATCH BASIN MINIMUM DESIGN DEPTH (FEET)		KEV. J II IA. ELIMINATED STIRROFS.
	25	631⁄2	4.58		
	32	70 <sup>1</sup> ⁄2	5.13		
	39	771/2	5.67		
	46	841⁄2	6.21		
	53	91½	6.75		
	60	98½	7.29		
	67	1051/2	7.83		T-OUT HOLES BASED ON REINFORCED NCRETE PIPE WITH WALL TYPE "B".
	74	1121/2	8.38	(2) AL	L FLEXIBLE PIPE MATERIALS REQUIRE
	81	1191⁄2	8.92		SKET. SEE STANDARD DRAWING D-PB-2.
	88	126½	9.46	└ то	T-OUT HOLES FOR PRECAST STRUCTURES BE FORMED IN ORDER TO OBTAIN A NOOTH EDGED HOLE. SCORED OR ETCHED
	95	1331/2	10.00	но	CUT WILL NOT BE PERMITTED.

(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

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 29 INCHES I 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

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:

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

(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

(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

(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 11/2 INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.

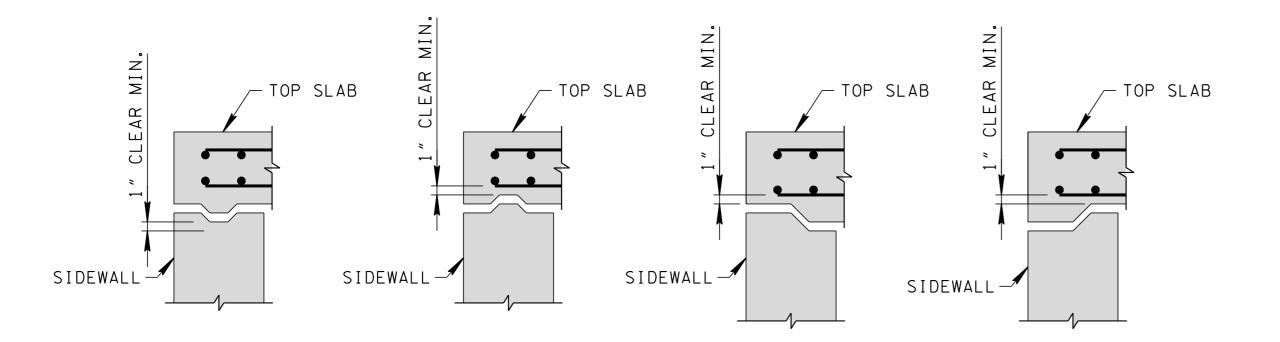
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF GRATE TO OUTLET FLOW ELEVATION. PAYMENT FOR CATCH BASIN WILL BE MADE UNDER ITEM NUMBERS 611-52.02 CATCH BASINS, TYPE 52, > 4'-8' DEPTH THROUGH 611-52.07, CATCH BASINS, TYPE 52, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTIONS AND GRATES.

END		MINOR	REVISION FHWA
12" 1133/4"			AL NOT REQUIRED.
ν Μ		STATE	of tennessee
		DEPARTMENT	OF TRANSPORTATION
MAX. 1334.		ST	ANDARD
33/4 "		_	9' SQUARE
1133/4"		CONCRI	ETE NO. 52
L 700 BAR. STANDARD		CAT	CH BASIN
D.	NOT TO SCALE	5-5-05	D-CB-52SE
	NOT TO SCALE		

	SUGGESTE	) SIZE OF WE	LDED 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 3×8-W3×W1.8	WWF 3×12-W3×W2.1
60	6	0.15	WWF 2×8-W2.5×W2.5	WWF 3×12-W3×W2.1 (2 LAYERS)
72	7	0.18	WWF 3×6-W4.5×W2.1	WWF 3×12-W3×W2.1 (2 LAYERS)
84	8	0.21	WWF 2×6-W3.5×W2.1	WWF 3×12-W3×W2.1 (2 LAYERS)
96	9	0.24	WWF 2×8-W4×W2.1	WWF 3×12-W3×W2.1 (2 LAYERS)
108	10	0.30	WWF 2×6-W5×W2.5	
120	11	0.36	WWF 2×8-W6×W3	

WWF <u>A×B</u>-W<u>C</u>×W<u>D</u>

 $\underline{A}$  = SPACING OF HORIZONTAL WIRES, IN.  $\overline{\underline{B}}$  = SPACING OF VERTICAL WIRES, IN.  $\overline{\underline{C}}$  = HORIZONTAL WIRE SIZE  $\overline{D}$  = VERTICAL WIRE SIZE

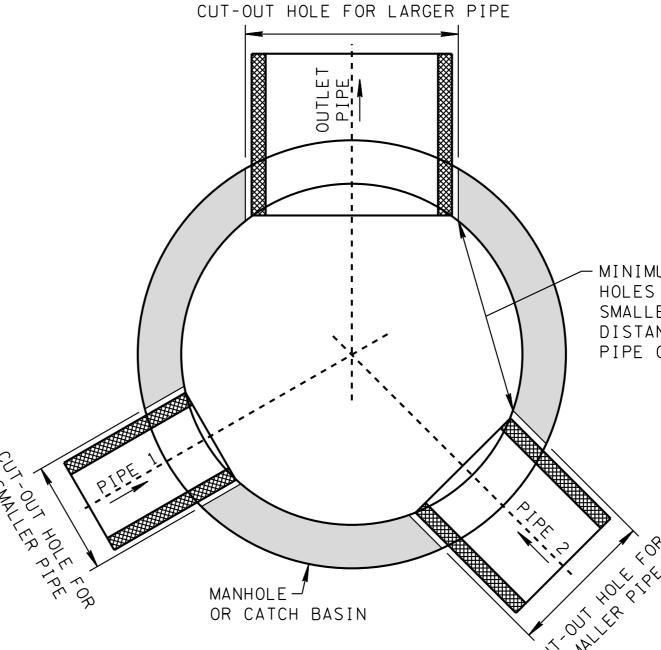


NOTE: WHEN ALTERNATE JOINT DETAIL IS PROVIDED, MINIMUM CLEAR DIMENSIONS AND INTERIOR SLAB THICKNESS SHOWN ON STANDARDS SHALL BE MAINTAINED.

ALTERNATE JOINT DETAILS

014 13:19 083WF013.

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. (C) SEE D-CB-99RA FOR BILL OF STEEL FOR LID REINFORCEMENT.



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.

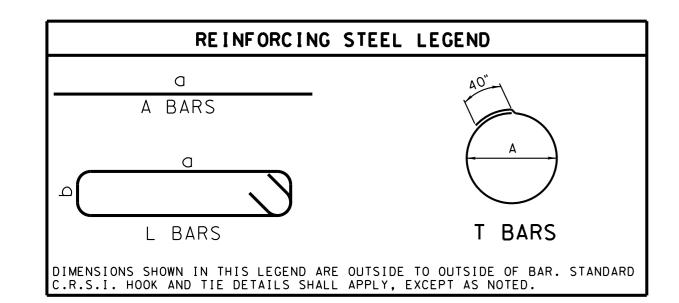
## MULTIPLE PIPE CONNECTIONS TO A ROUND STRUCTURE

🗖 REV. 9-24-12: ADDED GENERAL NOTE 💭 REV. 3-11-14: ELIMINATED STIRRUPS ON DETAILS VIEW.

- MINIMUM INSIDE DISTANCE BETWEEN HOLES = ½ PIPE CUT-OUT HOLE OF SMALLER PIPE. DESIRABLE INSIDE DISTANCE BETWEEN HOLES = 1/2 PIPE CUT-OUT HOLE OF LARGER PIPE

	STATE Department	OF TENNESSEE OF TRANSPORTATION
	DET	ELLANEOUS AILS FOR ROUND RUCTURES
NOT TO SCALE	8-01-12	D-CB-99R

											REINFORCI	NG BAR SCH	IEDULE FOR I	ROUND CB 1	OP SLABS (in	ches)									
B DIA	4 <u>Τ</u> !	500 T	r501 A	۹500	A501	A502	A503	A504 A	4505	A506	A507	A508	A509	A510	A511	A512	A513	A514	A515	A516	A517	A518	LS301	LS302	AB
		а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	а	a b	a b	
A 4	48	51 5/8		36 1/2	44 3/8	47 5/16	31 5/16	37	7 1/8	7 7/8	11 3/8	13 8/16	14 5/8	15											
A 4	48	51 5/8		31 3/4	37 11/16	42 3/16	31 5/16	37	5 13/16	7 3/16	7 7/8	7 3/8	9 4/8	10 5/8	11										
В 6	60		65 5/8	40 3/8	49 3/8	55 7/8	58 7/8	37 11/16	45 3/8	51 3/8	55 3/16	13 5/16	14 3/8	14 7/8	15 3/16	16 13/16	17 11/16	18							
B	72		79 5/8	51 1/8	63 11/16	72 1/8	74 5/8	48 5/8	60 3/8	68 11/16	71 5/8	20 5/8	21 1/2	21 7/8	22 11/16	24	24 3/4	25							
C 8	84		93 5/8	52 11/16	65 5/8	75 1/8	82 5/16	87 11/16	89 11/16	50 7/8	63	72 3/16	79 5/16	84 13/16	87 3/16	27 7/8	28 11/16	29	30 1/8	31 3/16	31 13/16				
C g	96		107 5/8	61 1/8	77	88 3/8	96 11/16	102 13/16	104	59 5/16	74 5/8	85 11/16	94	100 5/16	102	35	35 13/16	36	37 3/8	38 2/8	38 13/16				
C 10	08		121 5/8	69 1/2	88 3/8	101 5/8	111	117 5/8	119	67 11/16	86	99	108 1/2	115 3/8	117	42 1/8	42 13/16	43	44 5/8	45 3/8	45 13/16				
C 12	20		135 5/8	77 7/8	99 11/16	114 11/16	125 3/16	132 3/16	134	76 3/16	97 6/16	112 3/16	122 7/8	130 5/16	132	49 3/16	49 13/16	50	51 11/16	52 3/8	52 7/8				
<u>م</u>	48 S <i>i</i>	AME AS 12R	RA																						
в (	60 S <i>i</i>	AME AS 12R	RB																						
3 7	72 S/	AME AS 12R	RB																						
C 8	84 S/	AME AS 12R	RC																						
2 9	96 S <i>i</i>	AME AS 12R	RC																						
2 10	08 S/	AME AS 12R	RC																						
2 12	20 S/	AME AS 12R	RC																						Τ
3	96		107 5/8	109 1/2	47 5/8	57	64 11/16	56 3/8	70 3/8	81	89 3/16	95 11/16	100 11/16	102 13/16	104	14	23 2/16	27 11/16	31 3/16	34	36 1/8	37 5/8			T
<u> </u>	48 S/	AME AS 12R	RA																						T
. 6	60 S/	AME AS 12R	RB																						T
	72 S/	AME AS 12R	RB																						T
5 8	84 S/	AME AS 12R	RC																						T
6	96 S/	AME AS 12R	RC																						T
<u> </u>	48 S/	AME AS 12R	RA																						T
. (	60 S/	AME AS 12R	RB																						
-	72 S/	AME AS 12R	RB																						1
		AME AS 12R																							1
		AME AS 12R																							
	84		93 5/8	95 3/8	47	57 5/16	54 5/16	67 7/8	77 5/8	84 13/16	87 3/16	14	16 1/8	20 5/16	23 3/8	25 11/16	27 1/2								1
3 6	60		65 5/8	36 3/16				56 1/2	13 5/8		15 11/16		, •			·-, -•									1
	72		79 5/8	45 5/8					21		22 13/16														1
	84		93 5/8	55	68 7/8						29 13/16														1
	96		107 5/8	64 5/16	-	-					36 13/16														1
	84		93 5/8	52 13/16				1	21 3/16														52 52	60 6	0
	96		107 5/8	63 13/16					28 5/16														52 52		0
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3 9		AIVIL AJ JOR	107 5/8	109 1/2	48 7/8	59	67 3/16	56 11/16	70 13/16	01.2/0	89 11/16	96 1/8	101 1/4	L 100	22 7/8	27 11/16	31 3/16	22.42/46	35 3/5	14	36 11/16	37	96 48	90 4	+



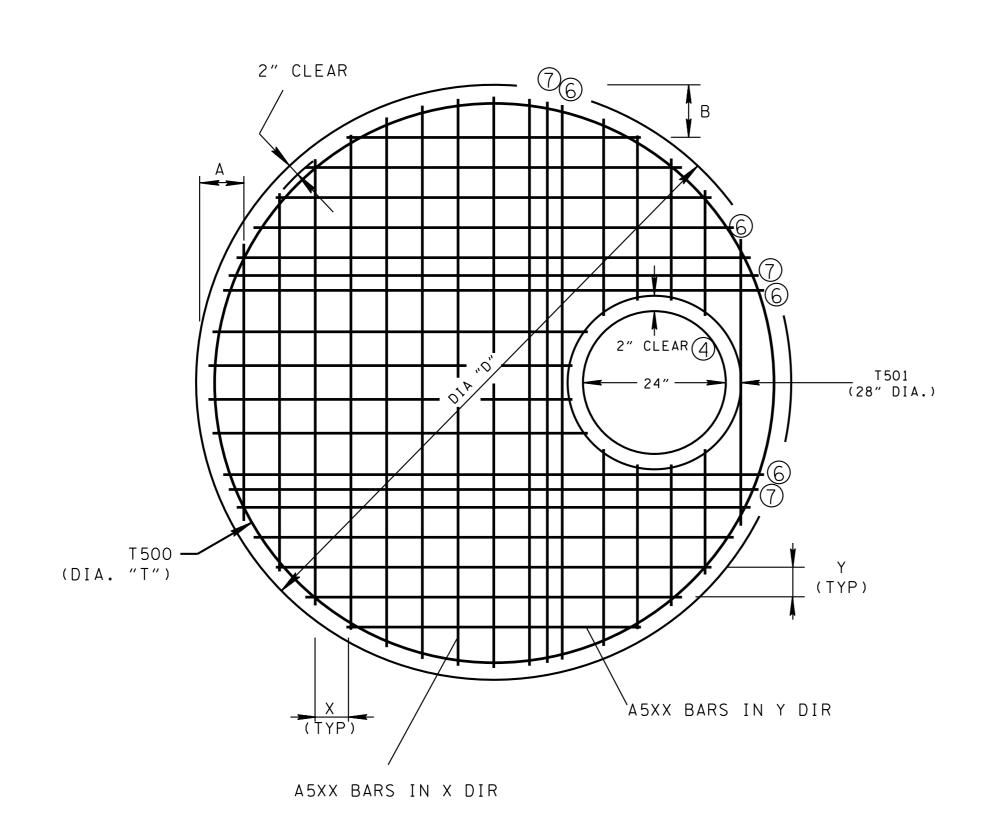
	GENERAL NOTES
A	THE PURPOSE OF THIS DRAWING IS TO PROVIDE A BAR REINFORCEMENT SCHEDULE FOR
B	DIMENSION DETERMINED BY GEOMETRY. TOLERANCE FOR BAR LOCATIONS AND LENGTH
<b>C</b>	REINFORCING STEEL: ASTM A615, Fy = 60,000 PSI.

REV 3-19-14: UPDATED TABLE TO MATCH OTHER REVISIONS ON OTHER DRAWINGS.
REV 8-5-13: CORRECTED TYPO A500 BAR FOR D-CB-12RA 48"

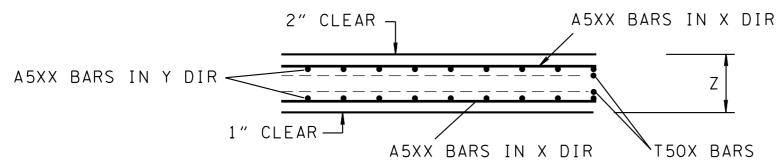
ROUND CATCH BASIN LIDS

IS +/- 0.5"

MINOR APPROV	RE\ /AL	/ISION FHWA NOT REQUIRED.
		TENNESSEE TRANSPORTATION
FOR	2	F STEEL ROUND SIN LIDS
9-21-12		)-CB-99RA



# TYPICAL REINFORCEMENT PLAN

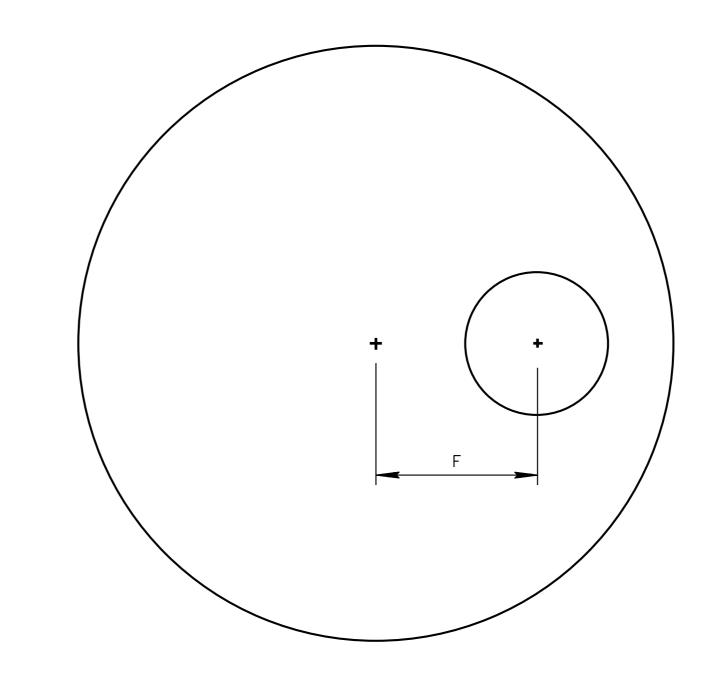


# TYPICAL SECTION

		MA	NHOLE D	IMENSIO	NS TABL	E		
MANHOLE SIZE	A ( I N )	B (IN)	D (IN)	F (IN)	X (IN)	Y (IN)	Z (IN)	T (IN)
48″	6.5	5	58	9	5	6	8	515⁄8
60"	5.75	6	72	15	5.5	6	8	655/8
72"	7	8	86	21	6	6	9	795⁄8
84″	8	8	100	27	6	6	9	935/8
96″	9	9.75	114	33	6	6	10	1075⁄8
108″	7	11.5	128	39	6	6	10	1215/8
120″	8	10.5	142	45	6	6	10	1355/8

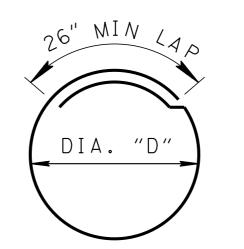


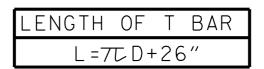




MANHOLE CUTOUT LOCATION

T BAR DETAILS





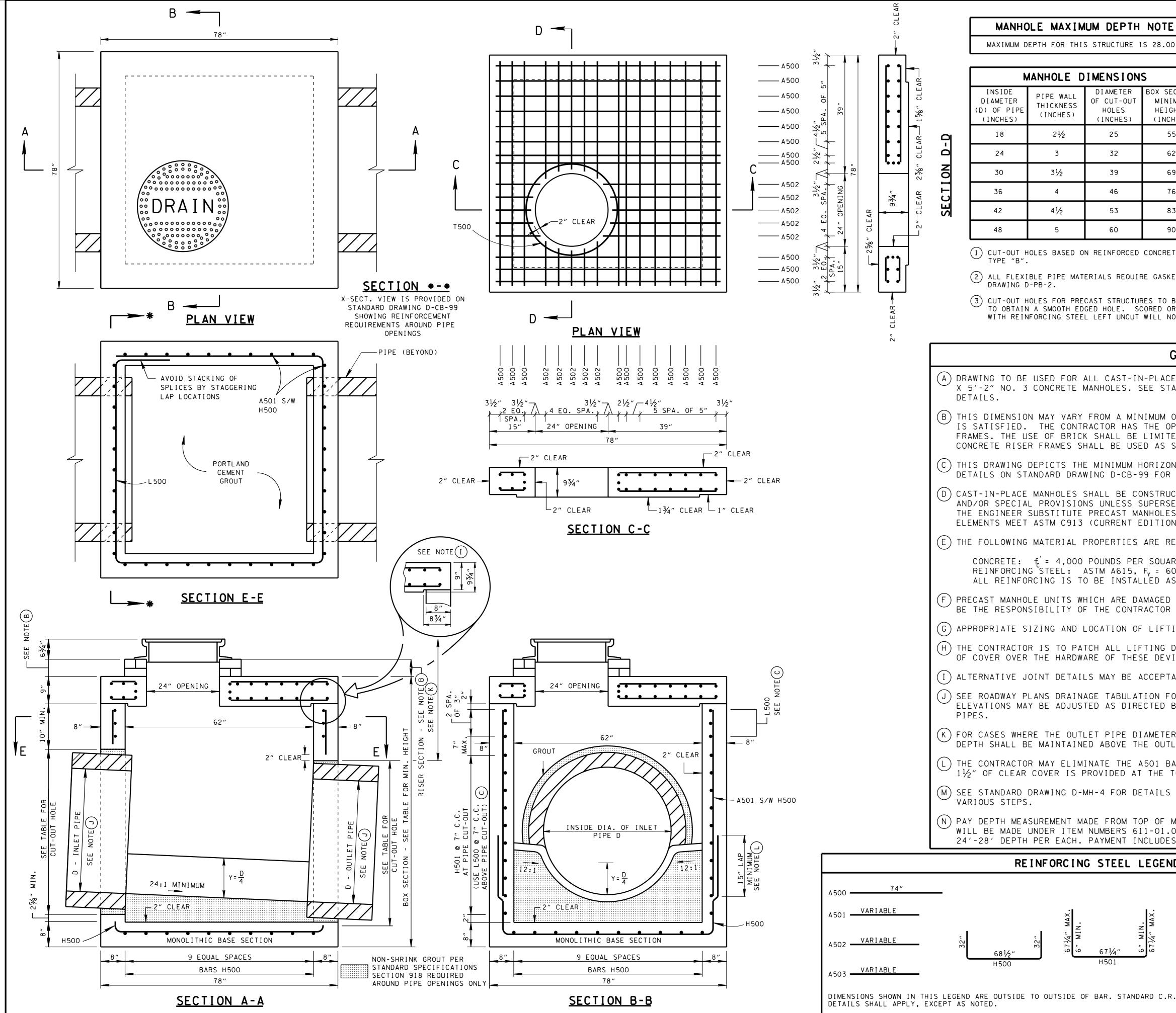
					GEN	NERAL	<u> </u>	ΙΟΤΕ	S
1 THE FOL	LOWING MA	TERIAL	PROPER	TIES ARE	REQUI	IRED			
REIN	CRETE: f <sub>c</sub> NFORCING S REINFORCI	STEEL:	ASTM A	615, F <sub>Y</sub> =	= 60,00	DO POU	NDS	PER	SQUARE
2 SEE D-M	MH-2 FOR C	THER NO	TES.						
	NATION OF MENSIONS S					BARS	IS	THE R	ESPONS
	TO END SU NHOLE CUTO		2″ CLI	EAR DIST	ANCE 1	IS MAI	NTA	INED	AROUND
5 A BARS	SHORTER T	HAN 9.5	″ MAY (	BE OMITI	TED.				
	RST A BAR THAN 2″ T								
	E BAR HALF ED ON THE								
8 SEE D-0	CB-99 FOR	JOINT D	ETAIL (	BETWEEN	LID AN	ND STR	UCTI	JRE.	

- 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.
- REV. 4-21-14: VOIDED D-MH-3A AND D-MH-3B REVISED REINFORCING DETAILS.



E INCH WING.
SIBILITY OF THE MANUFACTURER BASED ON
D THE PERIMETER OF THE LID AND AROUND
2" CLEAR IF IT WOULD OTHERWISE BE E FOLLOWED.
NHOLE CUTOUT, THE EXTRA BAR IS NOT NG).

MINOR REVISION FHWA APPROVAL NOT REQUIRED.			
STATE	of	TENNESSEE	
DEPARTMENT	OF	TRANSPORTATION	
TYPICAL DESIGN OF LIDS FOR NO. 3 MANHOLE			
5-1-97		D-MH-3	



DIMENSIONS SHOWN IN THIS LEGEND ARE OUTSIDE TO OUTSIDE OF BAR. STAI

JM DEPTH					
STRUCTURE I					
MENSION	FOR DESIGN USE ONLY				
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	MANHOLE MINIMUM DESIGN DEPTH (FEET)			
25	55	4.19			
32	62	4.73			
39	69	5.27			
46	76	5.81			
53	83	6.35			
60	90	6.90			

21/2

31/2

4½

1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL

2 ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD

(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

- 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 () ADDED MAXIMUM DEPTH NOTE.
- REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE B
- **D** 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.

□ REV. 4-1-14: ELIMINATED STIRRUPS.

(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 &

(B) THIS DIMENSION MAY VARY FROM A MINIMUM OF O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 25 $\frac{3}{4}$  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 = 4,000 POUNDS PER SQUARE INCH AT 28 DAYS REINFORCING STEEL: ASTM A615, F, = 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

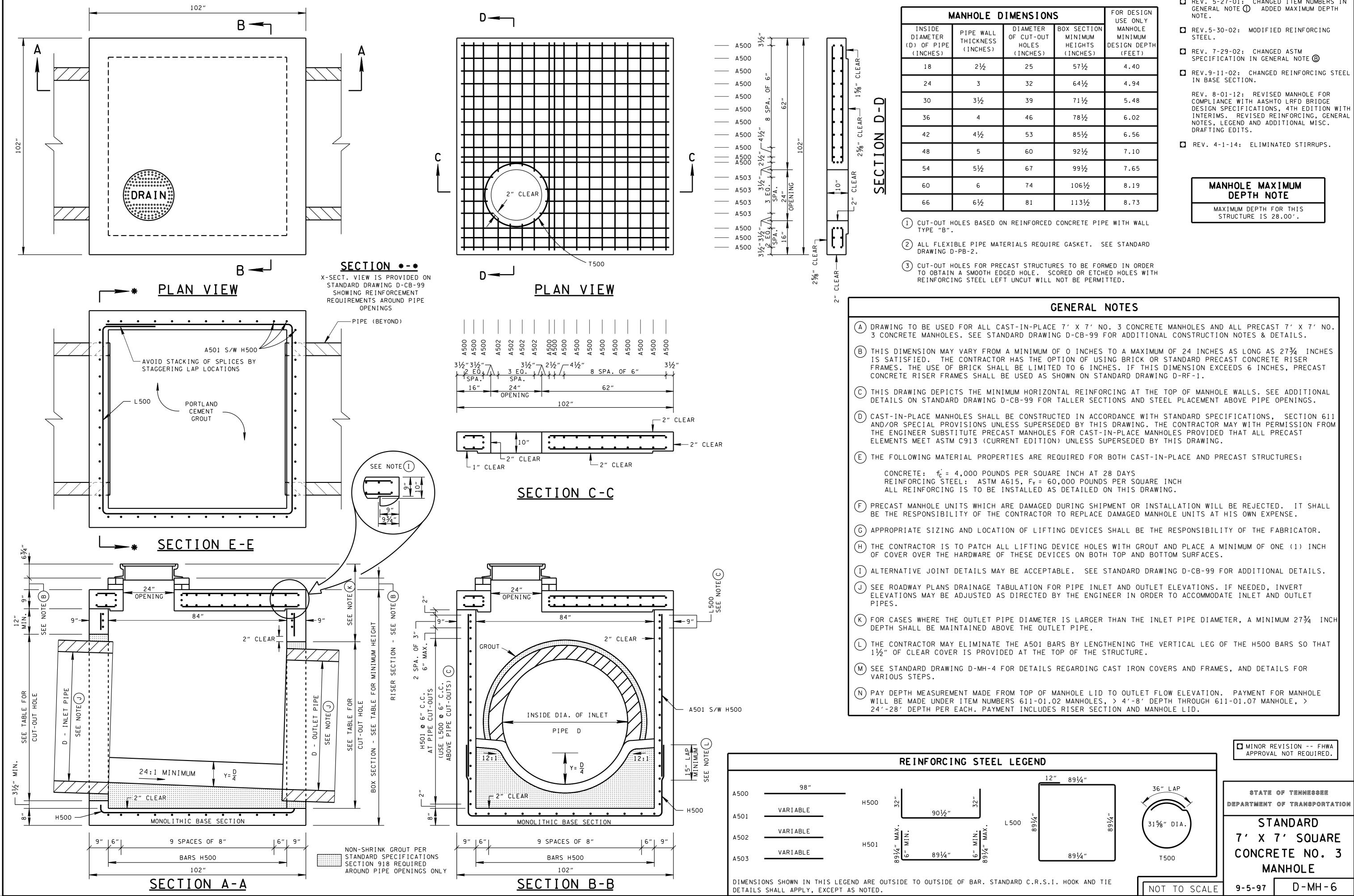
(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 253/4 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 11/3" 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

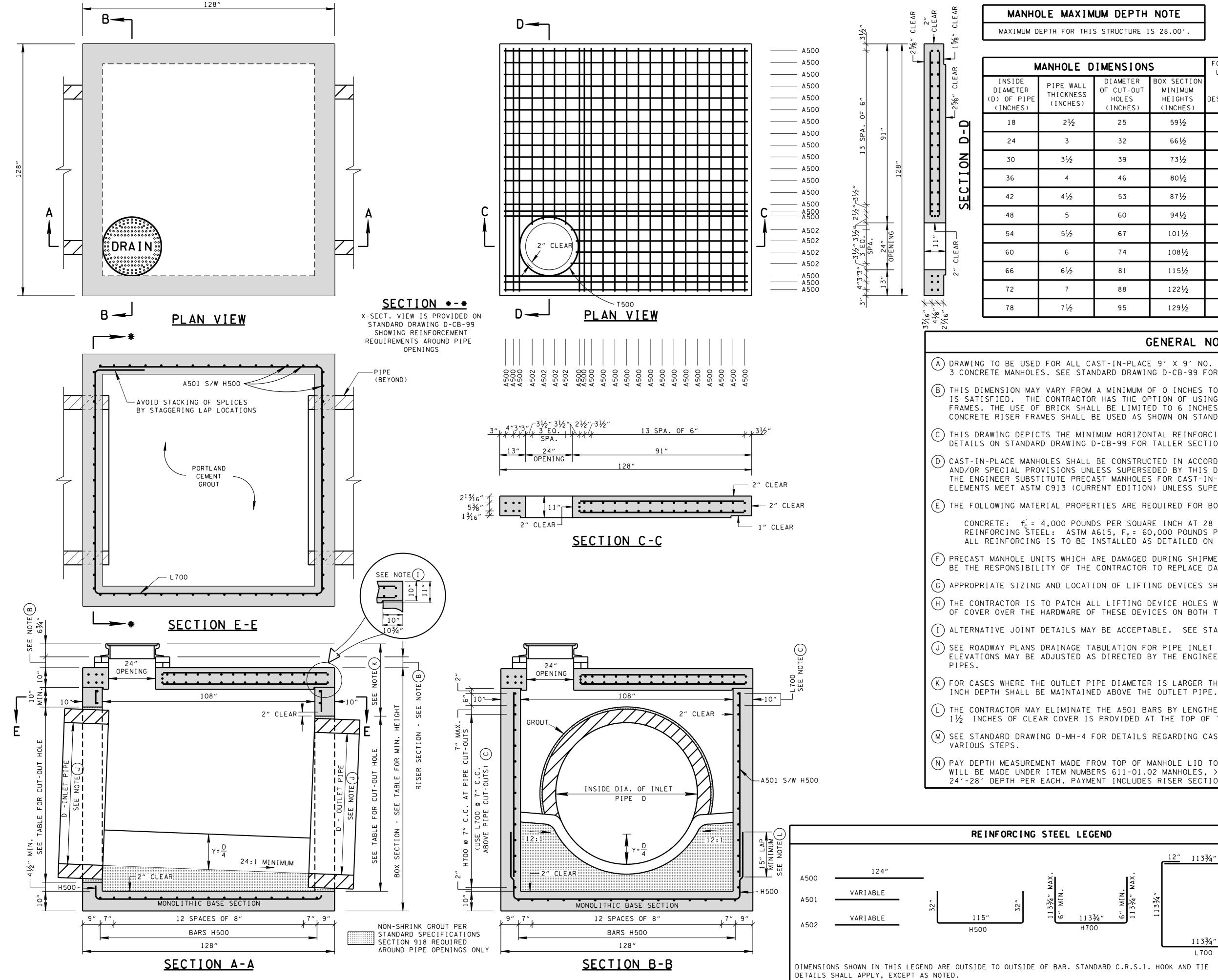
(N) PAY DEPTH MEASUREMENT MADE FROM TOP OF MANHOLE LID TO OUTLET FLOW ELEVATION. PAYMENT FOR MANHOLE WILL BE MADE UNDER ITEM NUMBERS 611-01.02 MANHOLES, > 4'-8' DEPTH THROUGH 611-01.07 MANHOLE, > 24'-28' DEPTH PER EACH. PAYMENT INCLUDES RISER SECTION AND LID.

LEGEND		MINOR REVISION FHWA APPROVAL NOT REQUIRED.
	36" LAP	STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION
671/4" MAN 671/4" MAN 671/4" 671/4"	315% DIA. T500	STANDARD 5'2" X 5'2" SQUARE CONCRETE NO.3 MANHOLE
NDARD C.R.S.I. HOOK AND TIE	NOT TO SCALE	10-26-98 D-MH-5



IMENSION	FOR DESIGN USE ONLY		
DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	MANHOLE MINIMUM DESIGN DEPTH (FEET)	
25	571/2	4.40	
32	64 <sup>1</sup> ⁄2	4.94	
39	711/2	5.48	
46	78 <sup>1</sup> /2	6.02	
53	85½	6.56	
60	921⁄2	7.10	
67	991⁄2	7.65	
74	1061⁄2	8.19	
81	113½	8.73	

- REV. 5-27-01: CHANGED ITEM NUMBERS IN GENERAL NOTE () ADDED MAXIMUM DEPTH



N	UM DEPTH	NOTE		REV. 5-27-01: CHANGED ITEM NUMBERS IN GENERAL NOTE () ADDED MAXIMUM DEPTH NOTE.
ΙI	S STRUCTURE I	S 28.00′.		REV. 5-30-02: MODIFIED REINFORCING STEEL.
DIMENSIONS		FOR DESIGN USE ONLY	REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE B	
	DIAMETER OF CUT-OUT HOLES (INCHES)	BOX SECTION MINIMUM HEIGHTS (INCHES)	MANHOLE MINIMUM DESIGN DEPTH (FEET)	REV. 9-11-02: CHANGED REINFORCING STEEL IN BASE SECTION. REV. 8-01-12: REVISED MANHOLE FOR
	25	59½	4.40	COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION
	32	66 <sup>1</sup> ⁄2	4.94	WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING
	39	731/2	5.48	EDITS.
	46	80 <sup>1</sup> ⁄2	6.02	REV. 4-1-14: ELIMINATED STIRRUPS.
	53	871⁄2	6.56	
	60	941⁄2	7.10	
	67	1011/2	7.65	1 CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
	74	1081⁄2	8.19	2 ALL FLEXIBLE PIPE MATERIALS REQUIRE
	81	1151/2	8.73	GASKET. SEE STANDARD DRAWING D-PB-2.
	88	1221/2	9.27	TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED
	95	1291⁄2	9.81	HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

(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 O INCHES TO A MAXIMUM OF 24 INCHES AS LONG AS 26 $\frac{3}{4}$  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 61 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

(K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 263/4

(L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 11/ 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

(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.

GEND			REVISION FHWA
		STATE	AL NOT REQUIRED. OF TENNESSEE OF TRANSPORTATION
33/4" 9 00 1133/2 L 700		9'X CONCRE	ANDARD 9' SQUARE ETE NO. 3 NHOLE
NDARD C.R.S.I. HOOK AND TIE	NOT TO SCALE	9-5-98	D - MH - 7