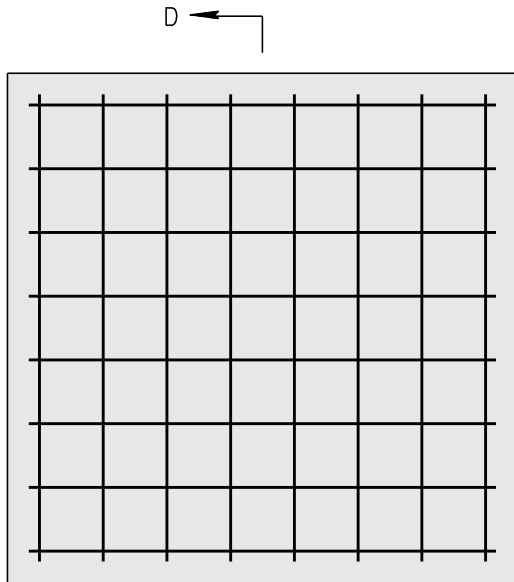
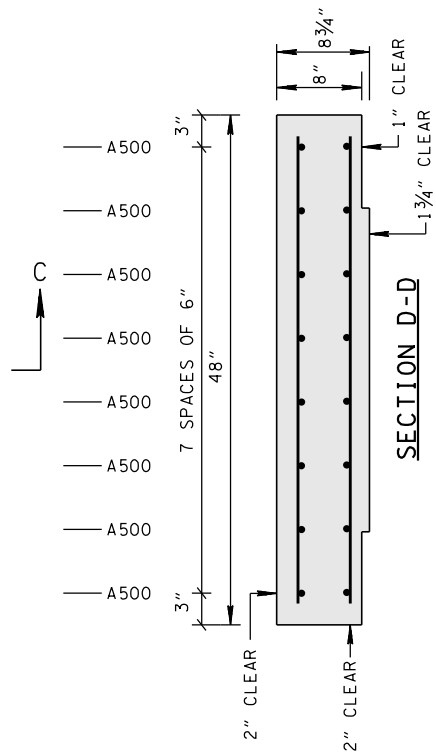


SECTION E-E

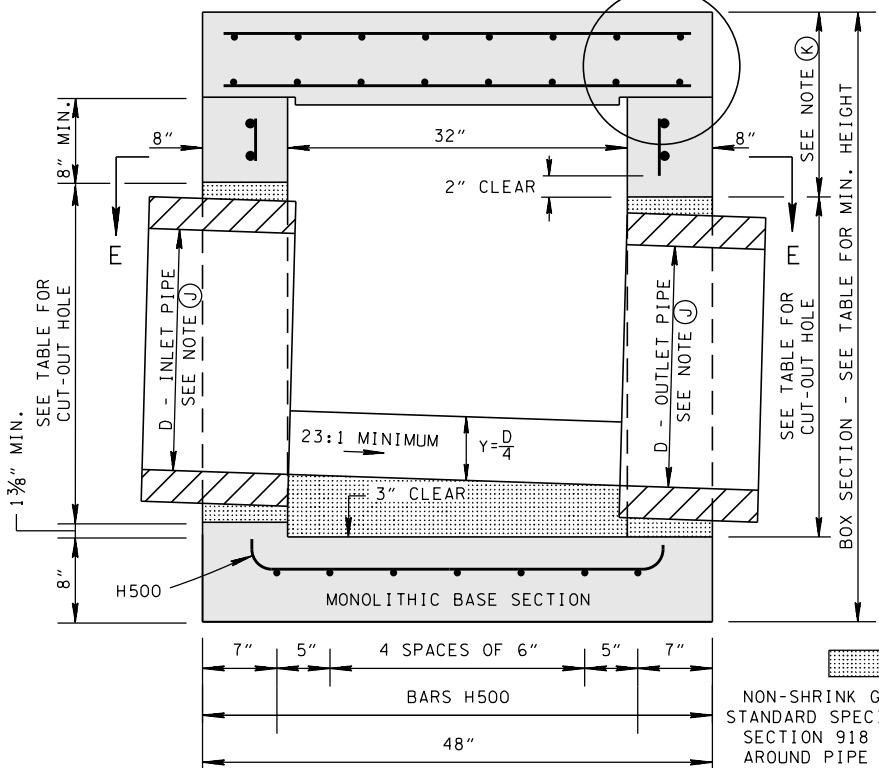
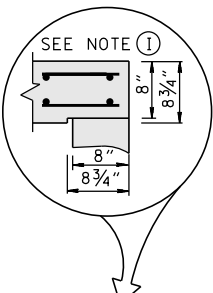
SECTION ---
X-SECT. VIEW IS PROVIDED ON
STANDARD DRAWING D-CB-99
SHOWING REINFORCEMENT
REQUIREMENTS AROUND PIPE
OPENINGS



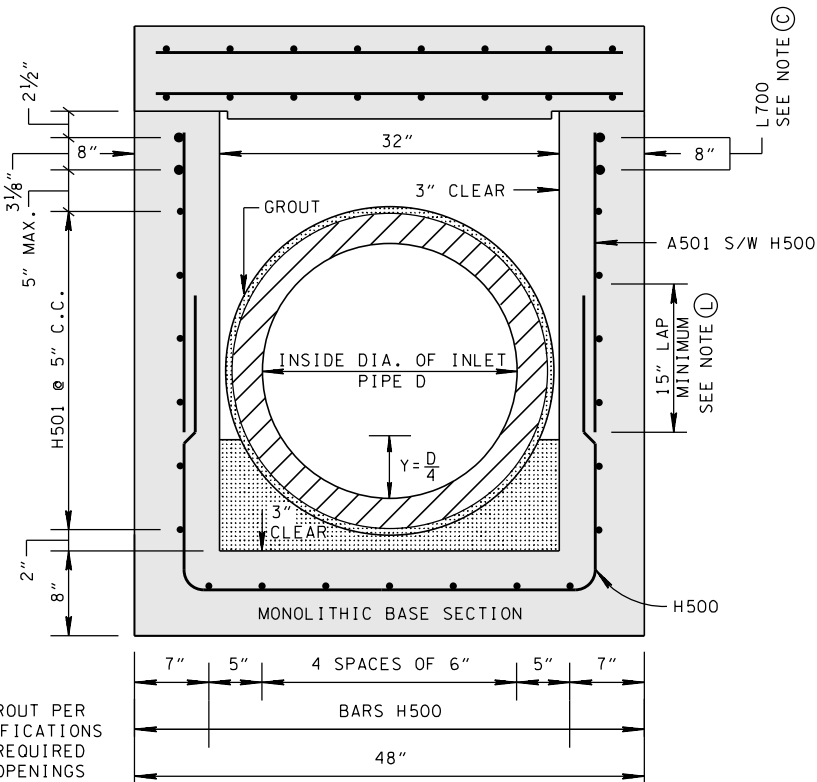
SECTION C-C



SECTION D-D



SECTION A-A



SECTION B-B

- ❑ REV. 1-19-00: DELETED NOTE ② UNDER JUNCTION BOX HEIGHT TABLE.
- ❑ REV. 6-10-01: CHANGED PAY ITEM IN GENERAL NOTE ④ TO 611-02.10.
- ❑ REV. 7-29-02: CHANGED ASTM SPECIFICATION IN GENERAL NOTE ⑤
- REV. 8-01-12: REVISED JUNCTION BOX FOR COMPLIANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH INTERIMS. REVISED REINFORCING, GENERAL NOTES, LEGEND AND ADDITIONAL MISC. DRAFTING EDITS.

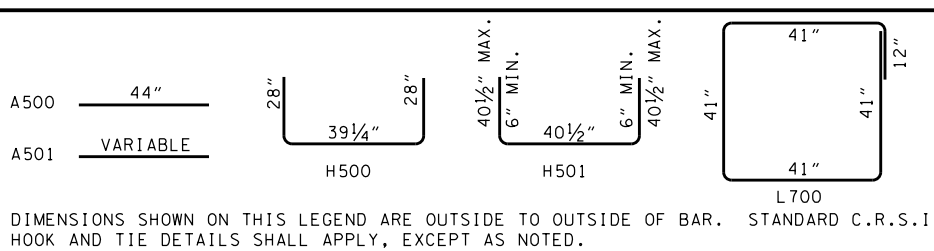
| JUNCTION BOX DIMENSIONS | | | | FOR DESIGN USE ONLY |
|--------------------------------------|------------------------------|------------------------------------|--------------------------------------|--|
| INSIDE DIAMETER (D) OF PIPE (INCHES) | PIPE WALL THICKNESS (INCHES) | DIAMETER OF CUT-OUT HOLES (INCHES) | BOX SECTION MINIMUM HEIGHTS (INCHES) | JUNCTION BOX MINIMUM DESIGN DEPTH (FEET) |
| 18 | 2½ | 25 | 51 | 3.29 |
| 24 | 3 | 32 | 58 | 3.83 |

- ① CUT-OUT HOLES BASED ON REINFORCED CONCRETE PIPE WITH WALL TYPE "B".
- ② ALL FLEXIBLE PIPE MATERIALS REQUIRE GASKET. SEE STANDARD DRAWING D-PB-2.
- ③ CUT-OUT HOLES FOR PRECAST STRUCTURES TO BE FORMED IN ORDER TO OBTAIN A SMOOTH EDGED HOLE. SCORED OR ETCHED HOLES WITH REINFORCING STEEL LEFT UNCUT WILL NOT BE PERMITTED.

GENERAL NOTES

- (A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE NO. 1 CONCRETE JUNCTION BOXES AND ALL PRECAST NO. 1 CONCRETE JUNCTION BOXES. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL CONSTRUCTION NOTES & DETAILS.
- (B) EMBANKMENT OVER THIS STRUCTURE MAY BE PLACED AT A DEPTH UP TO 50 FEET. IF STRUCTURE IS LOCATED WITHIN THE CLEAR ZONE, A MINIMUM COVER OF 2 FEET IS REQUIRED.
- (C) THIS DRAWING DEPICTS THE MINIMUM HORIZONTAL REINFORCING AT THE TOP OF JUNCTION BOX WALLS. SEE ADDITIONAL DETAILS ON STANDARD DRAWING D-CB-99 FOR TALLER SECTIONS AND STEEL PLACEMENT ABOVE PIPE OPENINGS.
- (D) CAST-IN-PLACE CONCRETE JUNCTION BOXES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS UNLESS SUPERSEDED BY THIS DRAWING. THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST JUNCTION BOXES FOR CAST-IN-PLACE JUNCTION BOXES PROVIDED THAT ALL PRECAST ELEMENTS MEET ASTM C913 (CURRENT EDITION) UNLESS SUPERSEDED BY THIS DRAWING.
- (E) THE FOLLOWING MATERIAL PROPERTIES ARE REQUIRED FOR BOTH CAST-IN-PLACE AND PRECAST STRUCTURES:
 CONCRETE: $f'_c = 4,000$ POUNDS PER SQUARE INCH AT 28 DAYS
 REINFORCING STEEL: ASTM A615, $F_y = 60,000$ POUNDS PER SQUARE INCH
 ALL REINFORCING IS TO BE INSTALLED AS DETAILED ON THIS DRAWING.
- (F) PRECAST JUNCTION BOX UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE DAMAGED JUNCTION BOX UNITS AT HIS OWN EXPENSE.
- (G) APPROPRIATE SIZING AND LOCATION OF LIFTING DEVICES SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.
- (H) THE CONTRACTOR IS TO PATCH ALL LIFTING DEVICE HOLES WITH GROUT AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.
- (I) ALTERNATIVE JOINT DETAILS MAY BE ACCEPTABLE. SEE STANDARD DRAWING D-CB-99 FOR ADDITIONAL DETAILS.
- (J) SEE ROADWAY PLANS DRAINAGE TABULATION FOR PIPE INLET AND OUTLET ELEVATIONS. IF NEEDED, INVERT ELEVATIONS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER IN ORDER TO ACCOMMODATE INLET AND OUTLET PIPES.
- (K) FOR CASES WHERE THE OUTLET PIPE DIAMETER IS LARGER THAN THE INLET PIPE DIAMETER, A MINIMUM 16 INCH DEPTH SHALL BE MAINTAINED ABOVE THE OUTLET PIPE.
- (L) THE CONTRACTOR MAY ELIMINATE THE A501 BARS BY LENGTHENING THE VERTICAL LEG OF THE H500 BARS SO THAT 1½ INCHES OF CLEAR COVER IS PROVIDED AT THE TOP OF THE STRUCTURE.
- (M) PAYMENT FOR JUNCTION BOX WILL BE MADE UNDER ITEM NUMBER 611-02.10 JUNCTION BOX, TYPE 1 PER EACH.

REINFORCING STEEL LEGEND



❑ MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

STANDARD
32" x 32" SQUARE
CONCRETE NO. 1
JUNCTION BOX