



CONSTRUCTION NOTES

- SEE STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.
- ON ALL END SECTIONS FOR WATERWAYS, USE DROPWALLS ON INLET AND OUTLET ENDS.
- FINISH ALL EXPOSED EDGES OF CONCRETE WITH 1/2" OR 3/4" CHAMFER OR RADIUS UNLESS OTHERWISE NOTED.
- USE CONCRETE MIX 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.
- USE DROPWALL CONCRETE MIX 3S52, OR 3Y82 IF PRECAST. LIMITS FOR DROPWALL EXCAVATION TO BE APPROXIMATELY THE SAME AS DROPWALL DIMENSIONS. FURNISHING AND INSTALLATION OF DROPWALL IS INCLUDED IN PRICE BID FOR END SECTIONS.
- PLACE LONGITUDINAL REINFORCEMENT WITH A MINIMUM OF 0.06 SQ. IN. PER FT. ON BOTH FACES.
- NO TONGUE OR GROOVE REQUIRED IN WALLS BETWEEN END SECTIONS.
- SEE STANDARD FIG. 5-395.115 FOR EMBANKMENT PROTECTION.
- 8 1/8" @ 15"; 10 5/8" @ 30"; 1'-2" @ 45"
 - SEE STANDARD FIG. 5-395.110(B) FOR REINFORCEMENT TABLES.
 - NUMBER OF SECTIONS VARIES WITH CULVERT RISE.
 - EXCEPT AS NOTED, USE 1" DIA. CULVERT TIES. SEE STANDARD PLATE NO. 3145 FOR DETAILS. TWO TIES ARE REQUIRED PER JOINT WHERE h IS GREATER THAN 4'.
 - 3'-6" MIN. TONGUE AND 3'-7" MIN. GROOVE FOR CULVERTS WITH 6'-0" SPANS. 5'-0" MIN. TONGUE AND 5'-1" MIN. GROOVE FOR CULVERTS WITH SPANS GREATER THAN 6'-0". CENTER TONGUE AND GROOVE ON C OF EACH APRON JOINT. TONGUE AND GROOVE JOINT ON ALL THREE SIDES OF APRON IS PERMISSIBLE.
 - FOR SKEW ANGLES OVER 7 1/2° UP TO 22 1/2°, USE A 15° SKEW END SECTION. FOR SKEW ANGLES OVER 22 1/2° UP TO 37 1/2°, USE A 30° SKEW END SECTION. FOR SKEW ANGLES OVER 37 1/2° UP TO 45°, USE A 45° SKEW END SECTION.
 - PROVIDE EXTRA STRONG CONNECTION AT LOCATION SHOWN; REQUIRED ONLY ON HIGH FILL SIDE FOR 45° SKEW END SECTIONS OVER 6'-0" HIGH. FOR MULTIPLE BARREL OPTION, ONLY INCLUDE EXTRA STRONG TIES ON THE OUTSIDE OF THE HIGH FILL SIDE. SEE STANDARD FIG. 5-395.110(B) FOR DETAILS.
 - DIMENSION "T" IS EQUAL TO Tt, Tb OR Ts.
 - REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES AND TO STANDARD FIGURE 5-395.115 FOR MATERIAL REQUIREMENTS FOR FILL BETWEEN ADJACENT BOXES.
 - AS AN ALTERNATE TO THE ONE LAYER OF WELDED WIRE REINFORCEMENT CONTRACTOR MAY PROVIDE TWO LAYERS OF REBAR OR WELDED WIRE REINFORCEMENT WITH THE STEEL AREA EQUAL TO HALF OF THE TEMPERATURE STEEL PER CODE REQUIREMENTS IN EACH FACE OF THE DROPWALL.
 - ON THE LAST SEGMENT OF THE 45° SKEWED APRONS, A TRANSVERSE JOINT IN THE BOTTOM IS PERMITTED. A SPECIAL TIE, SIMILAR TO THE SIDE TIE, MUST BE PROVIDED. THE TIE SHALL BE INSET AND THE SPACE FILLED WITH AN APPROVED GROUT.
 - FOR BOX CULVERTS WITH SPANS OF 16' THE MAXIMUM SKEW SHALL BE 30°.
 - FILL HOLE WITH GROUT. GROUT CONSISTS OF 1 PART CEMENT AND 2 PARTS SAND. USE TYPE 1A AIR ENTRAINED PORTLAND CEMENT. GROUT MIX MAXIMUM SLUMP IS 4".
 - APRON BOTTOM SLAB THICKNESS MAY BE 8" FOR CULVERTS WITH 6' SPANS ONLY. BOTTOM SLAB THICKNESS MAY BE INCREASED UP TO 2" MAX. PROVIDED COVER IS 1 1/2" MIN., 2" MAX.

LENGTH P			
SPAN (FT.)	15° SKEW	30° SKEW	45° SKEW
6	0'-11 3/4"	2'-1 1/8"	3'-8"
8	1'-3"	2'-8 3/8"	4'-8"
10	1'-6 1/4"	3'-3 1/4"	5'-8"
12	1'-9 3/8"	3'-10 1/4"	6'-8"
14	2'-0 5/8"	4'-5 1/8"	7'-8"
16	2'-3 7/8"	5'-0"	(12)

MIN. LENGTH L			
RISE (FT.)	15° SKEW	30° SKEW	45° SKEW
4	7'-1 3/4"	7'-7 3/8"	8'-7 7/8"
5	9'-2 1/2"	9'-11 1/8"	11'-5 5/8"
6	11'-3 3/8"	12'-2 7/8"	14'-3 3/4"
7	13'-4 1/4"	14'-6 5/8"	17'-1 3/4"
8	15'-5 1/8"	16'-10 1/4"	19'-11 5/8"
9	17'-5 7/8"	19'-2"	22'-9 5/8"
10	19'-6 3/4"	21'-5 3/4"	25'-7 1/2"
11	21'-7 5/8"	23'-9 3/8"	28'-5 1/2"
12	23'-8 1/2"	26'-1 1/8"	31'-3 3/8"
13	25'-9 3/8"	28'-4 7/8"	34'-1 3/8"
14	27'-10 1/8"	30'-8 1/2"	36'-11 1/4"

LENGTH Q			
SPAN (FT.)	15° SKEW	30° SKEW	45° SKEW
6	3'-5 3/4"	4'-7 3/8"	6'-2"
8	3'-9"	5'-2 3/8"	7'-2"
10	4'-0"	5'-9 1/4"	8'-2"
12	4'-3 3/8"	6'-4 1/8"	9'-2"
14	4'-6 5/8"	6'-11 1/8"	10'-2"
16	4'-9 7/8"	7'-6 1/8"	(12)

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 STATE BRIDGE ENGINEER

ELEVATION

STATE PROJ. NO - (T.H.) STA. + .

FIG. 5-395.110(A)

CERTIFIED BY _____ DATE _____

NAME: _____ LIC. NO. _____

TITLE: PRECAST CONCRETE END SECTION TYPE III - SINGLE OR DOUBLE BARREL FOR SKEWS 7 1/2° TO 45°

DES: _____ DR: _____

CHK: _____ CHK: _____

APPROVED: _____

SHEET NO. OF SHEETS

BRIDGE NO.