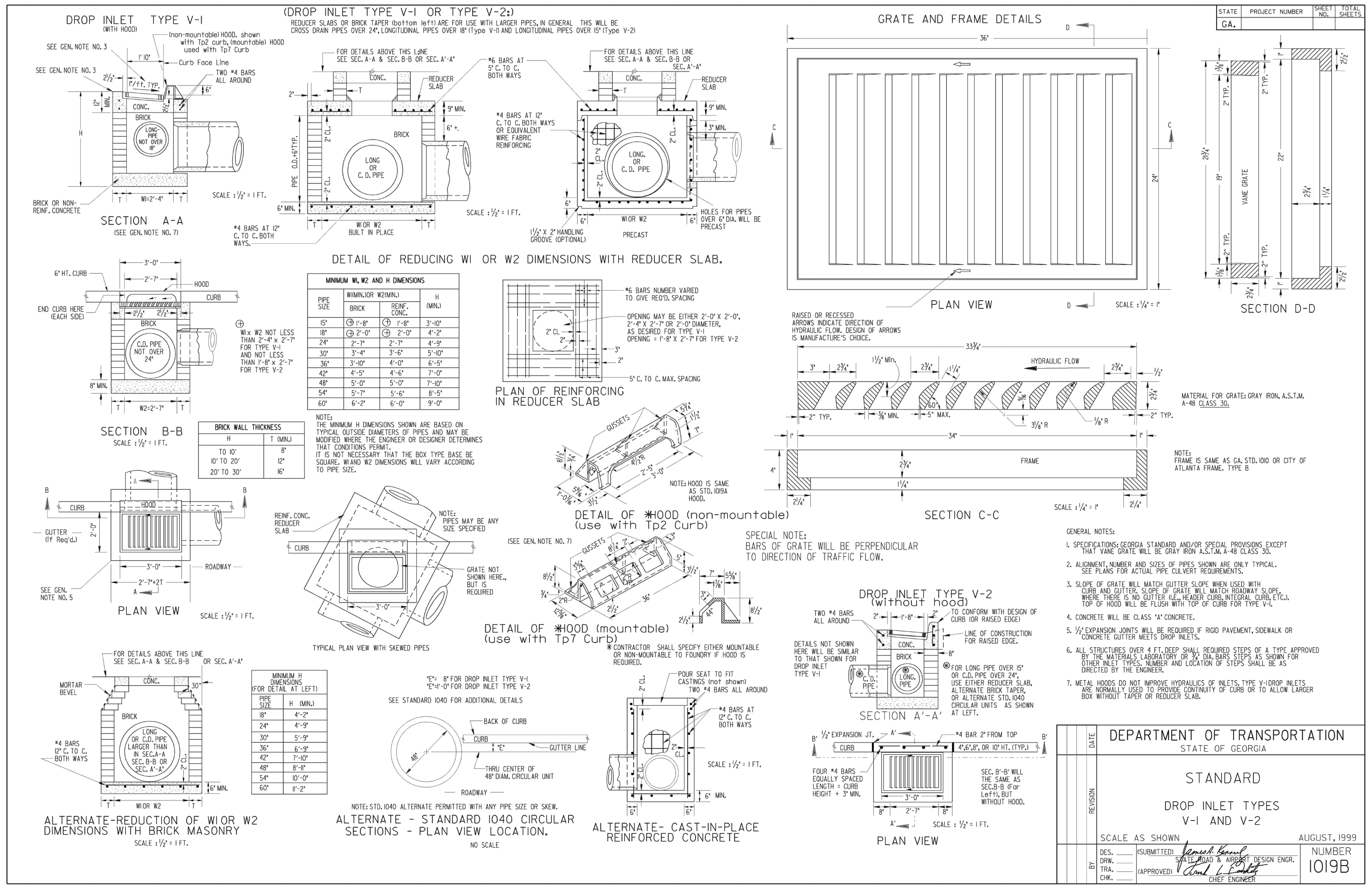
DROP INLET TYPE V-1 (WITH HOOD)



(DROP INLET TYPE V-1 OR TYPE V-2:)
REDUCER SLABS OR BRICK TAPER (bottom left) ARE FOR USE WITH LARGER PIPES. IN GENERAL THIS WILL BE CROSS DRAIN PIPES OVER 24", LONGITUDINAL PIPES OVER 18" (Type V-1) AND LONGITUDINAL PIPES OVER 15" (Type V-2)

DETAIL OF REDUCING W1 OR W2 DIMENSIONS WITH REDUCER SLAB.

MINIMUM W1, W2 AND H DIMENSIONS			
PIPE SIZE	W1(MIN.) OR W2(MIN.) BRICK	W1(MIN.) OR W2(MIN.) REINF. CONC.	H (MIN.)
15"	⊕ 1'-8"	⊕ 1'-8"	3'-10"
18"	⊕ 2'-0"	⊕ 2'-0"	4'-2"
24"	2'-7"	2'-7"	4'-9"
30"	3'-4"	3'-6"	5'-10"
36"	3'-10"	4'-0"	6'-5"
42"	4'-5"	4'-6"	7'-0"
48"	5'-0"	5'-0"	7'-10"
54"	5'-7"	5'-6"	8'-5"
60"	6'-2"	6'-0"	9'-0"

⊕ W1 x W2 NOT LESS THAN 2'-4" x 2'-7" FOR TYPE V-1 AND NOT LESS THAN 1'-8" x 2'-7" FOR TYPE V-2

NOTE:
THE MINIMUM H DIMENSIONS SHOWN ARE BASED ON TYPICAL OUTSIDE DIAMETERS OF PIPES AND MAY BE MODIFIED WHERE THE ENGINEER OR DESIGNER DETERMINES THAT CONDITIONS PERMIT.
IT IS NOT NECESSARY THAT THE BOX TYPE BASE BE SQUARE. W1 AND W2 DIMENSIONS WILL VARY ACCORDING TO PIPE SIZE.

BRICK WALL THICKNESS	
H	T (MIN.)
TO 10'	8"
10' TO 20'	12"
20' TO 30'	16"

MINIMUM H DIMENSIONS (FOR DETAIL AT LEFT)	
PIPE SIZE	H (MIN.)
18"	4'-2"
24"	4'-9"
30"	5'-9"
36"	6'-9"
42"	7'-10"
48"	8'-11"
54"	10'-0"
60"	11'-2"

ALTERNATE-REDUCTION OF W1 OR W2 DIMENSIONS WITH BRICK MASONRY

ALTERNATE - STANDARD 1040 CIRCULAR SECTIONS - PLAN VIEW LOCATION.

NOTE: STD. 1040 ALTERNATE PERMITTED WITH ANY PIPE SIZE OR SKEW.

ALTERNATE- CAST-IN-PLACE REINFORCED CONCRETE

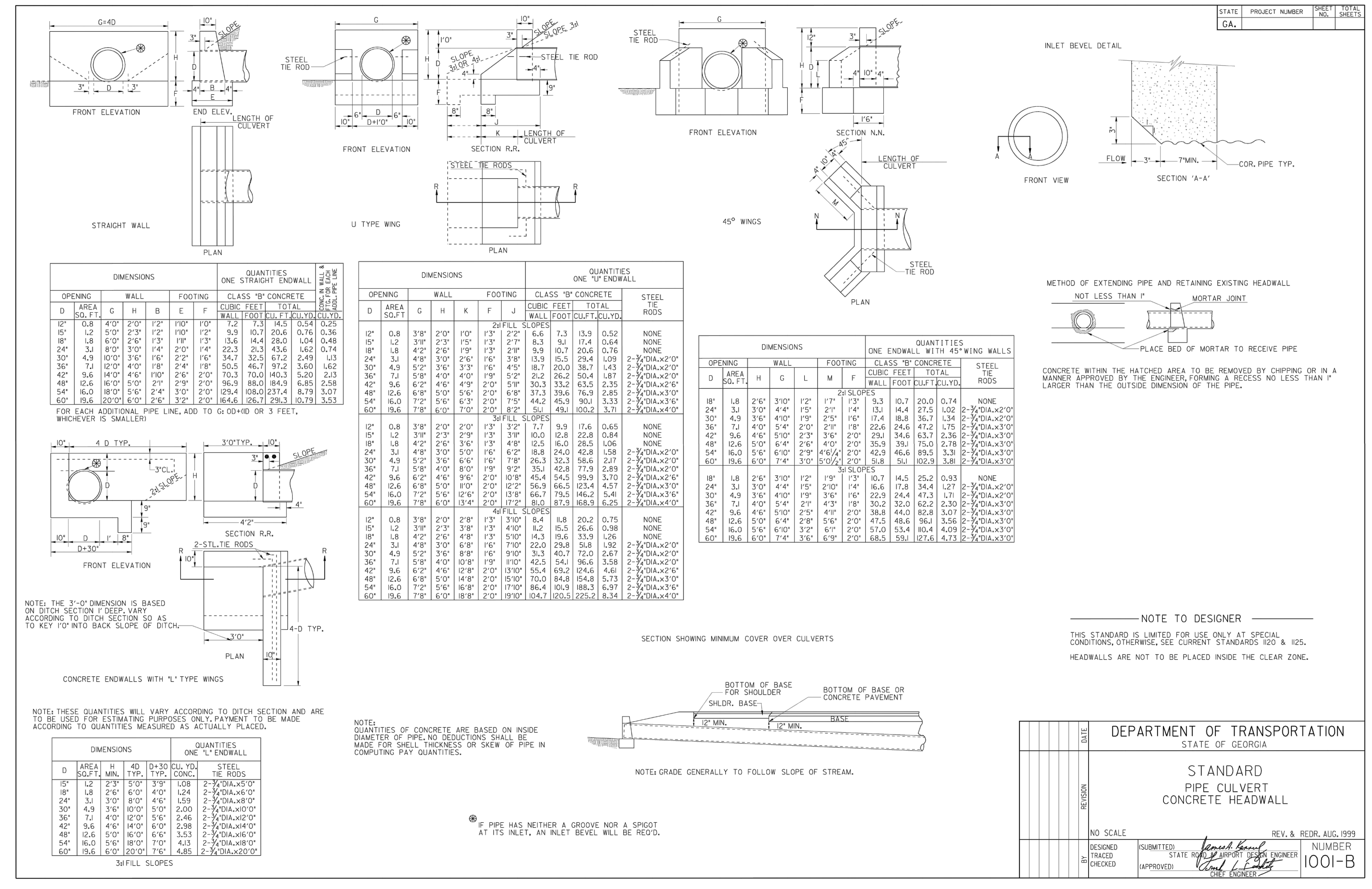
SPECIAL NOTE:
BARS OF GRATE WILL BE PERPENDICULAR TO DIRECTION OF TRAFFIC FLOW.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD AND/OR SPECIAL PROVISIONS EXCEPT THAT VANE GRATE WILL BE GRAY IRON A.S.T.M. A-48 CLASS 30.
2. ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL. SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
3. SLOPE OF GRATE WILL MATCH GUTTER SLOPE WHEN USED WITH CURB AND GUTTER. SLOPE OF GRATE WILL MATCH ROADWAY SLOPE, WHERE THERE IS NO GUTTER (I.E., HEADER CURB, INTEGRAL CURB, ETC.). TOP OF HOOD WILL BE FLUSH WITH TOP OF CURB FOR TYPE V-1.
4. CONCRETE WILL BE CLASS "A" CONCRETE.
5. ½" EXPANSION JOINTS WILL BE REQUIRED IF RIGID PAVEMENT, SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
6. ALL STRUCTURES OVER 4 FT. DEEP SHALL REQUIRED STEPS OF A TYPE APPROVED BY THE MATERIALS LABORATORY OR ¾" DIA. BARS STEPS AS SHOWN FOR OTHER INLET TYPES. NUMBER AND LOCATION OF STEPS SHALL BE AS DIRECTED BY THE ENGINEER.
7. METAL HOODS DO NOT IMPROVE HYDRAULICS OF INLETS. TYPE V-1 DROP INLETS ARE NORMALLY USED TO PROVIDE CONTINUITY OF CURB OR TO ALLOW LARGER BOX WITHOUT TAPER OR REDUCER SLAB.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
DROP INLET TYPES V-1 AND V-2
SCALE AS SHOWN — AUGUST, 1999
NUMBER 1019B

PIPE CULVERT CONCRETE HEADWALL



DIMENSIONS							QUANTITIES ONE STRAIGHT ENDWALL				
OPENING		WALL			FOOTING		CLASS "B" CONCRETE				
D	AREA SQ. FT.	G	H	B	E	F	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU. FT.	TOTAL CU. YD.	CONC. IN WALL & FTG. FOR EACH ADDL. PIPE LINE CU. YD.
12"	0.8	4'0"	2'0"	1'2"	1'10"	1'0"	7.2	7.3	14.5	0.54	0.25
15"	1.2	5'0"	2'3"	1'2"	1'10"	1'2"	9.9	10.7	20.6	0.76	0.36
18"	1.8	6'0"	2'6"	1'3"	1'11"	1'3"	13.6	14.4	28.0	1.04	0.48
24"	3.1	8'0"	3'0"	1'4"	2'0"	1'4"	22.3	21.3	43.6	1.62	0.74
30"	4.9	10'0"	3'6"	1'6"	2'2"	1'6"	34.7	32.5	67.2	2.49	1.13
36"	7.1	12'0"	4'0"	1'8"	2'4"	1'8"	50.5	46.7	97.2	3.60	1.62
42"	9.6	14'0"	4'6"	1'10"	2'6"	2'0"	70.3	70.0	140.3	5.20	2.13
48"	12.6	16'0"	5'0"	2'1"	2'9"	2'0"	96.9	88.0	184.9	6.85	2.58
54"	16.0	18'0"	5'6"	2'4"	3'0"	2'0"	129.4	108.0	237.4	8.79	3.07
60"	19.6	20'0"	6'0"	2'6"	3'2"	2'0"	164.6	126.7	291.3	10.79	3.53

FOR EACH ADDITIONAL PIPE LINE, ADD TO G: OD+(ID OR 3 FEET, WHICHEVER IS SMALLER)

DIMENSIONS							QUANTITIES ONE "U" ENDWALL				
D	AREA SQ.FT	G	H	K	F	J	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU.FT.	TOTAL CU.YD.	STEEL TIE RODS
2:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	1'0"	1'3"	2'2"	6.6	7.3	13.9	0.52	NONE
15"	1.2	3'11"	2'3"	1'5"	1'3"	2'7"	8.3	9.1	17.4	0.64	NONE
18"	1.8	4'2"	2'6"	1'9"	1'3"	2'11"	9.9	10.7	20.6	0.76	NONE
24"	3.1	4'8"	3'0"	2'6"	1'6"	3'8"	13.9	15.5	29.4	1.09	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	3'3"	1'6"	4'5"	18.7	20.0	38.7	1.43	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	4'0"	1'9"	5'2"	21.2	26.2	50.4	1.87	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	4'9"	2'0"	5'11"	30.3	33.2	63.5	2.35	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	5'6"	2'0"	6'8"	37.3	39.6	76.9	2.85	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	6'3"	2'0"	7'5"	44.2	45.9	90.1	3.33	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	7'0"	2'0"	8'2"	51.1	49.1	100.2	3.71	2-¾"DIA.x4'0"
3:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	2'0"	1'3"	3'2"	7.7	9.9	17.6	0.65	NONE
15"	1.2	3'11"	2'3"	2'9"	1'3"	3'11"	10.0	12.8	22.8	0.84	NONE
18"	1.8	4'2"	2'6"	3'6"	1'3"	4'8"	12.5	16.0	28.5	1.06	NONE
24"	3.1	4'8"	3'0"	5'0"	1'6"	6'2"	18.8	24.0	42.8	1.58	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	6'6"	1'6"	7'8"	26.3	32.3	58.6	2.17	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	8'0"	1'9"	9'2"	35.1	42.8	77.9	2.89	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	9'6"	2'0"	10'8"	45.4	54.5	99.9	3.70	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	11'0"	2'0"	12'2"	56.9	66.5	123.4	4.57	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	12'6"	2'0"	13'8"	66.7	79.5	146.2	5.41	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	13'4"	2'0"	17'2"	81.0	87.9	168.9	6.25	2-¾"DIA.x4'0"
4:1 FILL SLOPES											
12"	0.8	3'8"	2'0"	2'8"	1'3"	3'10"	8.4	11.8	20.2	0.75	NONE
15"	1.2	3'11"	2'3"	3'8"	1'3"	4'10"	11.2	15.5	26.6	0.98	NONE
18"	1.8	4'2"	2'6"	4'8"	1'3"	5'10"	14.3	19.6	33.9	1.26	NONE
24"	3.1	4'8"	3'0"	6'8"	1'6"	7'10"	22.0	29.8	51.8	1.92	2-¾"DIA.x2'0"
30"	4.9	5'2"	3'6"	8'8"	1'6"	9'10"	31.3	40.7	72.0	2.67	2-¾"DIA.x2'0"
36"	7.1	5'8"	4'0"	10'8"	1'9"	11'10"	42.5	54.1	96.6	3.58	2-¾"DIA.x2'0"
42"	9.6	6'2"	4'6"	12'8"	2'0"	13'10"	55.4	69.2	124.6	4.61	2-¾"DIA.x2'6"
48"	12.6	6'8"	5'0"	14'8"	2'0"	15'10"	70.0	84.8	154.8	5.73	2-¾"DIA.x3'0"
54"	16.0	7'2"	5'6"	16'8"	2'0"	17'10"	86.4	101.9	188.3	6.97	2-¾"DIA.x3'6"
60"	19.6	7'8"	6'0"	18'8"	2'0"	19'10"	104.7	120.5	225.2	8.34	2-¾"DIA.x4'0"

DIMENSIONS							QUANTITIES ONE ENDWALL WITH 45° WING WALLS				
D	AREA SQ. FT.	H	G	L	M	F	CUBIC FEET WALL	CUBIC FEET FOOT	TOTAL CU.FT.	TOTAL CU.YD.	STEEL TIE RODS
2:1 SLOPES											
18"	1.8	2'6"	3'10"	1'2"	1'7"	1'3"	9.3	10.7	20.0	0.74	NONE
24"	3.1	3'0"	4'4"	1'5"	2'1"	1'4"	13.1	14.4	27.5	1.02	2-¾"DIA.x2'0"
30"	4.9	3'6"	4'10"	1'9"	2'5"	1'6"	17.4	18.8	36.7	1.34	2-¾"DIA.x2'0"
36"	7.1	4'0"	5'4"	2'0"	2'11"	1'8"	22.6	24.6	47.2	1.75	2-¾"DIA.x3'0"
42"	9.6	4'6"	5'10"	2'3"	3'6"	2'0"	29.1	34.6	63.7	2.36	2-¾"DIA.x3'0"
48"	12.6	5'0"	6'4"	2'6"	4'0"	2'0"	35.9	39.1	75.0	2.78	2-¾"DIA.x3'0"
54"	16.0	5'6"	6'10"	2'9"	4'6¼"	2'0"	42.9	46.6	89.5	3.31	2-¾"DIA.x3'0"
60"	19.6	6'0"	7'4"	3'0"	5'0½"	2'0"	51.8	51.1	102.9	3.81	2-¾"DIA.x3'0"
3:1 SLOPES											
18"	1.8	2'6"	3'10"	1'2"	1'9"	1'3"	10.7	14.5	25.2	0.93	NONE
24"	3.1	3'0"	4'4"	1'5"	2'10"	1'4"	16.6	17.8	34.4	1.27	2-¾"DIA.x2'0"
30"	4.9	3'6"	4'10"	1'9"	3'6"	1'6"	22.9	24.4	47.3	1.71	2-¾"DIA.x2'0"
36"	7.1	4'0"	5'4"	2'1"	4'3"	1'8"	30.2	32.0	62.2	2.30	2-¾"DIA.x3'0"
42"	9.6	4'6"	5'10"	2'5"	4'11"	2'0"	38.8	44.0	82.8	3.07	2-¾"DIA.x3'0"
48"	12.6	5'0"	6'4"	2'8"	5'6"	2'0"	47.5	48.6	96.1	3.56	2-¾"DIA.x3'0"
54"	16.0	5'6"	6'10"	3'2"	6'1"	2'0"	57.0	53.4	110.4	4.09	2-¾"DIA.x3'0"
60"	19.6	6'0"	7'4"	3'6"	6'9"	2'0"	68.5	59.1	127.6	4.73	2-¾"DIA.x3'0"

NOTE: THE 3'-0" DIMENSION IS BASED ON DITCH SECTION 1' DEEP. VARY ACCORDING TO DITCH SECTION SO AS TO KEY 1'0" INTO BACK SLOPE OF DITCH.

CONCRETE ENDWALLS WITH "L" TYPE WINGS

NOTE: THESE QUANTITIES WILL VARY ACCORDING TO DITCH SECTION AND ARE TO BE USED FOR ESTIMATING PURPOSES ONLY. PAYMENT TO BE MADE ACCORDING TO QUANTITIES MEASURED AS ACTUALLY PLACED.

DIMENSIONS					QUANTITIES ONE "L" ENDWALL	
D	AREA SQ.FT.	H MIN.	4D TYP.	D+30 TYP.	CU. YD. CONC.	STEEL TIE RODS
15"	1.2	2'3"	5'0"	3'9"	1.08	2-¾"DIA.x5'0"
18"	1.8	2'6"	6'0"	4'0"	1.24	2-¾"DIA.x6'0"
24"	3.1	3'0"	8'0"	4'6"	1.59	2-¾"DIA.x8'0"
30"	4.9	3'6"	10'0"	5'0"	2.00	2-¾"DIA.x10'0"
36"	7.1	4'0"	12'0"	5'6"	2.46	2-¾"DIA.x12'0"
42"	9.6	4'6"	14'0"	6'0"	2.98	2-¾"DIA.x14'0"
48"	12.6	5'0"	16'0"	6'6"	3.53	2-¾"DIA.x16'0"
54"	16.0	5'6"	18'0"	7'0"	4.13	2-¾"DIA.x18'0"
60"	19.6	6'0"	20'0"	7'6"	4.85	2-¾"DIA.x20'0"

3:1 FILL SLOPES

NOTE:
QUANTITIES OF CONCRETE ARE BASED ON INSIDE DIAMETER OF PIPE. NO DEDUCTIONS SHALL BE MADE FOR SHELL THICKNESS OR SKEW OF PIPE IN COMPUTING PAY QUANTITIES.

⊛ IF PIPE HAS NEITHER A GROOVE NOR A SPIGOT AT ITS INLET, AN INLET BEVEL WILL BE REQ'D.

SECTION SHOWING MINIMUM COVER OVER CULVERTS

NOTE: GRADE GENERALLY TO FOLLOW SLOPE OF STREAM.

METHOD OF EXTENDING PIPE AND RETAINING EXISTING HEADWALL

CONCRETE WITHIN THE HATCHED AREA TO BE REMOVED BY CHIPPING OR IN A MANNER APPROVED BY THE ENGINEER, FORMING A RECESS NO LESS THAN 1" LARGER THAN THE OUTSIDE DIMENSION OF THE PIPE.

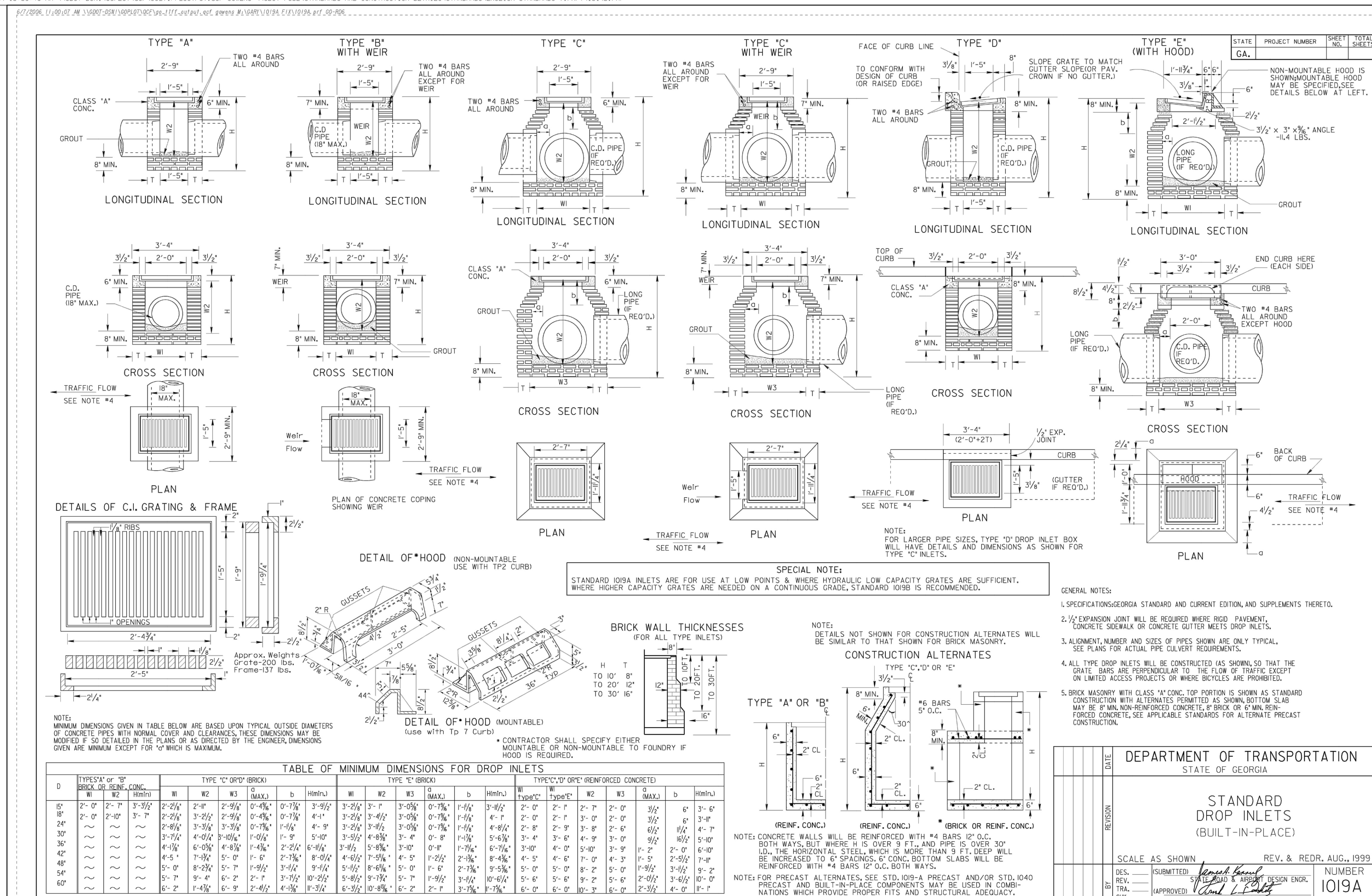
NOTE TO DESIGNER

THIS STANDARD IS LIMITED FOR USE ONLY AT SPECIAL CONDITIONS, OTHERWISE, SEE CURRENT STANDARDS 1120 & 1125.

HEADWALLS ARE NOT TO BE PLACED INSIDE THE CLEAR ZONE.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
PIPE CULVERT CONCRETE HEADWALL
NO SCALE — REV. & REDR. AUG. 1999
NUMBER 1001-B

STANDARD DROP INLETS (BUILT-IN-PLACE)



NOTE:
MINIMUM DIMENSIONS GIVEN IN TABLE BELOW ARE BASED UPON TYPICAL OUTSIDE DIAMETERS OF CONCRETE PIPES WITH NORMAL COVER AND CLEARANCES, THESE DIMENSIONS MAY BE MODIFIED IF SO DETAILED IN THE PLANS OR AS DIRECTED BY THE ENGINEER, DIMENSIONS GIVEN ARE MINIMUM EXCEPT FOR "a" WHICH IS MAXIMUM.

TABLE OF MINIMUM DIMENSIONS FOR DROP INLETS

D	TYPES "A" or "B" BRICK OR REINF. CONC. W1	W2	H(min)	TYPE "C" OR "D" (BRICK) W1	W2	W3	a (MAX.)	b	H(min.)
15"	2'-0"	2'-7"	3'-3½"	2'-2⅛"	2'-11"	2'-9⅛"	0'-4⁹⁄₁₆"	0'-7⅞"	3'-9½"
18"	2'-0"	2'-10"	3'-7"	2'-2⅛"	3'-2½"	2'-9⅛"	0'-4⁹⁄₁₆"	0'-7⅞"	4'-1"
24"	~	~	~	2'-8⅛"	3'-3⅛"	3'-3⅛"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-9"
30"	~	~	~	3'-7¼"	4'-0¼"	3'-10¹⁄₁₆"	1'-0⅛"	1'-9"	5'-10"
36"	~	~	~	4'-1⅞"	6'-0⅝"	4'-8⅞"	1'-4⁷⁄₁₆"	2'-2¼"	6'-11⅛"
42"	~	~	~	4'-5"	7'-1¾"	5'-0"	1'-6"	2'-7³⁄₁₆"	8'-0¼"
48"	~	~	~	5'-0"	8'-2¾"	5'-7"	1'-9½"	3'-1¼"	9'-1¼"
54"	~	~	~	5'-7"	9'-4"	6'-2"	2'-1"	3'-7½"	10'-2½"
60"	~	~	~	6'-2"	1'-4⅞"	6'-9"	2'-4½"	4'-1⅜"	11'-3¼"

D	TYPE "E" (BRICK) W1	W2	W3	a (MAX.)	b	H(min.)
15"	3'-2⅛"	3'-1"	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	3'-11½"
18"	3'-2⅛"	3'-4½"	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-1"
24"	3'-2⅛"	3'-11½	3'-0⅝"	0'-7⁹⁄₁₆"	1'-1⅛"	4'-8¼"
30"	3'-5½"	4'-8⅜"	3'-4"	0'-8"	1'-1⅞"	5'-6⅞"
36"	3'-11½	5'-8⁹⁄₁₆"	3'-10"	0'-11"	1'-7¹⁄₁₆"	6'-7¹⁄₁₆"
42"	4'-6½"	7'-5¹¹⁄₁₆"	4'-5"	1'-2½"	2'-1³⁄₁₆"	8'-4³⁄₁₆"
48"	5'-1½"	8'-6¹¹⁄₁₆"	5'-0"	1'-6"	2'-7³⁄₁₆"	9'-5³⁄₁₆"
54"	5'-8½"	9'-7¾"	5'-7"	1'-9½"	3'-1¼"	10'-6¼"
60"	6'-3½"	10'-8¹³⁄₁₆"	6'-2"	2'-1"	3'-7⁵⁄₁₆"	11'-7⁵⁄₁₆"

D	TYPE "C","D" OR "E" (REINFORCED CONCRETE) W1 type "C"	W1 type "E"	W2	W3	a (MAX.)	b	H(min.)
15"	2'-0"	2'-1"	2'-7"	2'-0"	3½"	6"	3'-6"
18"	2'-0"	2'-1"	3'-0"	2'-0"	3½"	6"	3'-11"
24"	2'-8"	2'-9"	3'-8"	2'-6"	6½"	11¼"	4'-7"
30"	3'-4"	3'-6"	4'-9"	3'-0"	9½"	16½"	5'-10"
36"	3'-10"	4'-0"	5'-10"	3'-9"	1'-2"	2'-0"	6'-10"
42"	4'-5"	4'-6"	7'-0"	4'-3"	1'-5"	2'-5½"	7'-11"
48"	5'-0"	5'-0"	8'-2"	5'-0"	1'-9½"	3'-1½"	9'-2"
54"	5'-6"	5'-6"	9'-2"	5'-6"	2'-0½"	3'-6½"	10'-0"
60"	6'-0"	6'-0"	10'-3"	6'-0"	2'-3½"	4'-0"	11'-1"

DETAILS OF C.I. GRATING & FRAME — Approx. Weights Grate-200 lbs. Frame-137 lbs.

* CONTRACTOR SHALL SPECIFY EITHER MOUNTABLE OR NON-MOUNTABLE TO FOUNDRY IF HOOD IS REQUIRED.

BRICK WALL THICKNESSES (FOR ALL TYPE INLETS)

H	T
TO 10'	8"
TO 20'	12"
TO 30'	16"

SPECIAL NOTE:
STANDARD 1019A INLETS ARE FOR USE AT LOW POINTS & WHERE HYDRAULIC LOW CAPACITY GRATES ARE SUFFICIENT. WHERE HIGHER CAPACITY GRATES ARE NEEDED ON A CONTINUOUS GRADE, STANDARD 1019B IS RECOMMENDED.

NOTE:
FOR LARGER PIPE SIZES, TYPE "D" DROP INLET BOX WILL HAVE DETAILS AND DIMENSIONS AS SHOWN FOR TYPE "C" INLETS.

NOTE:
DETAILS NOT SHOWN FOR CONSTRUCTION ALTERNATES WILL BE SIMILAR TO THAT SHOWN FOR BRICK MASONRY.

CONSTRUCTION ALTERNATES

NOTE: CONCRETE WALLS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS, BUT WHERE H IS OVER 9 FT., AND PIPE IS OVER 30" I.D., THE HORIZONTAL STEEL, WHICH IS MORE THAN 9 FT. DEEP WILL BE INCREASED TO 6" SPACINGS. 6" CONC. BOTTOM SLABS WILL BE REINFORCED WITH #4 BARS 12" O.C. BOTH WAYS.

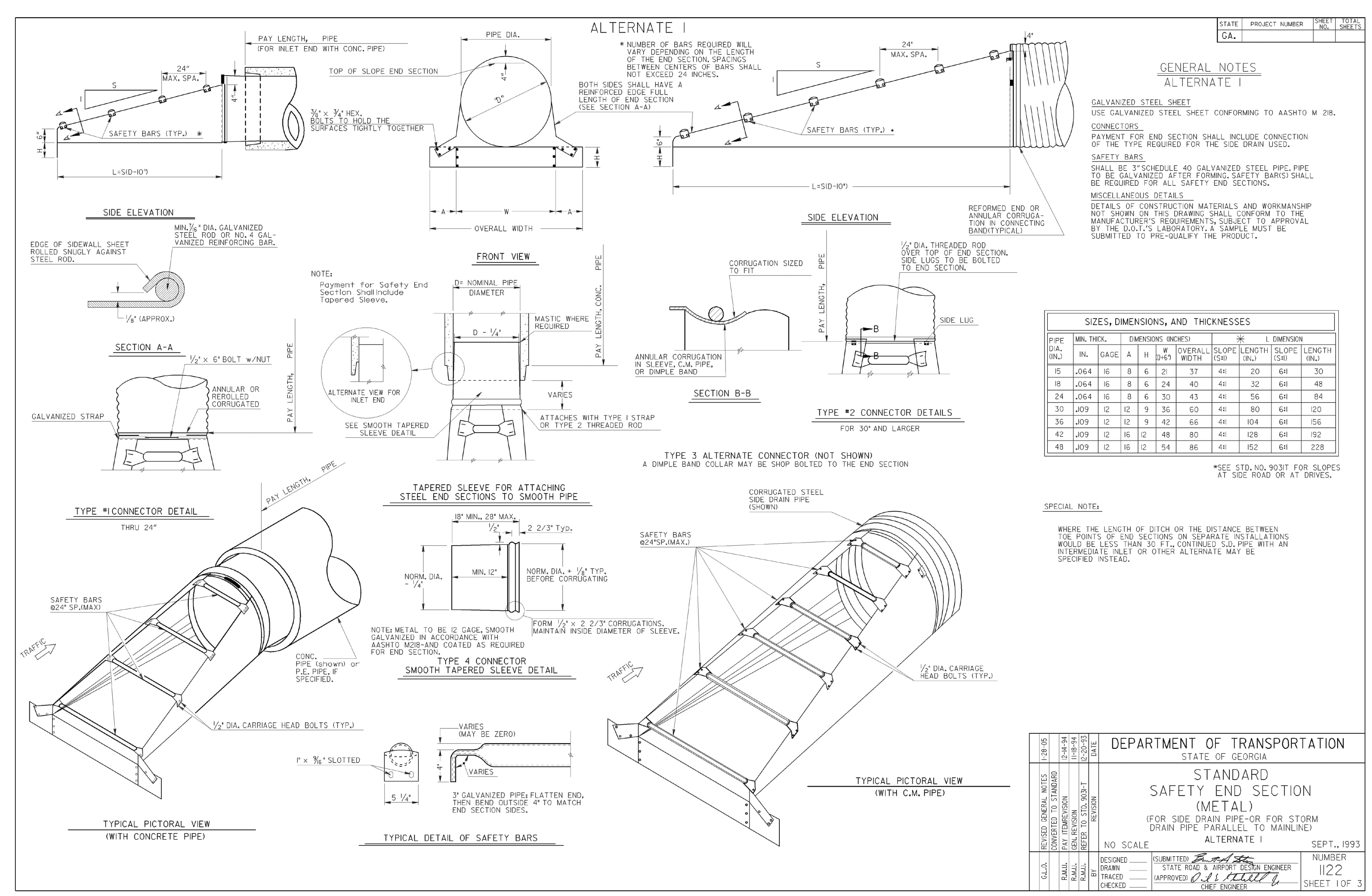
NOTE: FOR PRECAST ALTERNATES, SEE STD. 1019-A PRECAST AND/OR STD. 1040 PRECAST AND BUILT-IN-PLACE COMPONENTS MAY BE USED IN COMBINATIONS WHICH PROVIDE PROPER FITS AND STRUCTURAL ADEQUACY.

GENERAL NOTES:

1. SPECIFICATIONS: GEORGIA STANDARD AND CURRENT EDITION, AND SUPPLEMENTS THERETO.
2. ½" EXPANSION JOINT WILL BE REQUIRED WHERE RIGID PAVEMENT, CONCRETE SIDEWALK OR CONCRETE GUTTER MEETS DROP INLETS.
3. ALIGNMENT, NUMBER AND SIZES OF PIPES SHOWN ARE ONLY TYPICAL, SEE PLANS FOR ACTUAL PIPE CULVERT REQUIREMENTS.
4. ALL TYPE DROP INLETS WILL BE CONSTRUCTED (AS SHOWN), SO THAT THE GRATE BARS ARE PERPENDICULAR TO THE FLOW OF TRAFFIC EXCEPT ON LIMITED ACCESS PROJECTS OR WHERE BICYCLES ARE PROHIBITED.
5. BRICK MASONRY WITH CLASS "A" CONC. TOP PORTION IS SHOWN AS STANDARD CONSTRUCTION WITH ALTERNATES PERMITTED AS SHOWN. BOTTOM SLAB MAY BE 8" MIN. NON-REINFORCED CONCRETE, 8" BRICK OR 6" MIN. REINFORCED CONCRETE, SEE APPLICABLE STANDARDS FOR ALTERNATE PRECAST CONSTRUCTION.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
DROP INLETS
(BUILT-IN-PLACE)
SCALE AS SHOWN — REV. & REDR. AUG., 1999
NUMBER 1019A

SAFETY END SECTION (METAL)



GENERAL NOTES
ALTERNATE I

GALVANIZED STEEL SHEET
USE GALVANIZED STEEL SHEET CONFORMING TO AASHTO M 218.

CONNECTORS
PAYMENT FOR END SECTION SHALL INCLUDE CONNECTION OF THE TYPE REQUIRED FOR THE SIDE DRAIN USED.

SAFETY BARS
SHALL BE 3" SCHEDULE 40 GALVANIZED STEEL PIPE. PIPE TO BE GALVANIZED AFTER FORMING. SAFETY BAR(S) SHALL BE REQUIRED FOR ALL SAFETY END SECTIONS.

MISCELLANEOUS DETAILS
DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE MANUFACTURER'S REQUIREMENTS, SUBJECT TO APPROVAL BY THE D.O.T.'S LABORATORY. A SAMPLE MUST BE SUBMITTED TO PRE-QUALIFY THE PRODUCT.

* NUMBER OF BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION. SPACINGS BETWEEN CENTERS OF BARS SHALL NOT EXCEED 24 INCHES.

NOTE: Payment for Safety End Section Shall include Tapered Sleeve.

NOTE: METAL TO BE 12 GAGE, SMOOTH GALVANIZED IN ACCORDANCE WITH AASHTO M218-AND COATED AS REQUIRED FOR END SECTION.

TYPE 3 ALTERNATE CONNECTOR (NOT SHOWN)
A DIMPLE BAND COLLAR MAY BE SHOP BOLTED TO THE END SECTION

SIZES, DIMENSIONS, AND THICKNESSES										
PIPE DIA. (IN.)	MIN. THICK. IN.	MIN. THICK. GAGE	A	H	W (D+6")	OVERALL WIDTH	✳ L DIMENSION SLOPE (S:1)	LENGTH (IN.)	SLOPE (S:1)	LENGTH (IN.)
15	.064	16	8	6	21	37	4:1	20	6:1	30
18	.064	16	8	6	24	40	4:1	32	6:1	48
24	.064	16	8	6	30	43	4:1	56	6:1	84
30	.109	12	12	9	36	60	4:1	80	6:1	120
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228

*SEE STD. NO. 9031T FOR SLOPES AT SIDE ROAD OR AT DRIVES.

SPECIAL NOTE:
WHERE THE LENGTH OF DITCH OR THE DISTANCE BETWEEN TOE POINTS OF END SECTIONS ON SEPARATE INSTALLATIONS WOULD BE LESS THAN 30 FT., CONTINUED S.D. PIPE WITH AN INTERMEDIATE INLET OR OTHER ALTERNATE MAY BE SPECIFIED INSTEAD.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
STANDARD
SAFETY END SECTION
(METAL)
(FOR SIDE DRAIN PIPE-OR FOR STORM DRAIN PIPE PARALLEL TO MAINLINE)
ALTERNATE I
NO SCALE — SEPT., 1993
NUMBER 1122 — SHEET 1 OF 3

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LAND SURVEYING
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Professional Seal
GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. PE031684 JASON P. BROWN

Project Information

COVINGTON FIRE STATION #23
9155 HIGHWAY 36
COVINGTON, GA 30014
ZONING: CM - CORRIDOR MIXED USE

DRAWING DATE:	5/15/2026
DRAWN BY:	DLD
CHECKED BY:	JPB

REVISIONS	
DATE:	DESCRIPTION:
5/15/2026	ADD. COMMENTS

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Sheet Title
STORM WATER MANAGEMNET DETAILS

Sheet Number
C-4.2

OWNER/DEVELOPER
COMPANY: CITY OF COVINGTON
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COVINGTON, GA 30014
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CONTACT: TRUDY HENRY
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CONTRACTOR
COMPANY: SUNBELT BUILDERS
ADDRESS: 10641 HIGHWAY 36
COVINGTON, GA 30014
CONTACT: MIKE MCCROREY
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EMAIL: MMCCROREY@SUNBELTBUILDERS.COM

SURVEYOR
COMPANY: GEORGIA CIVIL, INC.
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SITE DESIGNER
COMPANY: GEORGIA CIVIL, INC.
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MADISON, GA 30650
PHONE: 706.342.1104

JASON P. BROWN
LEVEL II CERTIFIED DESIGN PROFESSIONAL
#53274 - EXP. 05.01.2029

24-HOUR CONTACT
MIKE MCCROREY
404-644-2939

GEORGIA811 www.Georgia811.com
Contact 811 before you dig

Utilities/Services shown are for Contractors' convenience. Items are shown schematically and neither the site design professional nor the owner assumes any responsibility for variances in their actual location. This plan may not show and/or may incorrectly show utilities located on site. Contractor shall be responsible to secure and use the services of a private utility locator firm during the entire course of work and shall pay for said services. Contractor shall locate utilities prior to any disturbance (including field verifying location and depth of utilities that are to be saved and protected). Contractor shall notify the site design professional of any utility conflicts prior to installation of new utilities, grading, etc. The Contractor, at their expense, shall be responsible to repair, replace and/or relocate, as necessary, any utilities damaged, whether shown or not. Abandonment, relocation, etc. of utilities shall be coordinated with the respective utility company.