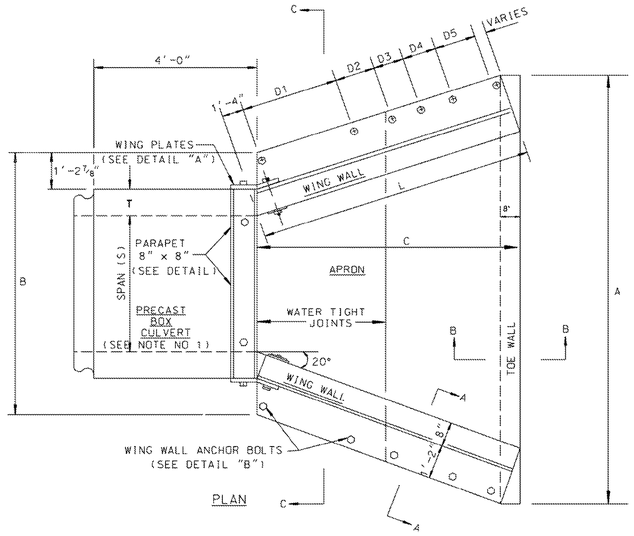
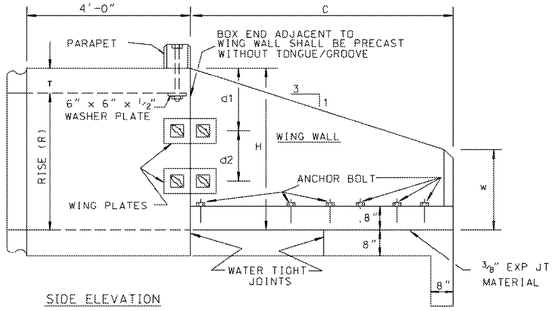
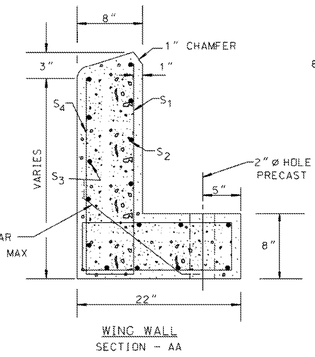
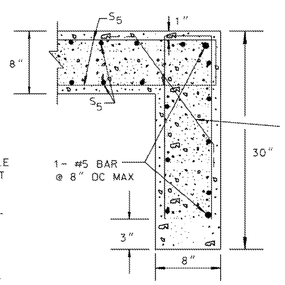




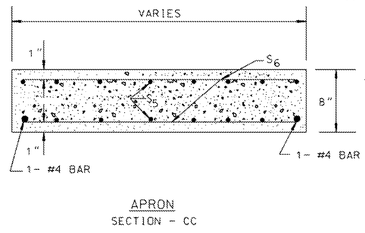
SIDE ELEVATION



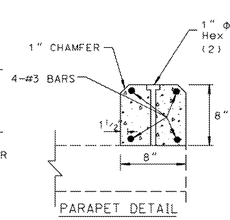
WING WALL
SECTION - AA



TOE WALL
SECTION - BB



APRON
SECTION - CC



PARAPET DETAIL

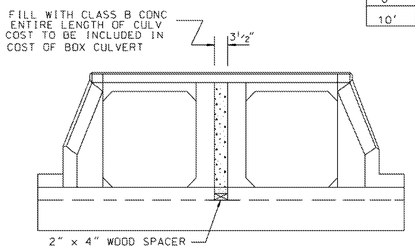
* REINFORCING STEEL SCHEDULE-SQUARE INCHES OF STEEL PER LINEAR FOOT OF WING.

TABLE OF DIMENSIONS

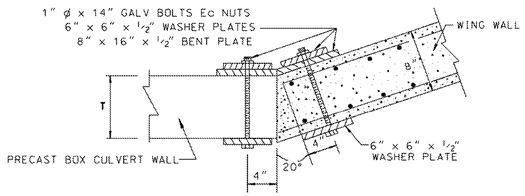
SPAN (S)	RISE (R)	T	SINGLE BOX APRON @ A	SINGLE BOX APRON @ B	DOUBLE BOX APRON @ A	DOUBLE BOX APRON @ B	TRIPLE BOX APRON @ A	TRIPLE BOX APRON @ B	QUADRUPLE BOX APRON @ A	QUADRUPLE BOX APRON @ B	APRON LENGTH @ C	WING HEIGHT @ H	WING LENGTH @ L	WING HEIGHT @ W	WING WALL ANCHORS D1	D2	D3	D4	D5	WING PLATE d1	WING PLATE d2	* REINFORCING STEEL S1	S2	S3	S4	S5	S6
6'	4'	7"	15'-1"	9'-7¾"	22'-8½"	17'-3¼"	30'-4"	24'-10¾"	37'-11½"	32'-6¼"	8'-0"	4'-8"	8'-6"	1'-10"	6'-2"	—	—	—	—	2'-0"	—	.10	.10	.10	.10	.10	.10
8'	4'	8"	17'-3"	11'-9¾"	26'-10½"	21'-5¼"	36'-6"	31'-0¾"	46'-1½"	40'-8¼"	8'-0"	4'-8"	8'-6"	1'-10"	6'-2"	—	—	—	—	2'-0"	—	.10	.10	.10	.10	.10	.10
6'	5'	7"	15'-1"	9'-7¾"	22'-8½"	17'-3¼"	30'-4"	24'-10¾"	37'-11½"	32'-6¼"	8'-0"	5'-8"	8'-6"	2'-10"	6'-2"	—	—	—	—	2'-0"	—	.12	.10	.10	.10	.10	.10
8'	5'	8"	17'-3"	11'-9¾"	26'-10½"	21'-5¼"	36'-6"	31'-0¾"	46'-1½"	40'-8¼"	8'-0"	5'-8"	8'-6"	2'-10"	6'-2"	—	—	—	—	2'-0"	—	.12	.10	.10	.10	.10	.10
6'	6'	7"	17'-11¾"	9'-7¾"	25'-7¼"	17'-3¼"	33'-2¾"	24'-10¾"	40'-10¼"	32'-6¼"	12'-0"	6'-8"	12'-9¼"	2'-5"	6'-2"	2'-4"	1'-11"	—	—	2'-0"	2'-0"	.20	.10	.10	.10	.10	.10
8'	6'	8"	20'-1¾"	11'-9¾"	29'-9¼"	21'-5¼"	39'-4¾"	31'-0¾"	49'-0¼"	40'-8¼"	12'-0"	6'-8"	12'-9¼"	2'-5"	6'-2"	2'-4"	1'-11"	—	—	2'-0"	2'-0"	.20	.10	.10	.10	.10	.10
10'	6'	10"	22'-5¾"	14'-1¾"	34'-5¼"	26'-1¼"	46'-4¾"	38'-0¾"	58'-4¼"	50'-0¼"	12'-0"	6'-10"	12'-9¼"	2'-7"	6'-2"	2'-4"	1'-11"	—	—	2'-0"	2'-0"	.20	.10	.10	.10	.10	.10
8'	8'	8"	23'-0¾"	11'-9¾"	32'-8¼"	21'-5¼"	42'-3¾"	31'-0¾"	51'-11¼"	40'-8¼"	16'-0"	8'-8"	17'-0 5/16"	3'-0"	6'-2"	2'-4"	1'-11"	2'-4"	1'-11"	2'-0"	2'-0"	.45	.10	.10	.10	.10	.10
10'	8'	10"	25'-4¾"	14'-1¾"	37'-4¼"	26'-1¼"	49'-3¾"	38'-0¾"	61'-3¼"	50'-0¼"	16'-0"	8'-10"	17'-0 5/16"	3'-2"	6'-2"	2'-4"	1'-11"	2'-4"	1'-11"	2'-0"	2'-0"	.45	.10	.10	.10	.10	.10
10'	10'	10"	28'-3¾"	14'-1¾"	40'-3¼"	26'-1¼"	52'-2¾"	38'-0¾"	64'-2¼"	50'-0¼"	20'-0"	10'-10"	21'-3⅜"	3'-9"	6'-2"	2'-4"	1'-11"	2'-4"	6'-2"	2'-0"	2'-0"	.45	.10	.10	.10	.10	.10

APRON LENGTH AND JOINT SCHEDULE

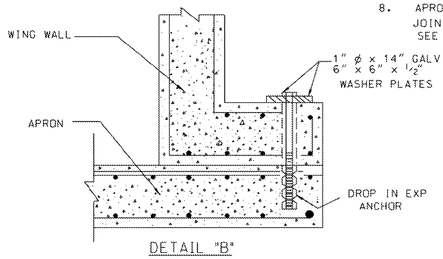
RISE	INSIDE	MIDDLE	END W/TOE WALL
4' & 5'	—	—	8'-0"
6'	8'-0"	—	4'-0"
8'	8'-0"	—	8'-0"
10'	8'-0"	4'-0"	8'-0"



END ELEVATION
FOR MULTIPLE BOX INSTALLATION



DETAIL "A"



DETAIL "B"

GENERAL NOTES

1. FOR BOX CULVERT SECTION DESIGN AND TABLE OF DIMENSIONS, SEE AASHTO M-273 (ASTM C 850) AND M-259 (ASTM C 789)
2. CONCRETE SHALL HAVE 5000 psi COMPRESSIVE STRENGTH.
3. REINFORCING WIRE SHALL HAVE A MIN YIELD STRENGTH OF 65000 psi
4. STEEL PLATES SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111. BOLTS AASHTO M298, CLASS 50.
5. PRECAST APRON JOINTS SHALL BE INSTALLED WITH A WATER TIGHT SEAL.
6. BEVELED PRECAST BOX CULVERT END SECTIONS MAY BE USED IN LIEU OF PRECAST END SECTIONS AS DETAILED. PRIOR APPROVAL FOR USE WILL BE REQUIRED
7. CAST IN PLACE CULVERT WING WALLS, PARAPETS AND APRONS MAY BE USED IN LIEU OF PRECAST END SECTIONS AS DETAILED. DRILL AND GROUT IN NO 5 DEFORMED BARS- 24" LONG @ 6" OC FOR ATTACHING.
8. APRONS WITH TOE WALL AS DETAILED MAY BE CAST IN PLACE IN LIEU OF PRECASTING. JOINTING WILL NOT BE REQUIRED. FOR EXTRA DEPTH TOE WALLS (TOE WALL EXTENSION) SEE STD DWG NO CS-3-1.

PRECAST CONCRETE BOX CULVERT AND END SECTION

1 DETAIL
SCALE: N.T.S.

ALABAMA DEPARTMENT OF TRANSPORTATION
SPECIAL DRAWING NO.
PCC-524
INDEX NO.
438

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BID SET

STATE OF ALABAMA LICENSED PROFESSIONAL ENGINEER CHRISTIAN P. TAUNTON 10126 19

MARK	DATE	DESCRIPTION	BY

HUNTSVILLE UTILITIES
SOUTHEAST WATER TREATMENT PLANT
STANDARD CIVIL DETAILS

Project No.:	200-11740-10003
Designed By:	JRW
Drawn By:	WDV
Checked By:	JPT

C-9512

Copyright: Tetra Tech

Bar Measures 1 inch

10/1/2014 4:32:22 PM - \\ERS181FS1\PROJECTS\ER\11740\200-11740-10003\CAD\SHEETFILES\TREATMENT PLANT\WTP C-9504 TO C-9508 DETAILS.DWG - REYES, HECTOR