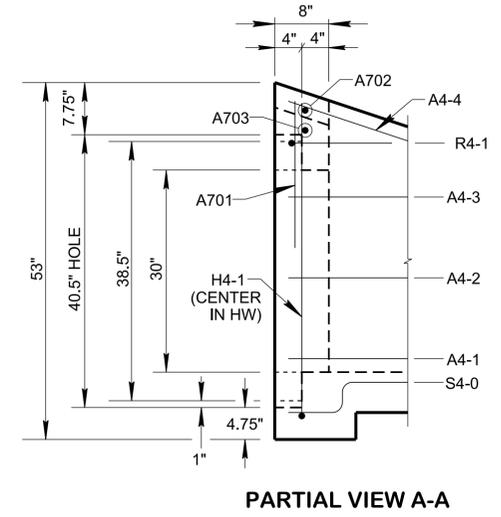
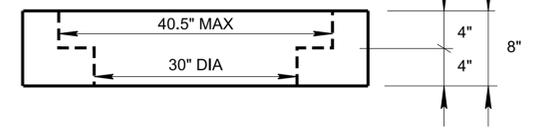
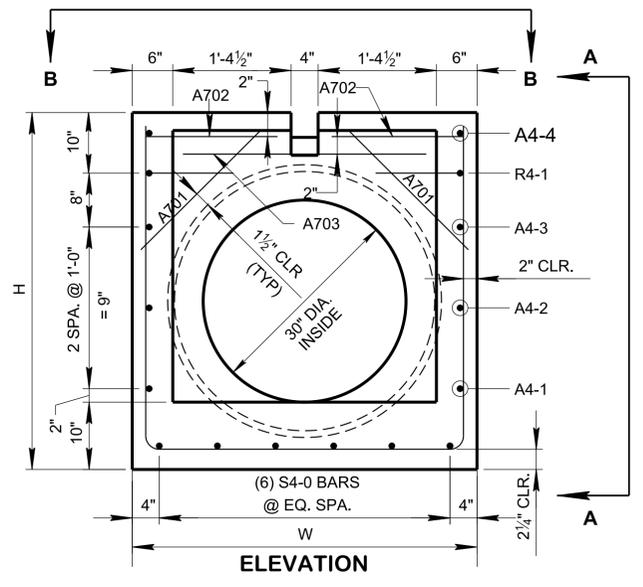
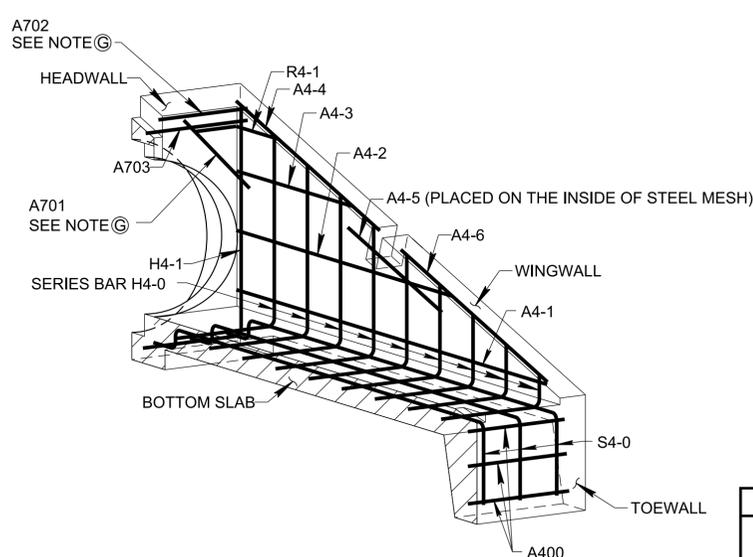
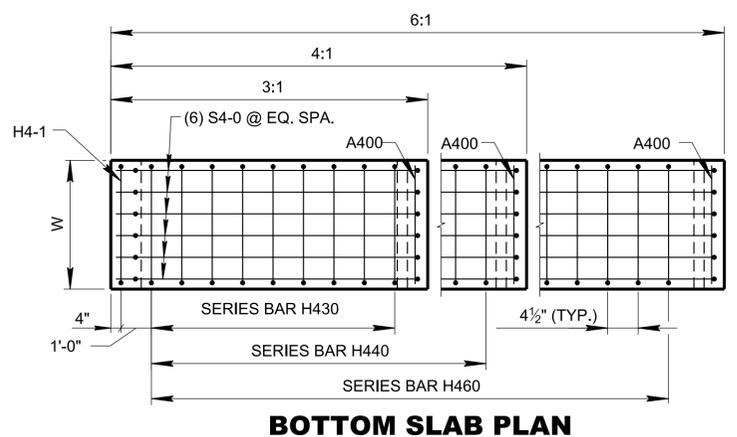
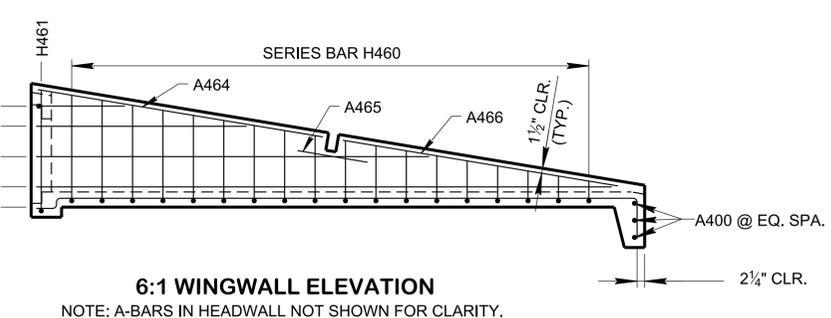
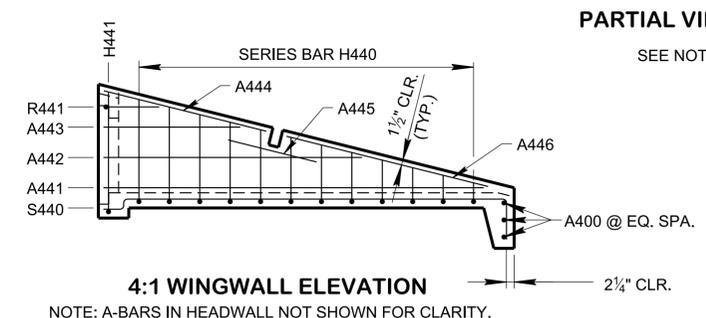
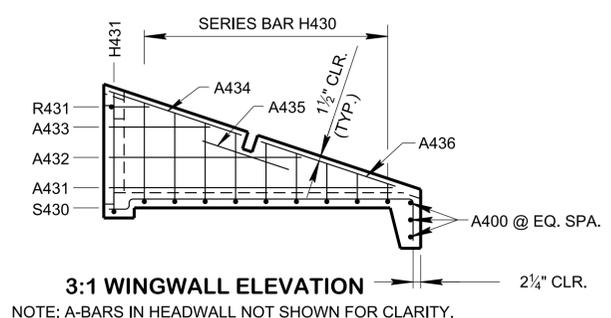


NOTES: SEE D-PE-99 FOR STEEL PIPE GRATE DETAILS
 3/4" CHAMFER REQUIRED ON ALL EXPOSED EDGES



- REV. 6-14-13: REVISED NOTE (G) ADDED NOTE (H) AND (I)
- REV. 1-6-15: REVISED HOLE OPENING SIZE. ADDED STEPPED HOLE DETAIL.
- REV. 1-21-16: REVISED GENERAL NOTE (B)
- REV. 10-10-16: REVISED GENERAL NOTE (A)
- REV. 06-28-19: ADJUSTED A-A, B-B AND ELEVATION VIEWS. RENAMED AND REDREW SHEET.



DIMENSIONS AND QUANTITIES FOR ONE ENDWALL 30" PIPE										
SLOPE	CONCRETE ENDWALL DIMENSIONS				W	STRUCTURAL STEEL PIPE DIMENSIONS		ESTIMATED QUANTITIES		
	H	L ₁	L ₂	L ₃		LG	WG	CLASS "A" CONC. CU. YD.	STEEL BAR REINF. LB.	STRUCTURAL STEEL LB.
3:1		10' - 5"	10' - 11 3/4"	5' - 2"		10' - 10 3/8"		1.84	174	114
4:1	4' - 5"	13' - 8"	14' - 1"	6' - 1"	4' - 1"	14' - 0 1/8"	4' - 1"	2.32	216	137
6:1		20' - 2"	20' - 5 3/8"	10' - 1"		20' - 4 3/4"		3.29	303	186

NOTE: SEE D-PE-99 FOR STRUCTURAL STEEL PIPE DIMENSIONS LG & WG.

- GENERAL NOTES**
- (A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE AND ALL PRECAST 30" CONCRETE ENDWALLS (TYPE "U") FOR CROSS DRAINS ONLY. "U" ENDWALL TO BE PLACED AT 90° SKEW TO CENTERLINE. SEE STD. DWG. D-PE-99 FOR SKEWED CONNECTION DETAIL WHEN CROSS DRAIN IS NOT PERPENDICULAR TO CENTERLINE. CAST-IN-PLACE CONCRETE ENDWALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS.
 - (B) SEE STD. DWG. D-PE-30B FOR BILL OF STEEL & PRECAST NOTES.
 - (C) "N" IN BAR DESIGNATION REPRESENTS 3, 4 OR 6 FOR 3:1, 4:1 OR 6:1 SLOPES, RESPECTIVELY.
 - (D) SPLICING OF REINFORCEMENT IS ACCEPTABLE PROVIDED THAT A MINIMUM 21" SPLICE LENGTH IS USED.
 - (E) TOEWALL BACK SLOPE MAY BE CONSTRUCTED VARIABLE FROM VERTICAL UP TO 15°.
 - (F) 90° STEPS ARE SHOWN ON THE STEPPED HOLE DETAIL, HOWEVER MINOR VARIATIONS OF THE TAPER ARE ACCEPTABLE.
 - (G) OPTIONAL STEPPED HOLE OR HOLE FORMERS ARE ALLOWED PROVIDED THE AMOUNT OF COVER BETWEEN THE PIPE OPENING AND BARS A701 AND A702 IS THE SAME OR GREATER THAN SHOWN ON THIS DRAWING.
 - (H) PAYMENT WILL BE MADE UNDER:

611-07.60	30" ENDWALL (CROSS DRAIN) 3:1	EACH
611-07.61	30" ENDWALL (CROSS DRAIN) 4:1	EACH
611-07.62	30" ENDWALL (CROSS DRAIN) 6:1	EACH
 - (I) THE CONTRACTOR MAY BE ELECT TO SUBSTITUTE AN APPROVED ALTERNATIVE DESIGN.
 - (J) DIMENSIONAL AND REINFORCING TOLERANCES WILL BE AS SHOWN IN STANDARD OPERATING PROCEDURE (SOP) 5-3.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
 STANDARD DRAWING
 DEPARTMENT OF TRANSPORTATION

TYPE "U"
 CROSS DRAIN ENDWALL
 FOR 30" PIPE
 WITH STEEL PIPE GRATE
 (FOR 3:1, 4:1 & 6:1 SLOPES)

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