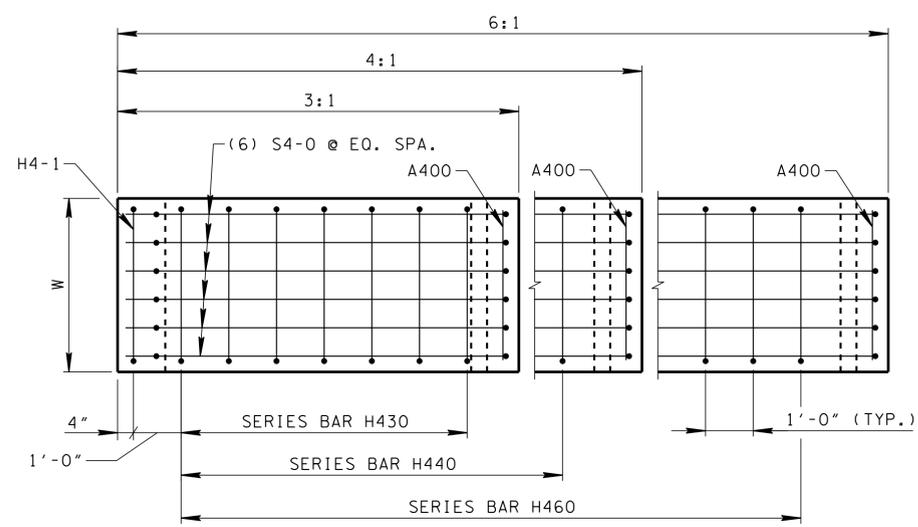
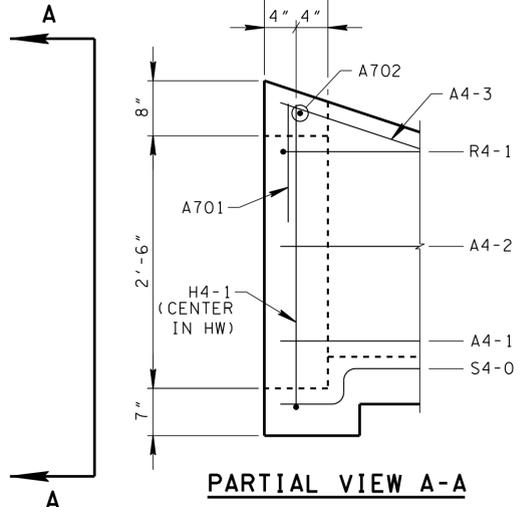
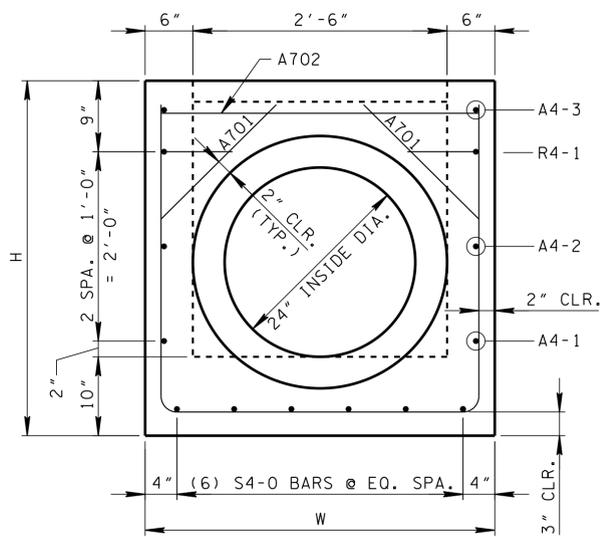


**ALTERNATE DETAIL "A"**



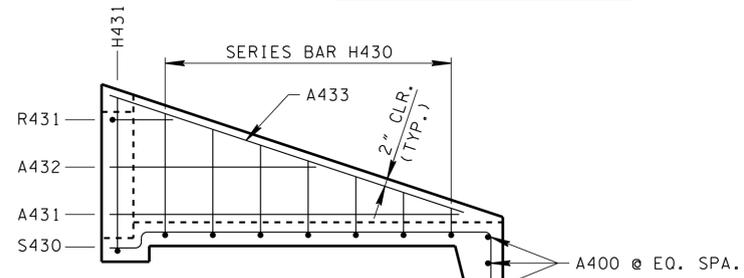
**ISOMETRIC VIEW**

NOTE: 3/4" CHAMFER REQUIRED ON ALL EXPOSED EDGES



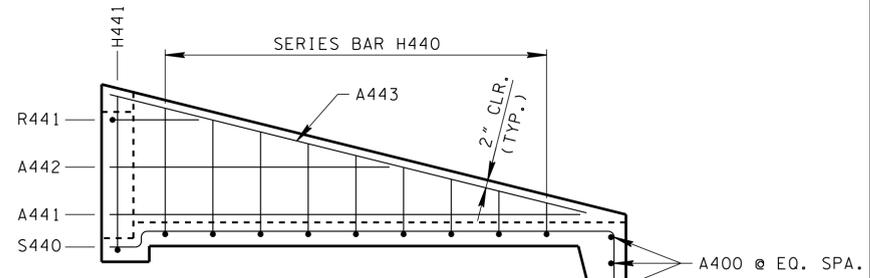
**3:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



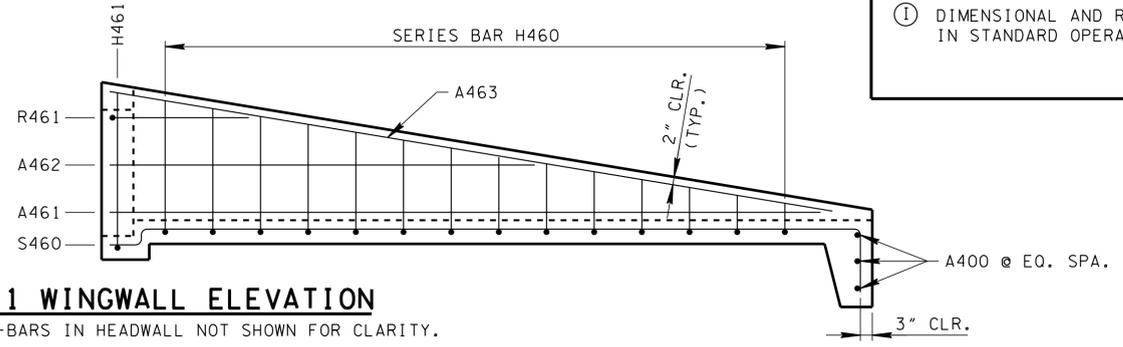
**4:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



**6:1 WINGWALL ELEVATION**

NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



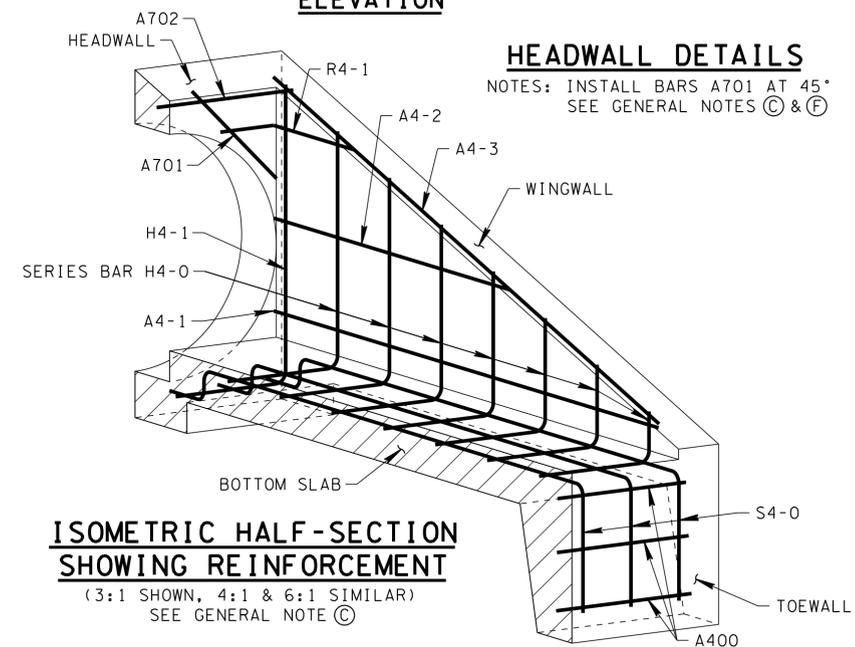
- GENERAL NOTES**
- (A) DRAWING TO BE USED FOR ALL CAST-IN-PLACE AND ALL PRECAST 24" CONCRETE ENDWALLS (TYPE "U") FOR CROSS DRAINS ONLY. "U" ENDWALL TO BE PLACED AT 90° SKEW TO CENTERLINE. SEE STD. DWG. D-PE-99 FOR SKEWED CONNECTION DETAIL WHEN CROSS DRAIN IS NOT PERPENDICULAR TO CENTERLINE. CAST-IN-PLACE CONCRETE ENDWALL SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, SECTION 611 AND/OR SPECIAL PROVISIONS.
  - (B) SEE STD. DWG. D-PE-24B FOR BILL OF STEEL & PRECAST NOTES.
  - (C) "-" 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) OPTIONAL STEPPED HOLE IS 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.
  - (G) PAYMENT WILL BE MADE UNDER:
 

611-07.57	24IN ENDWALL (CROSS DRAIN) 3:1	EACH
611-07.58	24IN ENDWALL (CROSS DRAIN) 4:1	EACH
611-07.59	24IN ENDWALL (CROSS DRAIN) 6:1	EACH
  - (H) THE CONTRACTOR MAY ELECT TO SUBSTITUTE AN APPROVED ALTERNATE DESIGN.
  - (I) DIMENSIONAL AND REINFORCEMENT TOLERANCES WILL BE AS SHOWN IN STANDARD OPERATION PROCEDURE (SOP) 5-3.

**ELEVATION**

**HEADWALL DETAILS**

NOTES: INSTALL BARS A701 AT 45° SEE GENERAL NOTES (C) & (F)



DIMENSIONS AND QUANTITIES FOR ONE ENDWALL 24" PIPE						
SLOPE	CONCRETE ENDWALL DIMENSIONS				ESTIMATED QUANTITIES	
	H	L <sub>1</sub>	L <sub>2</sub>	W	CLASS "A" CONC. CU. YD.	STEEL BAR REINF. LB.
3:1	3' - 9"	8' - 5"	8' - 10 1/2"	3' - 6"	1.28	124
4:1		11' - 0"	11' - 4"		1.61	153
6:1		16' - 2"	16' - 4 5/8"		2.26	215

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE DEPARTMENT OF TRANSPORTATION

**24" CONCRETE ENDWALL CROSS DRAIN**  
(FOR 3:1, 4:1 & 6:1 SLOPES)