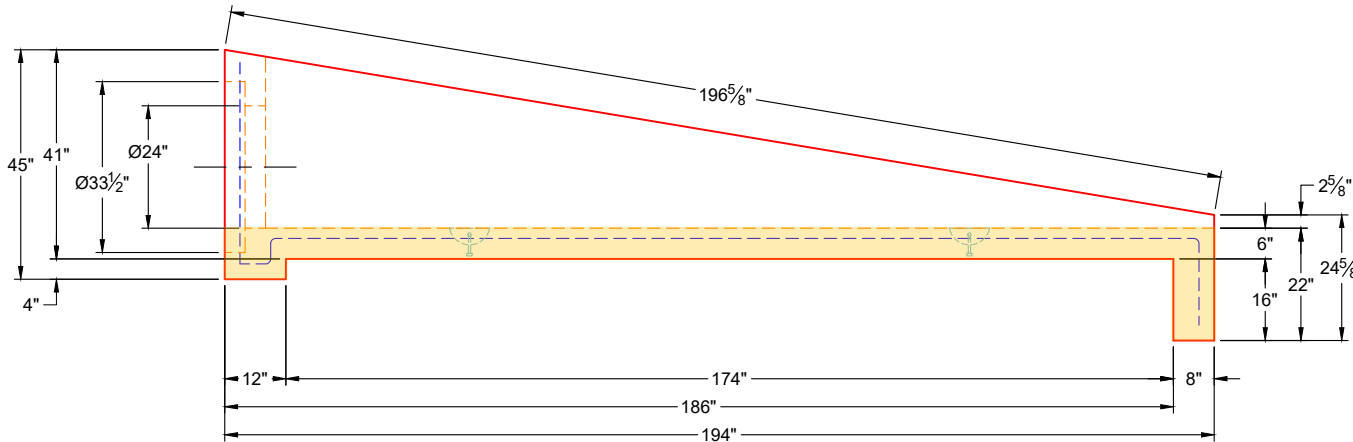


4 EA. CONAC 5CA14 A-ANCHORS
FOR PLANT & FIELD HANDLING

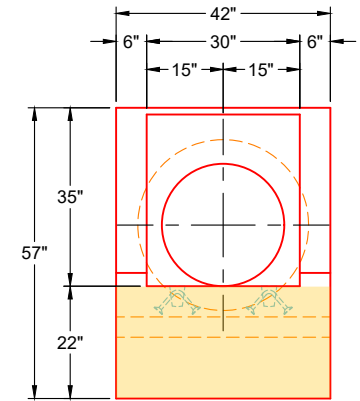
FRONT VIEW

GENERAL NOTES:

1. MANUFACTURED PER TDOT D-PE-24A & D-PE-24B SPECS
2. CONCRETE: 5,000 PSI OR GREATER AT 28 DAYS
3. REINFORCEMENT: PER TDOT STANDARD DRAWINGS D-PE-24A & D-PE-24B
4. TOTAL WEIGHT: 8,645 LBS
 - FIRST POUR: 4,700 LBS
 - SECOND POUR: 3,945 LBS
5. 3 EA. STRUCTURAL STEEL GRATES (PER TDOT STANDARD DRAWING D-SEW-1A) SUPPLIED BY ICAST



FRONT VIEW



SIDE VIEW

PRODUCTION WORK ORDER

PRODUCT I.D.: HWTDOT6-1SA24

DESCRIPTION: 24" TDOT SAFETY SIDE DRAIN EW 6:1 (D-PE-24A)



QUALITY CONTROL CHECKLIST

- ALL DIMENSIONS CORRECT.
- LIFTERS INSTALLED.
- OPENING CENTERED.
- REINFORCING CORRECT.
- SURFACE QUALITY ACCEPTABLE.
- EDGES CHAMFERED.
- ALL PATCHWORK ACCEPTABLE.

PRODUCT VIEW: RIGHT SIDE UP

CUSTOMER: CAPITAL CITY CONSTRUCTION SERVICES, LLC

PLANT: BEAVER DAM, KY

PROJECT: SAM RIDLEY PARKWAY ROADWAY IMPROVEMENTS

WEIGHT: 8,645 LBS

STRUCTURE: ICAST LI12

TOP SECTION JOINT: N / A

ORDER NO: 25-3264

BASE SECTION JOINT: N / A

PE: J.H. ROSS

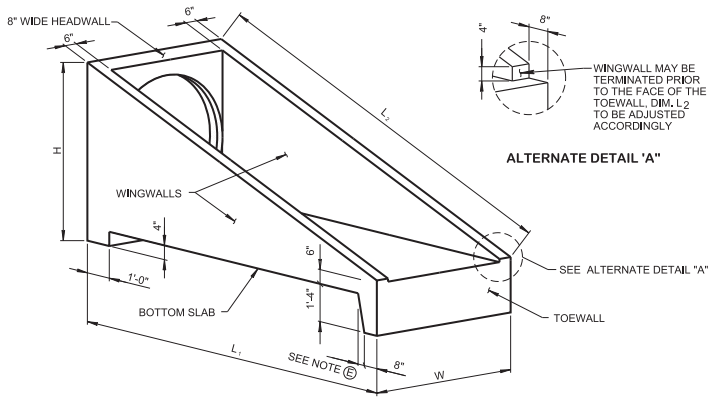
DRAWING: K. CARDWELL

QC CHECK INITIALS:

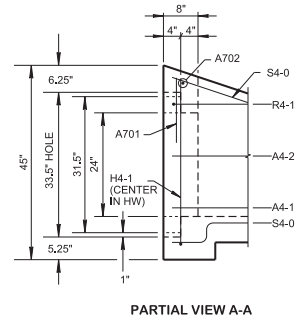
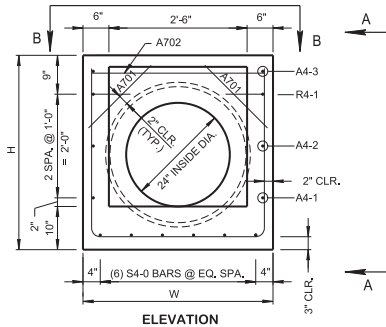
DATE: 12/16/25

SCALE: NTS

PG. 1 OF 1

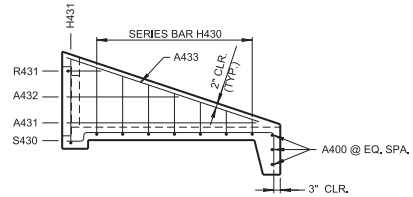
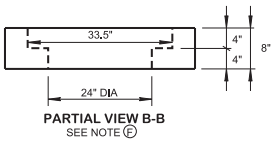


ALTERNATE DETAIL "A"

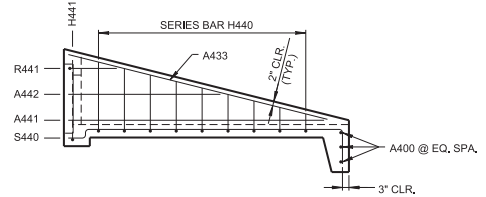


HEADWALL DETAILS

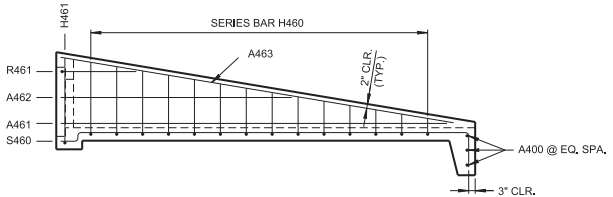
NOTE: INSTALL BARS A701 AT 45°
SEE GENERAL NOTES C & E.



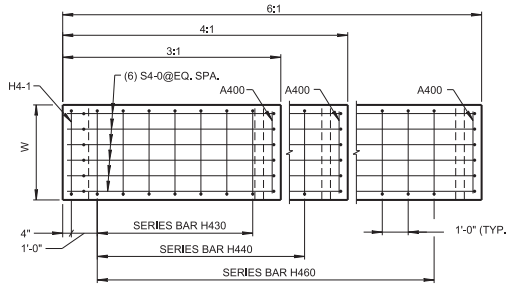
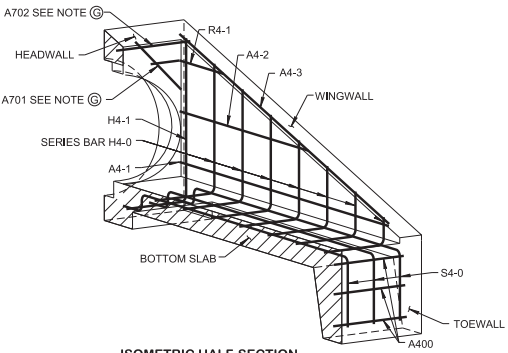
NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



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



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



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

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. SEE STD. DWG. D-PE-24B.

(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:

611-07.57	24" ENDWALL (CROSS DRAIN) 3:1	EACH
611-07.58	24" ENDWALL (CROSS DRAIN) 4:1	EACH
611-07.59	24" 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.

- REV. 6-14-13: REVISED NOTEG. ADDED NOTE (D) AND (I)
- REV. 1-6-15: REVISED HOLE OPENING SIZE. ADDED STEPPED HOLE DETAIL.
- REV. 1-21-16: REVISED GENERAL NOTE (E)
- REV. 7-5-17: MODIFIED GENERAL NOTES (C) AND (I)
- REV. 06-28-19: ADJUSTED A-A, B-B AND ELEVATION VIEWS. RENAMED AND REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

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

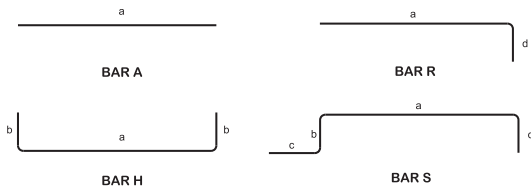
11/8/2019 11:38:15 AM C:\Users\j00547\Desktop\DRAWINGS FOR IB SET\DIDPE24A-20190628.dgn

NOT TO SCALE

BILL OF STEEL

CODE NO.	LOCATION	BAR SIZE	3:1 WINGWALL SLOPE						4:1 WINGWALL SLOPE						6:1 WINGWALL SLOPE					
			BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH
			a	b	c	d			a	b	c	d			a	b	c	d		
A400	TOEWALL	4	3'-2"	-	-	-	3	3'-2"	3'-2"	-	-	-	3	3'-2"	3'-2"	-	-	-	3	3'-2"
A431	WINGWALLS	4	7'-4"	-	-	-	2	7'-4"	-	-	-	-	-	-	-	-	-	-	-	-
A432	WINGWALLS	4	4'-4"	-	-	-	2	4'-4"	-	-	-	-	-	-	-	-	-	-	-	-
A433	WINGWALLS	4	7'-10"	-	-	-	2	7'-10"	-	-	-	-	-	-	-	-	-	-	-	-
A441	WINGWALLS	4	-	-	-	-	-	-	9'-10"	-	-	-	2	9'-10"	-	-	-	-	-	-
A442	WINGWALLS	4	-	-	-	-	-	-	5'-10"	-	-	-	2	5'-10"	-	-	-	-	-	-
A443	WINGWALLS	4	-	-	-	-	-	-	10'-4"	-	-	-	2	10'-4"	-	-	-	-	-	-
A461	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	14'-11"	-	-	-	2	14'-11"
A462	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	8'-11"	-	-	-	2	8'-11"
A463	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	15'-4"	-	-	-	2	15'-4"
A701	HEADWALL	7	1'-8"	-	-	-	2	1'-8"	1'-8"	-	-	-	2	1'-8"	1'-8"	-	-	-	2	1'-8"
A702	HEADWALL	7	3'-2"	-	-	-	1	3'-2"	3'-2"	-	-	-	1	3'-2"	3'-2"	-	-	-	1	3'-2"
SERIES H430	BOTTOM SLAB & WINGWALL	4	3'-2"	*	-	-	1	43'-9"	-	-	-	-	-	-	-	-	-	-	-	-
			* DIMENSION "b" VARIES FROM 2'-6 1/2" TO 0'-6 1/2" IN INCREMENTS OF 0'-4" (7 BARS)																	
H431	BOTTOM SLAB & HEADWALL	4	3'-2"	3'-2 1/2"	-	-	1	9'-7"	-	-	-	-	-	-	-	-	-	-	-	-
SERIES H440	BOTTOM SLAB & WINGWALL	4	-	-	-	-	-	-	3'-2"	*	-	-	1	58'-3 1/4"	-	-	-	-	-	-
			* DIMENSION "b" VARIES FROM 2'-7 1/2" TO 0'-7 1/2" IN INCREMENTS OF 0'-2" (9 BARS)																	
H441	BOTTOM SLAB & HEADWALL	4	-	-	-	-	-	-	3'-2"	3'-2 1/2"	-	-	1	9'-7 1/4"	-	-	-	-	-	-
SERIES H460	BOTTOM SLAB & WINGWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	3'-2"	*	-	-	1	91'-7"
			* DIMENSION "b" VARIES FROM 2'-9 1/4" TO 0'-7 1/4" IN INCREMENTS OF 0'-2" (14 BARS)																	
H461	BOTTOM SLAB & HEADWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	3'-2"	3'-3 1/4"	-	-	1	9'-8 1/2"
R431	WINGWALL & HEADWALL	4	1'-4"	0'-8"	-	-	2	2'-0"	-	-	-	-	-	-	-	-	-	-	-	-
R441	WINGWALL & HEADWALL	4	-	-	-	-	-	-	1'-10"	0'-8"	-	-	2	2'-6"	-	-	-	-	-	-
R461	WINGWALL & HEADWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	2'-11"	0'-8"	-	-	2	3'-7"
S430	BOTTOM SLAB & TOEWALL	4	7'-4 1/2"	0'-4 1/2"	0'-8"	1'-5"	6	9'-10"	-	-	-	-	-	-	-	-	-	-	-	-
S440	BOTTOM SLAB & TOEWALL	4	-	-	-	-	-	-	9'-11 1/2"	0'-4 1/2"	0'-8"	1'-5"	5	12'-5"	-	-	-	-	-	-
S460	BOTTOM SLAB & TOEWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	15'-1 1/2"	0'-4 1/2"	0'-8"	1'-5"	6	17'-7"

REINFORCING STEEL LEGEND



REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

PRECAST NOTES

PRECAST UNITS:

THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST ENDWALLS FOR CAST-IN-PLACE ENDWALLS PROVIDED THAT:

- ① APPROPRIATE SIZING AND LOCATION OF THE LIFTING INSERTS SHALL BE THE RESPONSIBILITY OF THE FABRICATOR TO ASSURE BALANCED HANDLING DURING INSTALLATION OF THE PRECAST ENDWALL.
- ② THE CONTRACTOR TO PATCH ALL LIFTING INSERT HOLES AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.
- ③ PAYMENT FOR PRECAST ENDWALLS BASED ON THE QUANTITIES FOR CAST-IN-PLACE ENDWALLS IS ACCEPTABLE.
- ④ PRECAST ENDWALL UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE THE DAMAGED ENDWALL UNITS AT HIS OWN EXPENSE.
- ⑤ PIPE OPENINGS FOR HEADWALLS ARE BASED ON REINFORCED CONCRETE PIPE WITH TYPE "B" WALL THICKNESS (AASHTO M170).
- ⑥ ADDITIONAL REINFORCING STEEL NECESSARY TO MAINTAIN THE INTEGRITY OF THE STRUCTURE DURING HANDLING AND PLACEMENT SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

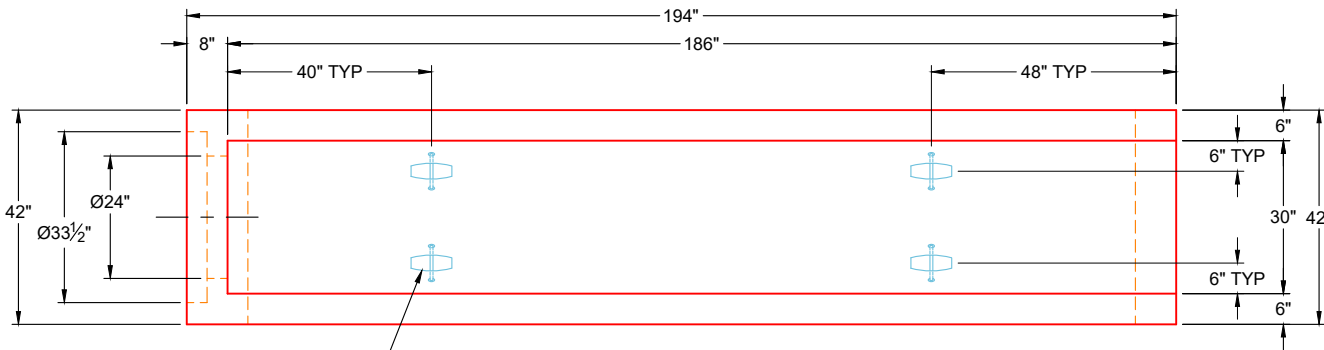
CONCRETE: F_c=4,500 POUNDS PER SQUARE INCH MINIMUM AT 28 DAYS.
REINFORCING STEEL: ASTM A615, F_y=60,000 POUNDS PER SQUARE INCH.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

TYPE "U"
CROSS DRAIN ENDWALL
FOR 24" PIPE,
BILL OF STEEL AND
PRECAST NOTES

03-01-2012 D-PE-24B

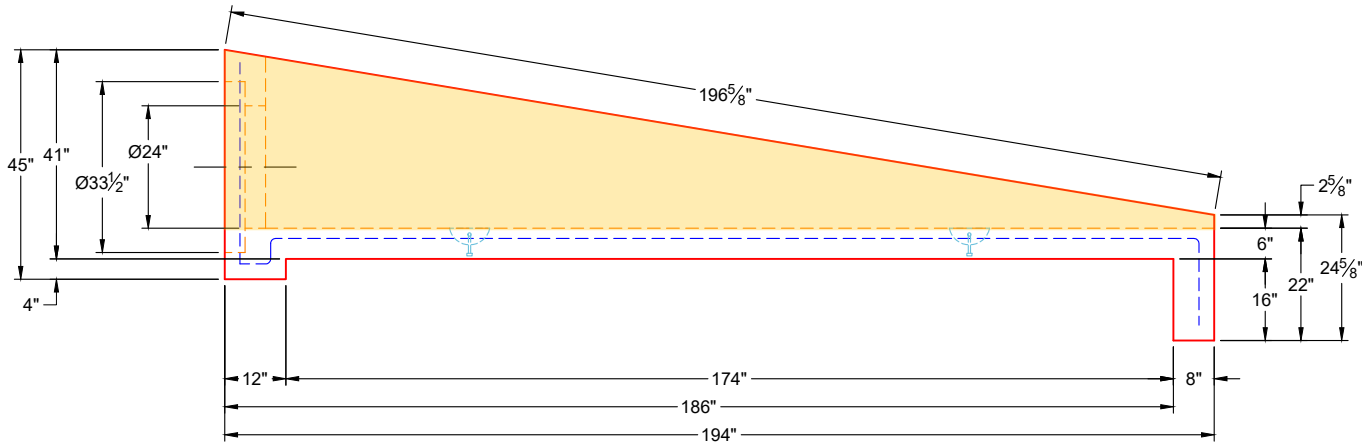


4 EA. CONAC 5CA14 A-ANCHORS FOR PLANT & FIELD HANDLING

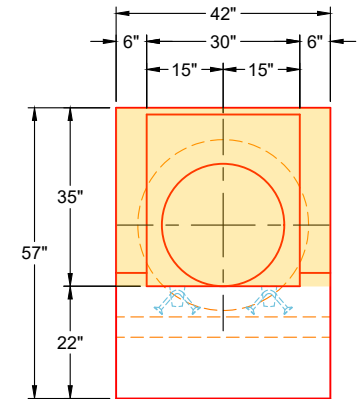
FRONT VIEW

GENERAL NOTES:


1. MANUFACTURED PER TDOT D-PE-24A & D-PE-24B SPECS
2. CONCRETE: 5,000 PSI OR GREATER AT 28 DAYS
3. REINFORCEMENT: PER TDOT STANDARD DRAWINGS D-PE-24A & D-PE-24B
4. TOTAL WEIGHT: 8,645 LBS
 - FIRST POUR: 4,700 LBS
 - SECOND POUR: 3,945 LBS
5. 3 EA. STRUCTURAL STEEL GRATES (PER TDOT STANDARD DRAWING D-SEW-1A) SUPPLIED BY ICAST

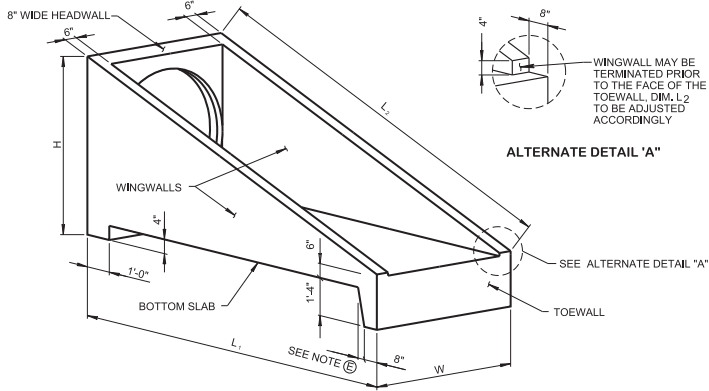


FRONT VIEW

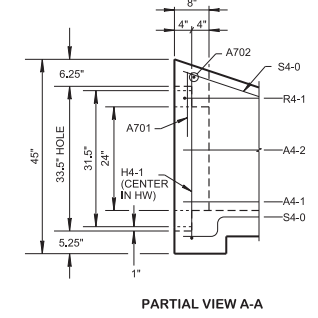
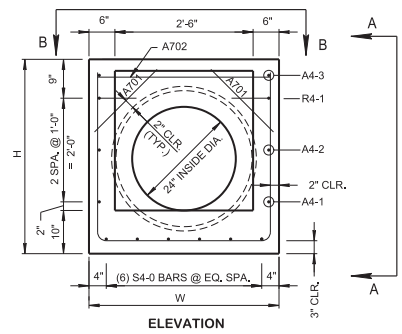


SIDE VIEW

PRODUCTION WORK ORDER		PRODUCT I.D.: HWTDOT6-1SA24	DESCRIPTION: 24" TDOT SAFETY SIDE DRAIN EW 6:1 (D-PE-24A)		
	QUALITY CONTROL CHECKLIST <input type="checkbox"/> ALL DIMENSIONS CORRECT. <input type="checkbox"/> LIFTERS INSTALLED. <input type="checkbox"/> OPENING CENTERED. <input type="checkbox"/> REINFORCING CORRECT. <input type="checkbox"/> SURFACE QUALITY ACCEPTABLE. <input type="checkbox"/> EDGES CHAMFERED. <input type="checkbox"/> ALL PATCHWORK ACCEPTABLE.	PRODUCT VIEW: RIGHT SIDE UP	CUSTOMER: CAPITAL CITY CONSTRUCTION SERVICES, LLC		
		PLANT: BEAVER DAM, KY	PROJECT: SAM RIDLEY PARKWAY ROADWAY IMPROVEMENTS		
		WEIGHT: 8,645 LBS	STRUCTURE: ICAST LI12		
		TOP SECTION JOINT: N / A	ORDER NO: 25-3264		
		BASE SECTION JOINT: N / A	PE: J.H. ROSS	DRAWING: K. CARDWELL	
		QC CHECK INITIALS:	DATE: 12/16/25	SCALE: NTS	PG. 1 OF 1

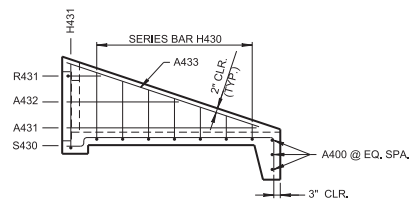
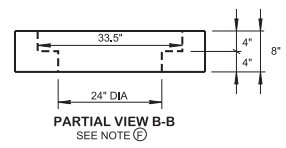


ALTERNATE DETAIL 'A'

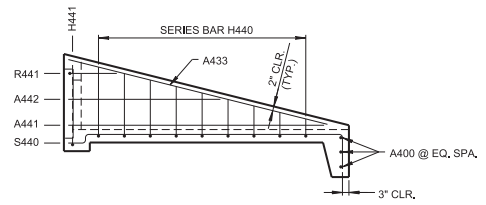


HEADWALL DETAILS

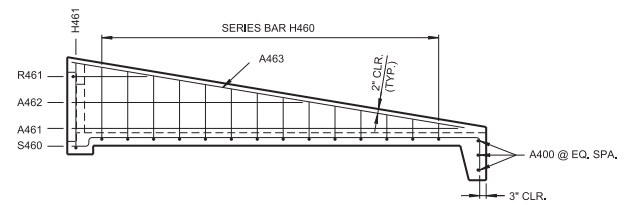
NOTE: INSTALL BARS A701 AT 45°
SEE GENERAL NOTES C & E.



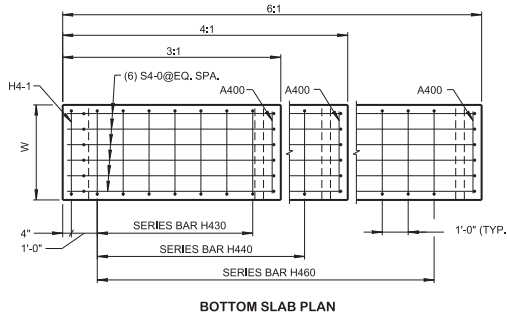
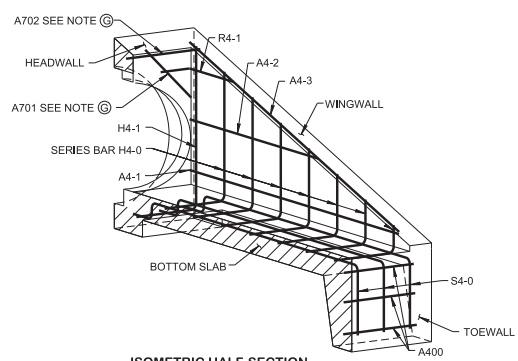
NOTE: A-BARS IN HEADWALL NOT SHOWN FOR CLARITY.



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



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



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

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. SEE STD. DWG. D-PE-24B.

(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:

611-07.57	24" ENDWALL (CROSS DRAIN) 3:1	EACH
611-07.58	24" ENDWALL (CROSS DRAIN) 4:1	EACH
611-07.59	24" 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.

- REV. 6-14-13: REVISED NOTEG. ADDED NOTE (D) AND (I)
- REV. 1-6-15: REVISED HOLE OPENING SIZE. ADDED STEPPED HOLE DETAIL.
- REV. 1-21-16: REVISED GENERAL NOTE (E)
- REV. 7-5-17: MODIFIED GENERAL NOTES (C) AND (I)
- REV. 06-28-19: ADJUSTED A-A, B-B AND ELEVATION VIEWS. RENAMED AND REDREW SHEET.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

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

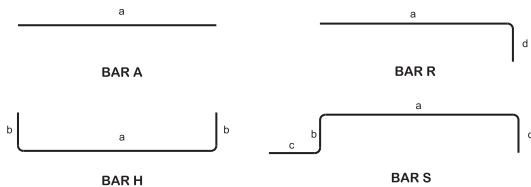
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NOT TO SCALE

BILL OF STEEL

CODE NO.	LOCATION	BAR SIZE	3:1 WINGWALL SLOPE						4:1 WINGWALL SLOPE						6:1 WINGWALL SLOPE					
			BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH	BENDING DIMENSIONS				NO. REQ'D	LENGTH
			a	b	c	d			a	b	c	d			a	b	c	d		
A400	TOEWALL	4	3'-2"	-	-	-	3	3'-2"	3'-2"	-	-	-	3	3'-2"	3'-2"	-	-	-	3	3'-2"
A431	WINGWALLS	4	7'-4"	-	-	-	2	7'-4"	-	-	-	-	-	-	-	-	-	-	-	-
A432	WINGWALLS	4	4'-4"	-	-	-	2	4'-4"	-	-	-	-	-	-	-	-	-	-	-	-
A433	WINGWALLS	4	7'-10"	-	-	-	2	7'-10"	-	-	-	-	-	-	-	-	-	-	-	-
A441	WINGWALLS	4	-	-	-	-	-	-	9'-10"	-	-	-	2	9'-10"	-	-	-	-	-	-
A442	WINGWALLS	4	-	-	-	-	-	-	5'-10"	-	-	-	2	5'-10"	-	-	-	-	-	-
A443	WINGWALLS	4	-	-	-	-	-	-	10'-4"	-	-	-	2	10'-4"	-	-	-	-	-	-
A461	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	14'-11"	-	-	-	2	14'-11"
A462	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	8'-11"	-	-	-	2	8'-11"
A463	WINGWALLS	4	-	-	-	-	-	-	-	-	-	-	-	-	15'-4"	-	-	-	2	15'-4"
A701	HEADWALL	7	1'-8"	-	-	-	2	1'-8"	1'-8"	-	-	-	2	1'-8"	1'-8"	-	-	-	2	1'-8"
A702	HEADWALL	7	3'-2"	-	-	-	1	3'-2"	3'-2"	-	-	-	1	3'-2"	3'-2"	-	-	-	1	3'-2"
SERIES H430	BOTTOM SLAB & WINGWALL	4	3'-2"	*	-	-	1	43'-9"	-	-	-	-	-	-	-	-	-	-	-	-
			* DIMENSION "b" VARIES FROM 2'-6 1/2" TO 0'-6 1/2" IN INCREMENTS OF 0'-4" (7 BARS)																	
H431	BOTTOM SLAB & HEADWALL	4	3'-2"	3'-2 1/2"	-	-	1	9'-7"	-	-	-	-	-	-	-	-	-	-	-	-
SERIES H440	BOTTOM SLAB & WINGWALL	4	-	-	-	-	-	-	3'-2"	*	-	-	1	58'-3 1/4"	-	-	-	-	-	-
			* DIMENSION "b" VARIES FROM 2'-7 1/2" TO 0'-7 1/2" IN INCREMENTS OF 0'-2" (9 BARS)																	
H441	BOTTOM SLAB & HEADWALL	4	-	-	-	-	-	-	3'-2"	3'-2 1/2"	-	-	1	9'-7 1/4"	-	-	-	-	-	-
SERIES H460	BOTTOM SLAB & WINGWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	3'-2"	*	-	-	1	91'-7"
			* DIMENSION "b" VARIES FROM 2'-9 1/4" TO 0'-7 1/4" IN INCREMENTS OF 0'-2" (14 BARS)																	
H461	BOTTOM SLAB & HEADWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	3'-2"	3'-3 1/4"	-	-	1	9'-8 1/2"
R431	WINGWALL & HEADWALL	4	1'-4"	0'-8"	-	-	2	2'-0"	-	-	-	-	-	-	-	-	-	-	-	-
R441	WINGWALL & HEADWALL	4	-	-	-	-	-	-	1'-10"	0'-8"	-	-	2	2'-6"	-	-	-	-	-	-
R461	WINGWALL & HEADWALL	4	-	-	-	-	-	-	-	-	-	-	-	2'-11"	0'-8"	-	-	2	3'-7"	
S430	BOTTOM SLAB & TOEWALL	4	7'-4 1/2"	0'-4 1/2"	0'-8"	1'-5"	6	9'-10"	-	-	-	-	-	-	-	-	-	-	-	-
S440	BOTTOM SLAB & TOEWALL	4	-	-	-	-	-	-	9'-11 1/2"	0'-4 1/2"	0'-8"	1'-5"	5	12'-5"	-	-	-	-	-	-
S460	BOTTOM SLAB & TOEWALL	4	-	-	-	-	-	-	-	-	-	-	-	-	15'-1 1/2"	0'-4 1/2"	0'-8"	1'-5"	6	17'-7"

REINFORCING STEEL LEGEND



REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR.
STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

PRECAST NOTES

PRECAST UNITS:

THE CONTRACTOR MAY, WITH PERMISSION FROM THE ENGINEER, SUBSTITUTE PRECAST ENDWALLS FOR CAST-IN-PLACE ENDWALLS PROVIDED THAT:

- ① APPROPRIATE SIZING AND LOCATION OF THE LIFTING INSERTS SHALL BE THE RESPONSIBILITY OF THE FABRICATOR TO ASSURE BALANCED HANDLING DURING INSTALLATION OF THE PRECAST ENDWALL.
- ② THE CONTRACTOR TO PATCH ALL LIFTING INSERT HOLES AND PLACE A MINIMUM OF ONE (1) INCH OF COVER OVER THE HARDWARE OF THESE DEVICES ON BOTH TOP AND BOTTOM SURFACES.
- ③ PAYMENT FOR PRECAST ENDWALLS BASED ON THE QUANTITIES FOR CAST-IN-PLACE ENDWALLS IS ACCEPTABLE.
- ④ PRECAST ENDWALL UNITS WHICH ARE DAMAGED DURING SHIPMENT OR INSTALLATION WILL BE REJECTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE THE DAMAGED ENDWALL UNITS AT HIS OWN EXPENSE.
- ⑤ PIPE OPENINGS FOR HEADWALLS ARE BASED ON REINFORCED CONCRETE PIPE WITH TYPE "B" WALL THICKNESS (AASHTO M170).
- ⑥ ADDITIONAL REINFORCING STEEL NECESSARY TO MAINTAIN THE INTEGRITY OF THE STRUCTURE DURING HANDLING AND PLACEMENT SHALL BE THE RESPONSIBILITY OF THE FABRICATOR.

CONCRETE: F_c=4,500 POUNDS PER SQUARE INCH MINIMUM AT 28 DAYS.
REINFORCING STEEL: ASTM A615, F_y=60,000 POUNDS PER SQUARE INCH.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
STANDARD DRAWING
DEPARTMENT OF TRANSPORTATION

TYPE "U"
CROSS DRAIN ENDWALL
FOR 24" PIPE,
BILL OF STEEL AND
PRECAST NOTES

03-01-2012

D-PE-24B