



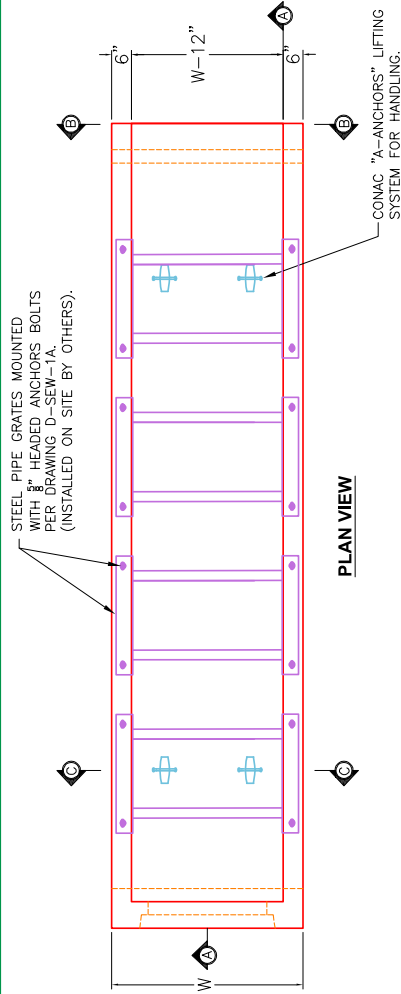
Structure ID: HW 16 (14)

P1 HWTDOT3-1TU24

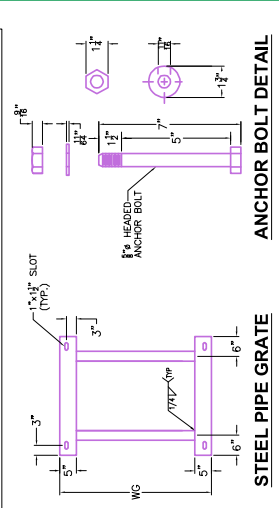
24" - HW TDOT 3:1 Type U Cross Drain Endwall F/F

GENERAL NOTES

- DRAWING TO BE USED FOR ALL 15" THROUGH 48" SIDE DRAIN CONCRETE ENDWALLS.
- MANUFACTURING, FOR CROSS DRAINS ONLY.
- CONCRETE: $F_c = 4,500$ PSI @ 28 DAYS.
- REINFORCING STEEL: ASTM A615, $F_y = 60,000$ PSI. SEE STD. DWGS. D-PE-15A, D-PE-18, D-PE-24A, D-PE-30A, D-PE-36A, D-PE-42A & D-PE-48A FOR BILL OF STEEL.
- SPlicing OF REINFORCEMENT IS ACCEPTABLE PROVIDED THAT A MINIMUM 21" SPlice LENGTH IS USED.
- APPROPRIATE SIZING AND LOCATIONS OF THE LIFTING INSERTS WILL BE THE RESPONSIBILITY OF INFRASTRUCTURE PRECAST, INC.
- LIFTING INSERTS SHALL BE BROUGHT OUT TO THE CONTRACTOR TO BE BROUGHT OUT PER TO THE REQUIREMENT.
- DIAMETRIAL AND REINFORCING TOLERANCES WILL BE AS SHOWN IN STANDARD OPERATING PROCEDURE (SOP) 5.3.
- PIPE OPENINGS FOR HEADWALLS ARE BASED ON REINFORCED CONCRETE PIPE WITH TYPE "B" WALL AS PER AMERICAN CONCRETE PIPE ASSOCIATION (ACPA). OUTSIDE DIAMETER + 3"-4". TOE WALL BACK SLOPE MAY BE CONSTRUCTED VARIABLE FROM VERTICAL UP TO 15'.

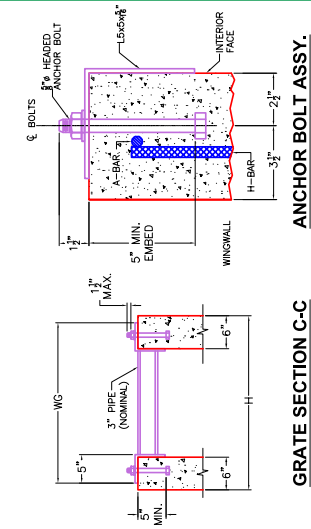


PLAN VIEW



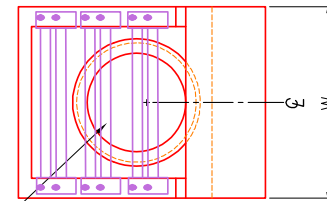
STEEL PIPE GRATE

ANCHOR BOLT DETAIL

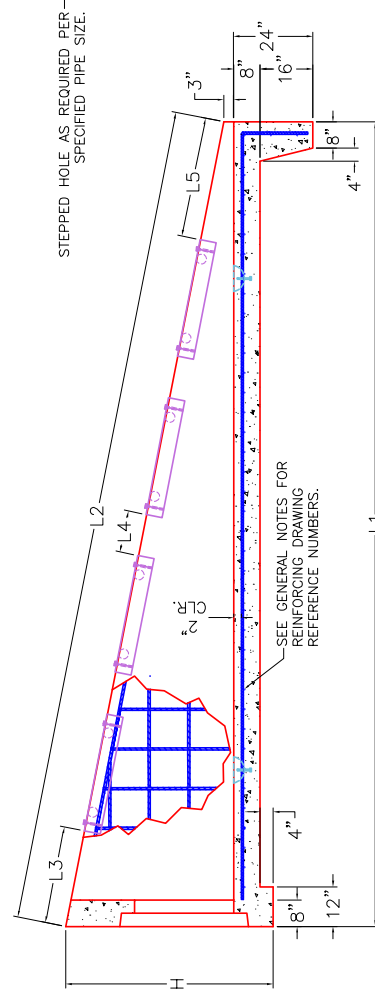


GRATE SECTION C-C

ANCHOR BOLT ASSY.



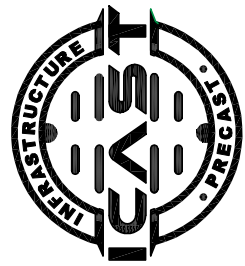
ELEVATION B-B



SECTION A-A

SIDE DRAIN DIA. (D)	CONCRETE ENDWALL DIMENSIONS					GRATE DISPLACEMENT DIMENSIONS					STRUCTURAL STEEL GRATE DIMENSIONS AND QUANTITY		STRUCT. STEEL		WEIGHT LBS.
	H	W	L1	L2	L3	L4	L5	WG	NO. REQ'D.	LBS.	LBS.	LBS.			
15"	2'-11"	2'-8"	11'-2"	11'-3 1/2"	2'-2"	1'-0"	2'-1 1/2"	2'-5"	2	172	4,737				
18"	3'-2"	2'-11"	12'-8"	12'-10 1/2"	10 1/2"	1'-0"	1'-0"	2'-8"	3	269	5,833				
24"	3'-9"	3'-6"	16'-2"	16'-4 1/2"	2'-2"	1'-0"	3'-2 1/2"	3'-3"	3	296	8,848				
30"	4'-5"	4'-1"	20'-2"	20'-5 1/2"	2'-2"	1'-0"	3'-3 1/2"	3'-10"	4	694	12,880				
36"	5'-0"	4'-8"	23'-8"	23'-11 1/2"	2'-2"	1'-0"	2'-9 1/2"	4'-5"	5	975	17,186				
42"	5'-6"	5'-3"	26'-8"	27'-0 1/2"	2'-2"	1'-0"	1'-10 1/2"	5'-0"	6	1,300	21,532				
48"	6'-1"	5'-10"	30'-2"	30'-7"	2'-2"	1'-0"	1'-5"	5'-7"	7	1,669	27,092				

PIPE DIA.	CONCRETE ENDWALL DIMENSIONS					STRUCTURAL STEEL GRATE DIMENSIONS AND QUANTITY		STRUCT. STEEL		STEEL BAR WEIGHT	
	H	W	L1	L2	L3	L4	L5	WG	NO. REQ'D.	LBS.	LBS.
18"	3'-1 1/4"	3'-1"	26'-0"	24'-1"	2'-1"	3'-0"	2'-10"	5	480	256	11,119



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TDOT TYPE "SAFETY" SIDE DRAIN ENDWALL WITH STEEL PIPE GRATES FOR 15" THROUGH 48" PIPES (6:1 & 12:1 SLOPES)
 DRAWING NO.: ET-TDOT-200 DATE: 10-02-25
 REVIEWED BY: J.H. ROSS, PE DRAWN BY: N. RICHARDS
 WEB: WWW.ICASTING.COM SCALE: NTS