

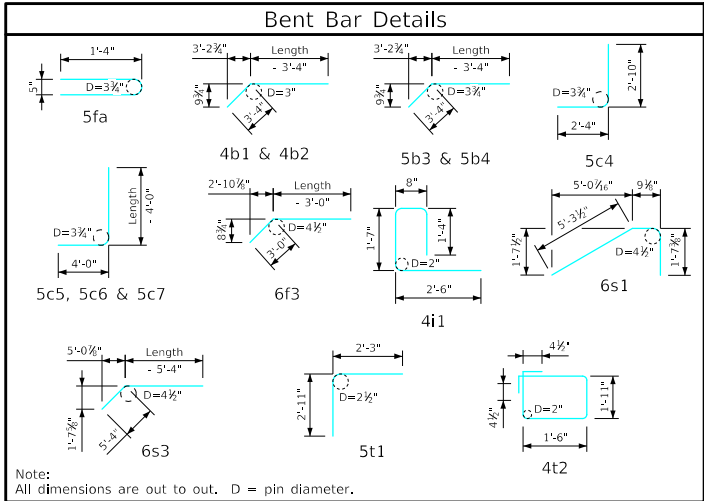
Reinforcing for One Headwall 0° Skew													
Location	Shape	14' x 11'-10"				12' x 11'-10"				12' x 10'-10"			
		Bar No.	Length	Wt.	Bar No.	Length	Wt.	Bar No.	Length	Wt.			
Fence Anchor (Galv.)		5fa	2	2'-10"	6	5fa	2	2'-10"	6	5fa	2	2'-10"	6
Wingwall, B.F.H.		4b1	4	39'-8"	106	4b1	4	39'-8"	106	4b1	4	36'-7"	98
Wingwall, B.F.H.		4b2	20 Var.	2 Each 10'-5 to 38'-3"	325	4b2	20 Var.	2 Each 10'-5 to 38'-3"	325	4b2	18 Var.	2 Each 10'-5 to 35'-2"	274
Wingwall, F.F.H.		5b3	4	39'-9"	166	5b3	4	39'-9"	166	5b3	4	36'-8"	153
Wingwall, F.F.H.		5b4	20 Var.	2 Each 10'-6 to 38'-4"	509	5b4	20 Var.	2 Each 10'-6 to 38'-4"	509	5b4	18 Var.	2 Each 10'-6 to 35'-3"	429
Wingwall, F.F.V.		4c1	74 Var.	2 Each 2'-10 to 14'-5"	426	4c1	74 Var.	2 Each 2'-10 to 14'-5"	426	4c1	68 Var.	2 Each 2'-10 to 13'-6"	371
Wingwall, F.F.V.		4c2	32 Var.	2 Each 9'-6 to 14'-4"	255	4c2	32 Var.	2 Each 9'-6 to 14'-4"	255	4c2	26 Var.	2 Each 9'-6 to 13'-4"	198
Wingwall, F.F.V.		4c3	2	13'-7"	18	4c3	2	13'-7"	18	4c3	2	12'-7"	17
Wingwall, B.F.V.		5c4	2	5'-2"	11	5c4	2	5'-2"	11	5c4	2	5'-2"	11
Wingwall, B.F.V.		5c5	72 Var.	2 Each 7'-2 to 18'-5"	961	5c5	72 Var.	2 Each 7'-2 to 18'-5"	961	5c5	66 Var.	2 Each 7'-2 to 17'-6"	849
Wingwall, B.F.V.		5c6	46	10'-6"	504	5c6	46	10'-6"	504	5c6	40	10'-6"	438
Wingwall, B.F.V.		5c7	2	17'-7"	37	5c7	2	17'-7"	37	5c7	2	16'-7"	35
Apron, Longit., Bott.		4d1	10	38'-9"	259	4d1	8	38'-9"	207	4d1	8	35'-9"	191
Apron, Longit., Bott.		4d2	6	39'-10"	160	4d2	6	39'-10"	160	4d2	6	36'-9"	147
Apron, Longit., Bott.		4d3	12 Var.	4'-8 to 34'-8"	158	4d3	12 Var.	6'-8 to 36'-8"	174	4d3	10 Var.	2 Each 9'-4 to 33'-4"	143
Apron, Longit., Top		6f1	16	38'-9"	931	6f1	14	38'-9"	815	6f1	14	35'-9"	752
Apron, Longit., Top		6f2	16 Var.	2 Each 5'-8 to 33'-8"	473	6f2	16 Var.	2 Each 5'-8 to 33'-8"	473	6f2	14 Var.	2 Each 6'-4 to 30'-4"	386
Apron, Longit., Top		6f3	2	39'-4"	118	6f3	2	39'-4"	118	6f3	2	36'-3"	109
Parapet, Vertical		4i1	29	6'-1"	118	4i1	25	6'-1"	102	4i1	25	6'-1"	102
Parapet, Horizontal		7j1	4	15'-8"	213	7j1	4	13'-8"	112	7j1	4	13'-6"	110
Apron, Trans., Top		6m1	48 Var.	15'-10 to 33'-5"	1775	6m1	48 Var.	13'-10 to 31'-5"	1631	6m1	44 Var.	13'-8 to 29'-9"	1435
Apron, Trans., Top		6m2	1	32'-1"	48	6m2	1	30'-1"	45	6m2	1	28'-7"	43
Apron, Trans., Bott.		6m3	37 Var.	9'-6 to 27'-6"	1028	6m3	37 Var.	7'-6 to 25'-6"	917	6m3	34 Var.	7'-6 to 24'-0"	804
Paving Notch, Horizontal		5p1	4	32'-1"	134	5p1	4	30'-1"	126	5p1	4	28'-7"	119
Paving Notch, Horizontal		5p2	3	31'-5"	98	5p2	3	29'-5"	92	5p2	3	27'-11"	87
Wing Slope, Both F.		6s1	4	7'-8"	46	6s1	4	7'-8"	46	6s1	4	7'-8"	46
Wing Slope, Both F.		6s2	4	35'-11"	216	6s2	4	35'-11"	216	6s2	4	32'-8"	196
Wing Slope, F.F.		6s3	2	41'-7"	132	6s3	2	41'-7"	132	6s3	2	38'-4"	115
Paving Notch, Vertical		5t1	26	5'-2"	140	5t1	24	5'-2"	129	5t1	23	5'-2"	124
Paving Notch, Hoops		4t2	26	7'-7"	132	4t2	24	7'-7"	122	4t2	23	7'-7"	117
Estimated Quantities One Headwall	Reinf. Steel	9503 LB				8941 LB				7905 LB			
	Concrete	68.9 CY				65.3 CY				56.0 CY			
	Parapet Δ	2.3				2.2				2.1			
	Wingwalls	21.2				21.2				16.6			
	Apron	45.4				41.9				37.3			

Notes:  
 Weight of bars over 40'-0" long includes an allowance of 2'-5" for lap.  
 Lengths shown for bars over 40'-0" long do not include lap.

Δ includes top of wingwall quantities.

**Headwall Notes:**

- See Sheet PPT G1-20 for General Information, Specifications, and Design Stresses.
- This headwall is based on a 3:1 slope normal to centerline of roadway.
- The sides of the apron are to be formed to ensure correct line and grade.
- All slab and apron reinforcing steel is to be supported by bar chairs at intervals of not more than 3'-0" in either direction as outlined in the Standard Specifications.
- Clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown. Clearance to the bottom ends of vertical bars shall be 3 inches.
- Concrete quantities are estimated from back of parapet.
- Horizontal tails of bars "b" and "s" estimated to extend 2'-5" beyond back of parapet (into end of barrel). Longitudinal bars "d" and "f" estimated to project into end section of barrel a minimum of 2'-5" beyond back of parapet. The "Length" column reflects total number of feet necessary to meet these requirements.
- Dimensions are in feet and inches unless otherwise noted or shown.



LATEST REVISION DATE	APPROVED BY BRIDGE ENGINEER	<b>IOWADOT Highway Division</b>	
		Precast Standard Design - Walkways and Trails	
		<b>Precast Reinforced Concrete Pedestrian Tunnel</b>	
		August, 2020	
		Flared Wing Headwalls 0° Skew	PPT-FWH 0-4-20