



Reinforcing for One Headwall 0° Skew													
Location	Shape	14' x 12'-4"				12' x 12'-4"				12' x 11'-4"			
		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	2	41'-2"	58	4b1	2	41'-2"	58	4b1	2	38'-1"	51
Wingwall, B.F.H.		4b2	20 Var.	2 Each 11'-11 to 39'-9	345	4b2	20 Var.	2 Each 11'-11 to 39'-9	345	4b2	18 Var.	2 Each 11'-11 to 36'-8	292
Wingwall, F.F.H.		5b3	2	41'-3"	91	5b3	2	41'-3"	91	5b3	2	38'-2"	80
Wingwall, F.F.H.		5b4	22 Var.	2 Each 8'-10 to 39'-10	558	5b4	22 Var.	2 Each 8'-10 to 39'-10	558	5b4	20 Var.	2 Each 8'-10 to 36'-9	475
Wingwall, F.F.V.		4c1	76 Var.	2 Each 2'-10 to 14'-10	448	4c1	76 Var.	2 Each 2'-10 to 14'-10	448	4c1	70 Var.	2 Each 2'-10 to 13'-10	390
Wingwall, F.F.V.		4c2	36 Var.	2 Each 9'-6 to 15'-0	295	4c2	36 Var.	2 Each 9'-6 to 15'-0	295	4c2	30 Var.	2 Each 9'-6 to 14'-0	235
Wingwall, F.F.V.		4c3	2	13'-9"	18	4c3	2	13'-9"	18	4c3	2	15'-2"	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	74 Var.	2 Each 7'-2 to 18'-10	1003	5c5	74 Var.	2 Each 7'-2 to 18'-10	1003	5c5	68 Var.	2 Each 7'-2 to 17'-10	887
Wingwall, B.F.V.		6c6	50	10'-6"	789	6c6	50	10'-6"	789	6c6	44	10'-6"	694
Wingwall, B.F.V.		6c7	2	17'-9"	53	6c7	2	17'-9"	53	6c7	2	16'-9"	50
Apron, Longit., Bott.		4d1	10	40'-3"	285	4d1	8	40'-3"	228	4d1	8	37'-3"	199
Apron, Longit., Bott.		4d2	6	41'-5"	176	4d2	6	41'-5"	176	4d2	6	38'-4"	154
Apron, Longit., Bott.		4d3	12 Var.	2 Each 6'-2 to 36'-2	170	4d3	12 Var.	2 Each 8'-2 to 38'-2	186	4d3	12 Var.	2 Each 4'-10 to 34'-10	159
Apron, Longit., Top		6f1	16	40'-3"	1025	6f1	14	40'-3"	897	6f1	14	37'-3"	783
Apron, Longit., Top		6f2	16 Var.	2 Each 7'-2 to 35'-2	509	6f2	16 Var.	2 Each 7'-2 to 35'-2	509	6f2	14 Var.	2 Each 7'-10 to 31'-10	417
Apron, Longit., Top		6f3	2	40'-11"	130	6f3	2	40'-11"	130	6f3	2	37'-10"	114
Parapet, Vertical		4i1	29	6'-1"	118	4i1	25	6'-1"	102	4i1	25	6'-1"	102
Parapet, Horizontal		9j1	4	15'-8"	213	7j1	4	13'-8"	112	7j1	4	13'-6"	110
Apron, Trans., Top		6m1	50 Var.	15'-10 to 34'-2	1878	6m1	50 Var.	13'-10 to 32'-2	1727	6m1	46 Var.	13'-8 to 30'-6	1526
Apron, Trans., Top		6m2	1	32'-10"	49	6m2	1	30'-10"	46	6m2	1	29'-4"	44
Apron, Trans., Bott.		6m3	38 Var.	9'-7 to 28'-1	1075	6m3	38 Var.	7'-7 to 26'-1	961	6m3	35 Var.	7'-7 to 24'-7	846
Paving Notch, Horizontal		5p1	4	32'-10"	137	5p1	4	30'-10"	129	5p1	4	29'-4"	122
Paving Notch, Horizontal		5p2	3	32'-2"	101	5p2	3	30'-2"	94	5p2	3	28'-8"	90
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	37'-6"	225	6s2	4	37'-6"	225	6s2	4	34'-3"	206
Wing Slope, F.F.		6s3	2	43'-2"	137	6s3	2	43'-2"	137	6s3	2	39'-11"	120
Paving Notch, Vertical		5t1	26	5'-2"	140	5t1	25	5'-2"	135	5t1	23	5'-2"	124
Paving Notch, Hoops		4t2	26	7'-7"	132	4t2	25	7'-7"	127	4t2	23	7'-7"	117
Estimated Quantities One Headwall	Reinf. Steel	10,221 LB				9642 LB				8467 LB			
	Concrete	Parapet Δ	1.9			1.8				1.7			
		Wingwalls	23.2	72.9 CY		23.2	69.2 CY			18.3		59.5 CY	
		Apron *	47.8			44.2				39.5			

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.
* Assumes apron and floor are equal thickness, adjust concrete quantities for transition where apron and floor thickness are not equal.

Headwall Notes:

- See Sheet PT 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" & "s" estimated to extend 2'-5" beyond back of parapet (into end of barrel). Longitudinal bars "d" and "m" 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	 Cast-In-Place Standard Design - Walkways and Trails Reinforced Concrete Pedestrian Tunnel August, 2020	Flared Wing Headwalls 0° Skew	PT-FWH 0-4-20
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