

Bill of Reinforcing for One Headwall 15° Skew Span x Culvert Height

Table with columns for Location, Shape, Bar, No., Length, Wt. and 10 sub-columns for different dimensions: 16' x 14', 16' x 13', 16' x 12', 16' x 11', 16' x 10', 16' x 9', 16' x 8', 16' x 7'. Includes a summary row at the bottom for Reinf. Steel, Concrete, and Wingwalls.

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.
(A) - Indicates bar located at acute corner.
(O) - Indicates bar located at obtuse corner.
Refer to Sheet PWH 15-1-20 for acute and obtuse corner locations.

Note: Weight of bars over 40'-0" long include an allowance of 2'-5" for lap.

Bent Bar Details

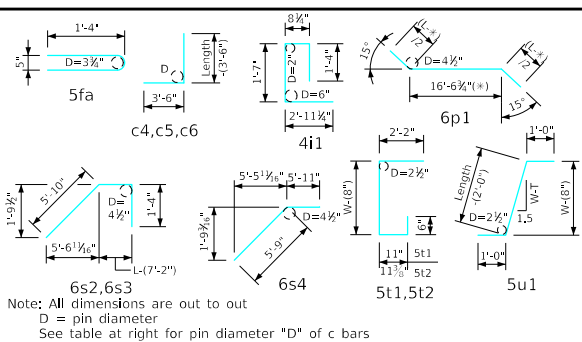


Table for c Bar Pin Diameter: Bar Size (5, 6, 7) vs Diameter (3 3/4, 4 1/2, 5 1/2).

Headwall Notes:

- 1. This headwall is based on a 3:1 slope normal to centerline of roadway.
2. The sides of the apron are to be formed to ensure correct line and grade.
3. All 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.
4. 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.
5. Concrete quantities are estimated from back of parapet.
6. Horizontal tails of bars "b" & "s" estimated to extend 2'-5" beyond back of parapet (into end of barrel). Longitudinal bars "4d1" and "6f1" 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.
7. Dimensions are in feet and inches unless otherwise noted.

IOWA DOT Highway Division
Standard Design - Single Reinforced Concrete Box Culverts
Parallel Wing Headwalls
July, 2020
Quantity Tabulation
16'-0" Span
15° Skew
PWH 15-5-20
SHEET 1 OF 2