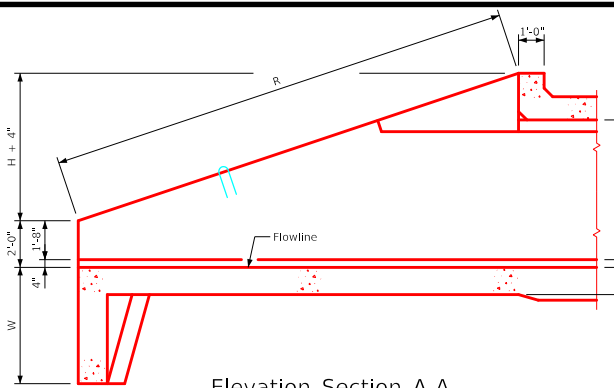


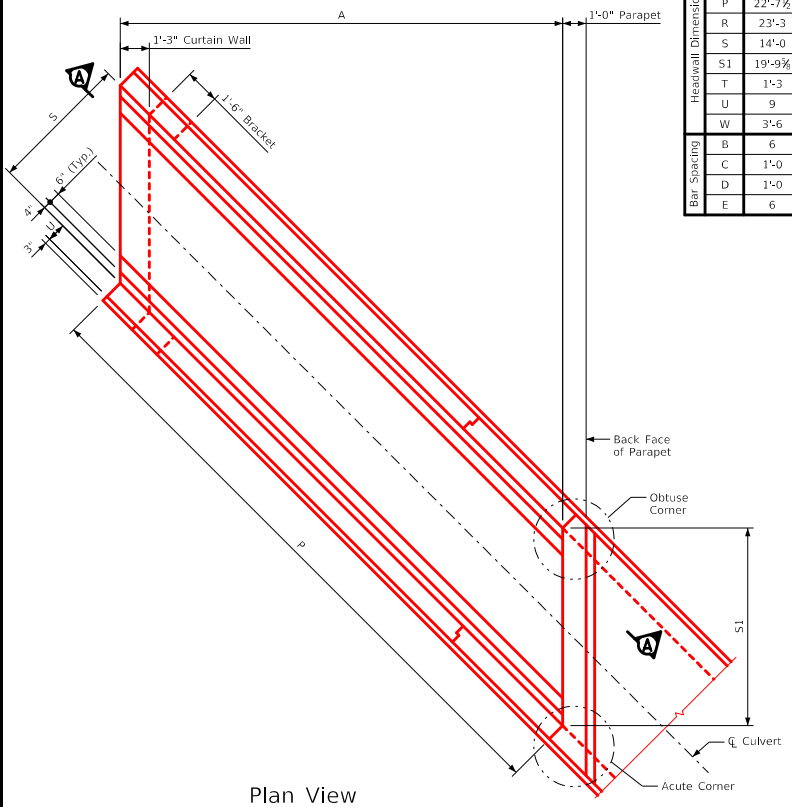
ENGLISHRFDDESIGNEDSINGLECULVERTS.DGN - PWH 45-1-20 - THIS SHEET ISSUED 07-2020.



Elevation Section A-A

|       |                     | Dimension Table |            |            |            |             |            |            |             |             |            |             |            |            |            |            |             |            |            |             |             |        |   |
|-------|---------------------|-----------------|------------|------------|------------|-------------|------------|------------|-------------|-------------|------------|-------------|------------|------------|------------|------------|-------------|------------|------------|-------------|-------------|--------|---|
| S x H |                     | 16' x 14'       | 16' x 13'  | 16' x 12'  | 16' x 11'  | 16' x 10'   | 16' x 9'   | 16' x 8'   | 16' x 7'    | 16' x 6'    | 16' x 5'   | 16' x 4'    | 14' x 14'  | 14' x 13'  | 14' x 12'  | 14' x 11'  | 14' x 10'   | 14' x 9'   | 14' x 8'   | 14' x 7'    | 14' x 6'    | S x H  |   |
| A     | Headwall Dimensions | 43'-0"          | 40'-0"     | 37'-0"     | 34'-0"     | 31'-0"      | 28'-0"     | 25'-0"     | 22'-0"      | 19'-0"      | 16'-0"     | 13'-0"      | 43'-0"     | 40'-0"     | 37'-0"     | 34'-0"     | 31'-0"      | 28'-0"     | 25'-0"     | 22'-0"      | 19'-0"      | 16'-0" | A |
| H     |                     | 14'-0"          | 13'-0"     | 12'-0"     | 11'-0"     | 10'-0"      | 9'-0"      | 8'-0"      | 7'-0"       | 6'-0"       | 5'-0"      | 4'-0"       | 14'-0"     | 13'-0"     | 12'-0"     | 11'-0"     | 10'-0"      | 9'-0"      | 8'-0"      | 7'-0"       | 6'-0"       | H      |   |
| P     |                     | 60'-9 1/2"      | 56'-6 1/2" | 52'-3 1/2" | 48'-1"     | 43'-10 1/2" | 39'-7 1/2" | 35'-4 1/2" | 31'-1 1/2"  | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 60'-9 1/2" | 56'-6 1/2" | 52'-3 1/2" | 48'-1"     | 43'-10 1/2" | 39'-7 1/2" | 35'-4 1/2" | 31'-1 1/2"  | 26'-10 1/2" | P      |   |
| R     |                     | 62'-5 1/2"      | 58'-1 1/2" | 53'-9 1/2" | 49'-4 1/2" | 45'-0 1/2"  | 40'-8 1/2" | 36'-3 1/2" | 31'-11 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 62'-5 1/2" | 58'-1 1/2" | 53'-9 1/2" | 49'-4 1/2" | 45'-0 1/2"  | 40'-8 1/2" | 36'-3 1/2" | 31'-11 1/2" | 27'-7 1/2"  | R      |   |
| S     |                     | 16'-0"          | 16'-0"     | 16'-0"     | 16'-0"     | 16'-0"      | 16'-0"     | 16'-0"     | 16'-0"      | 16'-0"      | 16'-0"     | 16'-0"      | 14'-0"     | 14'-0"     | 14'-0"     | 14'-0"     | 14'-0"      | 14'-0"     | 14'-0"     | 14'-0"      | 14'-0"      | S      |   |
| S1    |                     | 22'-7 1/2"      | 22'-7 1/2" | 22'-7 1/2" | 22'-7 1/2" | 22'-7 1/2"  | 22'-7 1/2" | 22'-7 1/2" | 22'-7 1/2"  | 22'-7 1/2"  | 22'-7 1/2" | 22'-7 1/2"  | 19'-9 1/2" | 19'-9 1/2" | 19'-9 1/2" | 19'-9 1/2" | 19'-9 1/2"  | 19'-9 1/2" | 19'-9 1/2" | 19'-9 1/2"  | 19'-9 1/2"  | S1     |   |
| T     |                     | 1'-4"           | 1'-4"      | 1'-4"      | 1'-4"      | 1'-4"       | 1'-4"      | 1'-4"      | 1'-4"       | 1'-4"       | 1'-4"      | 1'-4"       | 1'-3"      | 1'-3"      | 1'-3"      | 1'-3"      | 1'-3"       | 1'-3"      | 1'-3"      | 1'-3"       | 1'-3"       | 1'-3"  | T |
| U     |                     | 1'-1"           | 1'-1"      | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 9"          | 9"         | 9"          | 1'-1"      | 1'-1"      | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 9"          | 9"     | U |
| W     |                     | 5'-6"           | 5'-3"      | 5'-0"      | 4'-9"      | 4'-6"       | 4'-3"      | 4'-0"      | 3'-9"       | 3'-6"       | 3'-6"      | 3'-6"       | 5'-6"      | 5'-3"      | 5'-0"      | 4'-9"      | 4'-6"       | 4'-3"      | 4'-0"      | 3'-9"       | 3'-6"       | 3'-6"  | W |
| B     | Bar Spacing         | 1'-0"           | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 6"         | 6"          | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"  | B |
| C     |                     | 1'-0"           | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 9"         | 9"          | 9"          | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"      | 1'-0"       | 9"         | 9"         | 9"          | 1'-0"       | 1'-0"  | C |
| D     |                     | 6"              | 6"         | 6"         | 6"         | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"      | 1'-0"       | 6"         | 6"         | 6"         | 6"         | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"  | D |
| E     |                     | 6"              | 6"         | 6"         | 6"         | 6"          | 6"         | 6"         | 6"          | 6"          | 6"         | 6"          | 6"         | 6"         | 6"         | 6"         | 6"          | 6"         | 6"         | 6"          | 6"          | 6"     | E |

|       |                     | Dimension Table |             |             |             |             |             |             |             |             |             |             |            |            |             |            |            |             |             |            |             |            |    |
|-------|---------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|-------------|------------|------------|-------------|-------------|------------|-------------|------------|----|
| S x H |                     | 14' x 5'        | 14' x 4'    | 12' x 12'   | 12' x 11'   | 12' x 10'   | 12' x 9'    | 12' x 8'    | 12' x 7'    | 12' x 6'    | 12' x 5'    | 12' x 4'    | 10' x 12'  | 10' x 11'  | 10' x 10'   | 10' x 9'   | 10' x 8'   | 10' x 7'    | 10' x 6'    | 10' x 5'   | 10' x 4'    | S x H      |    |
| A     | Headwall Dimensions | 16'-0"          | 13'-0"      | 37'-0"      | 34'-0"      | 31'-0"      | 28'-0"      | 25'-0"      | 22'-0"      | 19'-0"      | 16'-0"      | 13'-0"      | 37'-0"     | 34'-0"     | 31'-0"      | 28'-0"     | 25'-0"     | 22'-0"      | 19'-0"      | 16'-0"     | 13'-0"      | 16'-0"     | A  |
| H     |                     | 5'-0"           | 4'-0"       | 12'-0"      | 11'-0"      | 10'-0"      | 9'-0"       | 8'-0"       | 7'-0"       | 6'-0"       | 5'-0"       | 4'-0"       | 12'-0"     | 11'-0"     | 10'-0"      | 9'-0"      | 8'-0"      | 7'-0"       | 6'-0"       | 5'-0"      | 4'-0"       | 5'-0"      | H  |
| P     |                     | 22'-7 1/2"      | 18'-4 1/2"  | 52'-3 1/2"  | 48'-1"      | 43'-10 1/2" | 39'-7 1/2"  | 35'-4 1/2"  | 31'-1 1/2"  | 26'-10 1/2" | 22'-7 1/2"  | 18'-4 1/2"  | 52'-3 1/2" | 48'-1"     | 43'-10 1/2" | 39'-7 1/2" | 35'-4 1/2" | 31'-1 1/2"  | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 22'-7 1/2" | P  |
| R     |                     | 23'-3"          | 18'-10 1/2" | 53'-9 1/2"  | 49'-4 1/2"  | 45'-0 1/2"  | 40'-8 1/2"  | 36'-3 1/2"  | 31'-11 1/2" | 27'-7 1/2"  | 23'-3"      | 18'-10 1/2" | 53'-9 1/2" | 49'-4 1/2" | 45'-0 1/2"  | 40'-8 1/2" | 36'-3 1/2" | 31'-11 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 23'-3"     | R  |
| S     |                     | 14'-0"          | 14'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 12'-0"      | 10'-0"     | 10'-0"     | 10'-0"      | 10'-0"     | 10'-0"     | 10'-0"      | 10'-0"      | 10'-0"     | 10'-0"      | 10'-0"     | S  |
| S1    |                     | 19'-9 1/2"      | 19'-9 1/2"  | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 16'-11 1/2" | 14'-1 1/2" | 14'-1 1/2" | 14'-1 1/2"  | 14'-1 1/2" | 14'-1 1/2" | 14'-1 1/2"  | 14'-1 1/2"  | 14'-1 1/2" | 14'-1 1/2"  | 14'-1 1/2" | S1 |
| T     |                     | 1'-3"           | 1'-3"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-2"       | 1'-1"      | 1'-1"      | 1'-1"       | 1'-1"      | 1'-1"      | 1'-1"       | 1'-1"       | 1'-1"      | 1'-1"       | 1'-1"      | T  |
| U     |                     | 9"              | 9"          | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 9"          | 9"          | 9"          | 9"          | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 9"          | 9"          | 9"         | 9"          | 9"         | U  |
| W     |                     | 3'-6"           | 3'-6"       | 5'-0"       | 4'-9"       | 4'-6"       | 4'-3"       | 4'-0"       | 3'-9"       | 3'-6"       | 3'-6"       | 3'-6"       | 5'-0"      | 4'-9"      | 4'-6"       | 4'-3"      | 4'-0"      | 3'-9"       | 3'-6"       | 3'-6"      | 3'-6"       | 3'-6"      | W  |
| B     | Bar Spacing         | 6"              | 6"          | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 9"          | 9"          | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"      | 9"          | 9"         | B  |
| C     |                     | 1'-0"           | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 9"          | 9"          | 9"          | 1'-0"       | 1'-0"       | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"      | 9"         | 9"          | 9"          | 1'-0"      | 1'-0"       | 1'-0"      | C  |
| D     |                     | 1'-0"           | 1'-0"       | 6"          | 6"          | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 1'-0"       | 6"         | 6"         | 6"          | 6"         | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | D  |
| E     |                     | 6"              | 6"          | 6"          | 6"          | 6"          | 6"          | 6"          | 6"          | 6"          | 6"          | 6"          | 6"         | 6"         | 6"          | 6"         | 6"         | 6"          | 6"          | 6"         | 6"          | 6"         | E  |



Plan View

|       |                     | Dimension Table |            |            |             |             |            |             |            |             |             |            |             |            |             |            |             |            |             |            |             |            |    |
|-------|---------------------|-----------------|------------|------------|-------------|-------------|------------|-------------|------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|----|
| S x H |                     | 8' x 10'        | 8' x 9'    | 8' x 8'    | 8' x 7'     | 8' x 6'     | 8' x 5'    | 8' x 4'     | 6' x 8'    | 6' x 7'     | 6' x 6'     | 6' x 5'    | 6' x 4'     | 6' x 3'    | 5' x 6'     | 5' x 5'    | 5' x 4'     | 5' x 3'    | S x H       |            |             |            |    |
| A     | Headwall Dimensions | 31'-0"          | 28'-0"     | 25'-0"     | 22'-0"      | 19'-0"      | 16'-0"     | 13'-0"      | 25'-0"     | 22'-0"      | 19'-0"      | 16'-0"     | 13'-0"      | 10'-0"     | 19'-0"      | 16'-0"     | 13'-0"      | 10'-0"     | 19'-0"      | 16'-0"     | 13'-0"      | 10'-0"     | A  |
| H     |                     | 10'-0"          | 9'-0"      | 8'-0"      | 7'-0"       | 6'-0"       | 5'-0"      | 4'-0"       | 8'-0"      | 7'-0"       | 6'-0"       | 5'-0"      | 4'-0"       | 3'-0"      | 6'-0"       | 5'-0"      | 4'-0"       | 3'-0"      | 6'-0"       | 5'-0"      | 4'-0"       | 3'-0"      | H  |
| P     |                     | 43'-10 1/2"     | 39'-7 1/2" | 35'-4 1/2" | 31'-1 1/2"  | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 35'-4 1/2" | 31'-1 1/2"  | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 14'-1 1/2" | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 14'-1 1/2" | 26'-10 1/2" | 22'-7 1/2" | 18'-4 1/2"  | 14'-1 1/2" | P  |
| R     |                     | 45'-0 1/2"      | 40'-8 1/2" | 36'-3 1/2" | 31'-11 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 36'-3 1/2" | 31'-11 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 14'-6 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 14'-6 1/2" | 27'-7 1/2"  | 23'-3"     | 18'-10 1/2" | 14'-6 1/2" | R  |
| S     |                     | 8'-0"           | 8'-0"      | 8'-0"      | 8'-0"       | 8'-0"       | 8'-0"      | 8'-0"       | 6'-0"      | 6'-0"       | 6'-0"       | 6'-0"      | 6'-0"       | 6'-0"      | 5'-0"       | 5'-0"      | 5'-0"       | 5'-0"      | 5'-0"       | 5'-0"      | 5'-0"       | 5'-0"      | S  |
| S1    |                     | 11'-3 1/2"      | 11'-3 1/2" | 11'-3 1/2" | 11'-3 1/2"  | 11'-3 1/2"  | 11'-3 1/2" | 11'-3 1/2"  | 8'-5 1/2"  | 8'-5 1/2"   | 8'-5 1/2"   | 8'-5 1/2"  | 8'-5 1/2"   | 8'-5 1/2"  | 7'-0 1/2"   | 7'-0 1/2"  | 7'-0 1/2"   | 7'-0 1/2"  | 7'-0 1/2"   | 7'-0 1/2"  | 7'-0 1/2"   | 7'-0 1/2"  | S1 |
| T     |                     | 11"             | 11"        | 11"        | 11"         | 11"         | 11"        | 11"         | 11"        | 11"         | 11"         | 11"        | 11"         | 11"        | 11"         | 11"        | 11"         | 11"        | 11"         | 11"        | 11"         | 11"        | T  |
| U     |                     | 10"             | 10"        | 10"        | 9"          | 9"          | 9"         | 9"          | 9"         | 9"          | 9"          | 9"         | 9"          | 9"         | 9"          | 9"         | 9"          | 9"         | 9"          | 9"         | 9"          | 9"         | U  |
| W     |                     | 4'-6"           | 4'-3"      | 4'-0"      | 3'-9"       | 3'-6"       | 3'-6"      | 3'-6"       | 4'-0"      | 3'-9"       | 3'-6"       | 3'-6"      | 4'-0"       | 3'-9"      | 3'-6"       | 3'-6"      | 3'-6"       | 3'-6"      | 3'-6"       | 3'-6"      | 3'-6"       | 3'-6"      | W  |
| B     | Bar Spacing         | 1'-0"           | 1'-0"      | 1'-0"      | 1'-0"       | 1'-0"       | 9"         | 9"          | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | B  |
| C     |                     | 1'-0"           | 1'-0"      | 9"         | 9"          | 9"          | 9"         | 1'-0"       | 9"         | 9"          | 9"          | 9"         | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 9"          | 9"         | 9"          | 1'-0"      | 1'-0"       | 1'-0"      | C  |
| D     |                     | 6"              | 6"         | 1'-0"      | 1'-0"       | 1'-0"       | 1'-0"      | 1'-0"       | 6"         | 6"          | 6"          | 6"         | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | 1'-0"       | 1'-0"      | D  |
| E     |                     | 6"              | 6"         | 6"         | 6"          | 6"          | 6"         | 6"          | 6"         | 6"          | 6"          | 6"         | 6"          | 6"         | 6"          | 6"         | 6"          | 6"         | 6"          | 6"         | 6"          | 6"         | E  |

**Notes:**

- See Sheet RCB G2-20 for General Notes, Specifications, and Design Stresses.
- See Sheets PWH 45-2-20 thru 45-4-20 for location of certain dimensions tabulated.
- Dimensions are in feet and inches unless otherwise noted.

|                      |                             |   |             |
|----------------------|-----------------------------|---|-------------|
| LATEST REVISION DATE | APPROVED BY BRIDGE ENGINEER | Standard Design - Single Reinforced Concrete Box Culverts<br><b>Parallel Wing Headwalls</b><br>July, 2020 |             |
|                      |                             | Dimension Table<br>45° Skew   | PWH 45-1-20 |
|                      |                             |   |             |