

Backing and
bond.

58. The backing shall consist of flat bedded stone, well shaped, having an area of bed equal to four superficial feet or more. Except in high piers or abutments, the thicknesses of backing stone, but not more, will be allowed in each course, and the joints shall not exceed that of the face work. In special cases, where deemed necessary by the Engineer, to insure stability, the backing shall be in one thickness and the beds shall, if necessary, be scabbled off, so as to give a solid bearing. Nip and pinning will be admitted. Between the backing and face stones there shall be a good square joint, not exceeding one inch in width, and the face stones must be scabbled off to allow this. In walls over three feet in thickness, headers shall be built in front and back alternately, and great care shall be taken in the arrangement of the joints as to give perfect bond.

Culvert
masonry.

59. Culvert masonry shall be built of good, sound, large, flat bedded stones, laid in horizontal beds. It may be known as random, or broken coursed work. The stones employed in this class of masonry shall generally be not less in area of bed than three superficial feet, nor less in thickness than eight inches, and they shall be dressed so as to give good beds with half-inch joints. In smaller structures and in cases where stones of good size and thickness cannot be had, they may, if in other respects suitable, be admitted as thin as five inches. All stones shall be laid on their natural beds. This masonry shall be laid dry or in mortar, as may be directed by the Engineer.

Headers and
stretchers.

60. Headers shall be built in the wall, from front and back alternately, at least in every five feet in line of wall, and frequently in the rise of the wall. In the smallest structures headers shall not be less than 24 inches in length, and the minimum bearing allowed for stretchers shall be 12 inches. In the larger structures all stones must be heavier in proportion. Every attention must be paid to produce a perfect bond, and to give the whole a strong, neat, workmanlike finish.

Wing walls
coping and
curves.

61. Wing walls shall generally be finished with steps, formed of sound, durable stone, and not less than from 10 to 12 inches thick, and 6 feet superficial area; other walls shall be covered with coping of a similar thickness, and of seven feet or upwards superficial area. These coverings shall be neatly dressed as may be directed by the Engineer. The walls of the box culverts shall be finished with stone the full thickness of the wall, and the covers shall be from 10 to 15 inches thick, according to the span; they must have a bearing of at least 12 inches on each wall, and they shall be fitted sufficiently close together to prevent the earth from falling through.

Paving.

62. The bottoms of culverts shall be paved with stones set on edge, to a moderate even face, packed solid, the interstices being also well packed. The paving shall be from 12 to 16 inches deep. When ordered by the Engineer a solid block of masonry shall be substituted for the paving, as shown on drawing No. 39.

Retaining
wall with
sharp batter.

63. Retaining walls with a batter of over $\frac{1}{4}$ horizontal to 1 vertical on the face shall be built of dry masonry, and shall be formed of large, well-shaped stones, hammered to form good beds, and carefully laid to bond as in bridge masonry, but without mortar.