

hang about 3 inches, and thus form an abutment for the pitched stone invert to be built for the bottom of the water-way.

The arches must be formed in regular unbroken courses of stone the full depth, laid throughout in full mortar beds, to joints not exceeding three sixteenths ($\frac{3}{16}$) of an inch.

The voussoirs or arch stones must have three feet six inches ($3\frac{1}{2}$ feet) depth of bed at the springing line, gradually diminishing toward the crown or key-stone of the arch, where they are to be not less than two feet eight inches ($2\frac{2}{3}$ feet) in depth of bed.

The whole of them must be headers, that is to say, they must in all cases be of the full depth stated, and when prepared the stone in every range or course must have a mean thickness of not less than 14 inches, nor more than 21 inches. Their beds must be dressed perfectly smooth and straight, and increase truly from the intrados according to the radius of curvature previously stated, namely $32\frac{1}{16}$ feet; except the elliptical portions of the third and fourth arches from the south end, which are to have a radius of $11\frac{1}{4}$ feet. For the depth of $2\frac{1}{2}$ feet at the crown, gradually increasing to $3\frac{1}{4}$ feet at the springing line, measured from the soffit, their beds must invariably be kept full, without depressions, "wants" or other defects, so that when prepared they will present a fair and even bearing surface throughout. They must be in length of not less than $2\frac{1}{2}$ feet. At the ends, the arrises must be kept good and the end joints kept full for at least three-fourths of the depth of the stone.

The extrados or backs of the arch stones are to be roughly hammer dressed to the proper dimensions they should have when in the place they are to occupy.

The intrados or lower side of the arch must be dressed and boucharded, and the beds of the voussoirs, across the whole length of the arch, are to be chamfered to the breadth and depth of 1 inch.

The heads of the ring stones are to be dressed, and project $1\frac{1}{2}$ inches beyond the general line of wall. They are to be jointed to such lines as will admit of forming suitable connections between them and the face stones of the spandrel walls, and at the joints they are to be chamfered as stated for the beds of the voussoirs.

The stones in all the different ranges or courses must invariably break joint over and with each other at least 12 inches, and when being laid they must be driven up by means of a heavy wooden maul to the joints above stated, $\frac{3}{16}$ of an inch.

All the end joints must be carefully and fully grouted as the works proceed, and every precaution adopted to make all the joints between the stones in the arches, as a whole, as well as all the works connected with them, sufficiently tight to effectually prevent the escape of water from the canal and guard against it entering from the river.

The starlings or cut-waters at both ends of the piers are to have a projection of $3\frac{1}{3}$ feet; they are to be of a curved, pointed shape from the top of the upper offset to the springing line of the arches, thence their projection and width will gradually diminish until they wholly terminate at a point about $4\frac{1}{3}$ feet higher. Part of each end of the abutment piers is, however, to be carried up to at least medium high water to form a bearing for the cofferdams.

The arches are to be formed and properly framed centres of sound, moderately well seasoned, suitable timber, and be of approved construction, securely and satisfactorily braced and fitted up. They must be supported on slack blocks such as will admit of their being gradually lowered at least 6 inches.

Contractors are requested to bear in mind that centres and covering will be required for at least three of the arches at one time, and that the cost of all materials and workmanship connected with their construction, fitting up and removal, and of fitting up such of them as may be again required, or of others in their stead, must be embraced in the bulk sum tendered for centres—the material in them after use to remain the property of the contractor.

Out Stone.—The sides of the abutments, the wing walls on the west side, and walls connecting the present Aqueduct with the new structure, are all to be of cut stones with a "rock face," having a chiselled draft of $1\frac{1}{2}$ inches wide around their