

on the plan. When faced on top and the ends fastening to other plates these foundation plates have to be fitted and secured to the valve chests, the guides and ends of other plates, then they are to be set at the angle shewn on the plan, at such distance from each other, on stone foundations prepared for the purpose, that will bring the centre lines of each pump 15 feet apart. When properly set the foundation and iron plates are to be united by means of a sulphur bed.

2nd. FOUNDATION BOLTS.—These bolts are to be 24 in number, they are to be 7 feet 3 inches between head and nut, $1\frac{1}{2}$ inch diameter, furnished with anchor plates 10 inches square, 3 inches thick, with bevelled corners. The keys forming head at one extremity are to be not less than $3\frac{1}{4}$ inches broad $\frac{1}{2}$ inch thick, and inserted not less than $3\frac{1}{4}$ inches from the extreme end; the other side is to be provided with a six-sided substantial wrought iron nut and washer.

3rd. GUIDES.—These are the guides for the two cross heads and are to be 4 in number; they are to be made in cast iron, presenting when finished, a surface free of scoria, which may be attained by casting them on end; they are to be each 7 feet 2 inches total length, and are to be made in the shape of an L; the base is to be 10 inches wide, height $15\frac{1}{2}$ inches when finished, breadth of top when finished $12\frac{1}{2}$ inches, thickness of metal at base when finished 2 inches, the upright part $1\frac{1}{2}$ inch with heavy fillets as shewn on the plan; the top is also to be $1\frac{1}{2}$ inch thick with 2 projections towards the cross heads, which are to serve as guide proper to said cross heads; these projections are to present a perfectly true surface of $2\frac{1}{2}$ inches width and $2\frac{1}{2}$ inches thickness. Immediately over the top of the upright plate of said guides there is to be at each guide a projection as shewn on the plan. The bottom and top plates of these guides are united at each end with a rib of $1\frac{1}{2}$ inch thick with fillets the same as the guides themselves, and inside these are to be 3 additional ribs $1\frac{1}{2}$ inch thick, which are to assist in uniting the top and bottom; each of said guides is to have the bottom faced and the top faced and polished, and are to be held to the foundation-plates each by means of 4 hold-down bolts 2 inches diameter; the bolts must be turned and fit the holes exactly, the same as at all other joints though it may not be mentioned above, excepting but one kind of bolt holes, that is the foundation bolt holes.

4th. CROSS HEADS.—These cross heads are to be 2 in number; they are to be of wrought iron, made with detached cheeks $12\frac{1}{2}$ inches long and put on as shewn on the working drawing. The centre piece is to be 11 inches thick through the hub, which is to be