

ditions in the steel market are continually changing, and new shapes are often being introduced, and shop practices and erection methods are always being improved, and these changes are all accompanied by improvements in designs of structures.

For the last few years, under war conditions, old customs have been particularly upset and the conditions at the mills have been such that some sections could not be procured at all and others have had to be on order for a year or more before deliveries could be made, and it has been necessary for structural steel companies to rely on their own stock, and designs have had to be made in accordance with same where quick delivery was wanted.

Since the outbreak of the war most of the structural steel business has been confined to munition buildings and steel plants, all of which have been wanted in a rush and some remarkably quick deliveries have been made, but it has been necessary to make the designs to suit the stock of the fabricating company.

Anyone connected with the contracting business is aware that there are frequently disastrous financial losses, and one of the most important phases of the structural steel business is that there should be a thorough understanding of the limits, and the details of contracts undertaken.

There is more money lost by an imperfect knowledge of the obligations of contracts than in any other way, and this more usually happens when there is obscurity in the specifications and plans which are furnished steel companies when they are asked to tender on work, and on which specifications and plans the contract is later based.

In connection with all tenders the principle of honor and the spirit of frankness should always maintain between contractor and customer. This is not always the case, and often specifications for structural work to-day are faulty, and very important clauses are not only put in obscure places, but are deliberately written in uncertain terms. Sometimes specifications are so drawn up that it is evident that the man who wrote them deliberately used terms which made them obscure, so that if he desired, the extreme of the contract could be demanded, whereas if he did not care to do so he could be satisfied with something a great deal less.

Another important feature is where tenders have to be made from drawings which are made to cover all trades in connection with the building, and where it is sometimes very difficult, if not impossible, to be sure of all steel required, and where a considerable amount of steel may be covered by a little obscure note which is easily missed, but which material is intended to be supplied later under the contract. These drawings, too, are often made to a small scale without dimensions being noted and it may easily

follow that beams which should have sixteen inches bearing on the walls, may only get half that amount.

Still another custom that is open to criticism is that consulting engineers often prepare complete designs and specifications on complicated structures which may even have operating machinery in connection with them, and after tying the contracting company down rigidly in all details, they insert a clause in the specifications making the contractors guarantee the structure for a period of years, and these companies have often to take such chances to secure the work.

Again a further confusing habit is that some standard form of specification is often submitted with requests for tenders and these specifications may not be suitable to the particular job; and the result is that the contractor has to take a lot of things for granted and uncertainty necessarily exists as to what is required.

While the above questionable methods are sometimes used by customers, there are on the other hand companies with unscrupulous salesmen, who in their anxiety to obtain work will often obligate themselves as regards contracts, the conditions of which they are morally certain they cannot fulfil, and take a chance of crawling from under afterwards.

Therefore it is important that the contractor and customer make sure in the first place what is expected under the contract and be satisfied that there is a reasonable chance that it can be fulfilled, and if all information is clear, then speed and proper sequence in the work usually follows.

After a contract is under way changes are sometimes necessary through the uncertainty of customers, and in these cases, all instructions should come through the same hands as the original contract so that extras in cost may be adjusted beforehand and various officials may have full knowledge of the final conditions of contract.

Changes should of course be avoided where possible, because there is always deep disgust pervading the shop when they have to work on contracts with a large number of changed drawings, and considerable delay always results and mistakes are more likely to be made.

An interesting feature of the structural steel business is that in the old days material was fabricated, shipped and possibly erected before being examined at all, but to-day nearly all important work is over seen by competent inspectors and the fabricating shops that deliberately set out to do poor work at less cost, only fool themselves and injure their reputation.

While it is recognized that most of the points noted in this article are the comparatively simple features which have been noticed before by those intimate with the structural steel business it has been the intention to convey information to those less familiar who may have occasion to deal in this product.