

SUPREME JUDICIAL COURT OF MASSACHUSETTS

New England Foundation Company, Incorporated v. Commonwealth,
327 Mass. 587

100 N.E.2d 6 (1951) · Decided July 3, 1951

SUMMARY

The Massachusetts Supreme Judicial Court held that a contract for pile installation did not impose an absolute guarantee that every pile would support a twenty-ton load. Read together with the specified pile-driving formula, the contract required compliance with the formula unless and until the engineers modified it based on load tests. The court therefore ordered judgment for the contractor for the cost of additional piles required under an extra work order, with a dissent arguing that the contractor had failed to satisfy the contract's twenty-ton load requirement.

CASE DETAILS

COURT	Supreme Judicial Court of Massachusetts
WRITING FOR THE COURT	Spalding, J.; Qua, C.J.; Lummus, J.; Williams, J.; Counihan, J.
JURISDICTION	Massachusetts
DECIDED	July 3, 1951
DISPOSITION	reversed
PROCEDURAL POSTURE	The petitioner brought an action under Massachusetts General Laws chapter 258 to recover \$69,843.70 withheld by the Commonwealth as the cost of extra piles required after load testing. The trial judge found for the Commonwealth and reported the case to the Supreme Judicial Court on the parties' agreement that judgment would be entered for the petitioner if the finding was legally unwarranted.
STANDARD OF REVIEW	The court reviewed whether the trial judge's finding for the Commonwealth was warranted as matter of law under the reported case.
PRECEDENTIAL VALUE	Published precedential decision of the Massachusetts Supreme Judicial Court
PARTIES	New England Foundation Company, Incorporated v. Commonwealth

TOPICS

contract interpretation

construction law

government contracts

breach of contract

commercial litigation

PRACTICE AREAS

contracts

construction law

government contracts

commercial litigation

QUESTIONS PRESENTED

1. Whether the contract's requirement that all piles have a safe working load capacity of twenty tons constituted an absolute guarantee independent of the formula for determining pile value.
2. Whether piles driven in compliance with the contract's original formula satisfied the contract until the engineers modified the formula on the basis of load tests.
3. Whether the Commonwealth was entitled to deduct the cost of additional piles on the ground that the original piles failed to comply with the contract.

HOLDINGS

1. The requirement that the piles have a safe working load capacity of twenty tons, read together with the formula clause, was not an absolute undertaking that every pile would achieve that result by actual load testing. The formula was the contractual method for determining compliance unless and until the engineers modified the required value of S on the basis of load tests.
2. Because the petitioner drove the piles in accordance with the contract's original formula and the engineers never modified that formula before the work was performed, the Commonwealth was not entitled to treat the additional pile work as the petitioner's obligation under the original contract.

KEY QUOTATIONS

"We are of opinion that the requirement "of a safe working load capacity of 20 tons" when read with the formula clause was not an absolute undertaking on the part of the petitioner that this result would be achieved." (595)

"But until the value of S was changed the petitioner could rely on the formula as originally defined as to piles already driven and must comply with the modified formula as to piles to be driven." (596)

FACTUAL BACKGROUND

The construction contract required steel-encased concrete piles with a safe working load capacity of twenty tons and provided a formula for determining the piles' safe value. The petitioner drove 4,325 of the 4,354 required piles to a penetration of no more than 3.25 inches under the final five hammer blows, as directed and observed by the engineers. After most of the piles had been driven, load tests showed that several piles failed the specified subsidence requirements, and the Commonwealth ordered the petitioner to drive additional piles. The Commonwealth deducted \$69,843.70, the cost of that extra work, from the petitioner's final payment.

PROCEDURAL HISTORY

The petitioner performed foundation work for the Commonwealth under a Logan Airport construction contract. After the Commonwealth deducted the cost of additional piles from the final payment, the petitioner sought recovery. The trial judge entered a general finding for the Commonwealth and reported the single legal issue to the Supreme Judicial Court. The Supreme Judicial Court held the finding was not warranted as matter of law and ordered judgment for the petitioner.

DISPOSITION

reversed

REMAND INSTRUCTIONS

Judgment was to be entered for the petitioner in the sum of \$69,843.70, with interest from November 8, 1948.

CASES CITED

- Atwood v. Boston, 310 Mass. 70, 75
- Maxwell-Davis, Inc. v. Hooper, 317 Mass. 149, 152
- Clark v. State Street Trust Co., 270 Mass. 140, 153
- Beacon Tool & Machinery Co. v. National Products Manuf. Co., 252 Mass. 88, 90
- H.D. Foss & Co. Inc. v. Whidden, 254 Mass. 146, 150
- Biggs v. Densmore, 323 Mass. 106, 108
- Rowe v. Peabody, 207 Mass. 226
- N.J. Magnan Co. v. Fuller, 222 Mass. 530
- Cavanagh v. Tyson, Weare & Marshall Co., 227 Mass. 437

OPINION

SPALDING, J.

327 Mass. 587 (1951) 100 N.E.2d 6 NEW ENGLAND FOUNDATION COMPANY, INCORPORATED vs. COMMONWEALTH. Supreme Judicial Court of Massachusetts, Suffolk. February 6, 1951. July 3, 1951. Present: QUA, C.J., LUMMUS, SPALDING, WILLIAMS, & COUNIHAN, JJ. F.B. Wallis, (L. Wheeler, Jr., with him,) for the petitioner. W.S. Kinney, Assistant Attorney General, for the Commonwealth.

SPALDING, J. By this petition brought under the provisions of G.L. (Ter. Ed.) c. 258, the New England Foundation Company, Incorporated, hereinafter called the petitioner, seeks to recover for materials furnished and labor performed pursuant to an extra work order issued by the Commonwealth, hereinafter called the respondent, under a contract entered into between the petitioner and the respondent.

The judge made a general finding for the respondent and reported the case to this court upon the agreement of the parties that, if the finding for the respondent *588 on the single issue[1] involved

was warranted as matter of law, the finding is to stand and judgment is to be entered for the respondent; otherwise judgment is to be entered for the petitioner in the sum of \$69,843.70, with interest thereon from November 8, 1948.

The facts on which the judge's general finding was based are contained in the report and numerous exhibits incorporated therein. The pertinent provisions of the contract and the circumstances attending its execution and performance are as follows: On August 12, 1947, the department of public works, hereinafter called the department, mailed to the petitioner and others a "Notice to Contractors" to the effect that the respondent was seeking bids for the construction of the foundations of the apron building which was to be erected at the Logan Airport in East Boston.

Plans for the construction, and general and special provisions of the contract were issued. The plans and special provisions were prepared by engineers acting for the public building commission as provided by G.L. (Ter. Ed.) c. 6, § 62, inserted by St. 1947, c. 466, § 2.

The special provisions as appearing in their final form include the following specifications: "PILES 1. All piles shall be steel encased cast in place concrete piles of a safe working load capacity of 20 tons.... DRIVING...

The safe value of piles shall be determined by the following formula $P = 2WH \frac{S}{100} + 0.1$ Where P = safe load in pounds, W = weight of the striking part of the hammer in pounds, H = the fall in feet of the striking part of the hammer or stroke, S = average penetration per blow in inches under the last five blows.

The Engineers may modify the required value of S on the basis of the load tests." This formula "is recognized and accepted in the engineering world as a proper formula for determining the theoretical safe value of piles."

As applied to the facts *589 of this case it is agreed that the value of P was 40,000 pounds, W was 5,000 pounds, H was 3 feet, and S was .65 inches. Thus, a pile driven with a penetration of 3.25 inches or less under the last five blows would be driven in accordance with the formula. It is also agreed that it is mathematically impossible to change the value of S without a resultant change in the value of P. The contract provided that no pile casing or shell should be driven in the absence of the engineers.

An accurate and detailed daily log of each pile was to be kept showing the depth to which each pile was driven, the penetration of each pile under a series of final blows of the hammer, and the "general driving characteristics." Three copies of these logs were to be given to the engineers daily. Any casing or shell driven improperly or otherwise defective or rejected was to be corrected to the satisfaction of the engineers by removal and replacement of the same, or by driving an additional pile at no cost to the respondent.

In the special provisions relating to load tests it was provided that load tests of test piles of the type specified in the contract had been made adjacent to the site of the contract, that data from those tests were available for examination as information at the engineers' office,[1a] and that load tests would be made (apparently at the contractor's expense) on three separate piles as selected by the engineers.

The method for testing the piles was set out in detail. Briefly summarized, it provided the maximum subsidence allowable over given periods of time when the piles should be loaded with twenty tons and later with thirty tons.[2] The contractor was to be allowed to drive a number of test piles to determine for himself what lengths and gauge of pile casings to order "to meet the foregoing requirements."

Such test piles, if satisfactory, were to be accepted by the respondent as piles in place for payment. It was also provided that, in addition to the load tests mentioned above, *590 additional piles might be tested on the order of the engineers. These additional tests were to be performed pursuant to an extra work order issued by the department and were to be paid for by the respondent at the rate of \$750 per pile tested.

Elsewhere in the special provisions of the contract it was provided that contractors must include in their proposals a written statement of the details of the piles they proposed to use and the methods of driving and filling the same.

The respondent reserved the right before awarding the contract to require any contractor to perform load tests on the piles he proposed to use in accordance with the above summarized specifications. The respondent would pay for such tests at the rate of \$750 for each test. It was further stated, "The bid will be rejected if the piles fail to comply with the test load requirements... of the Specifications."

By a letter of September 22, 1947, the department requested the petitioner to drive three test piles in designated locations and to make load tests as a condition precedent to the award of a contract. The letter further stated, "The driving of piles and tests thereof shall be done in accordance with these specifications for this work."

In response to an inquiry of the department, the petitioner on October 15, 1947, outlined by its letter the details of the method it proposed for load testing. The proposed method was acceptable to the engineers. Following the receipt of the department's letter the petitioner drove eight piles from which it selected three for purposes of testing. A driving record of these three piles was kept by the petitioner and the engineers, showing that the total penetration in inches for each pile under the last five blows of the hammer was less than the maximum allowable 3.25 inches.

Load tests were then made on these three piles, and the results showed that two of the piles subsided less than the maximum allowable distance but that one of them did not meet the load test

requirements of the specifications.

The records of the driving of these three test piles and the results of the three load tests were examined by the petitioner, the department, and the engineers. *591 Thereafter by letter dated October 27, 1947, the engineers wrote the department saying that the type of pile used by the petitioner could be used to develop the desired load carrying capacity. This letter specifically brought to the department's attention the fact that one pile "showed greater subsidence than allowed which can be corrected, in our opinion, by driving to a proper elevation."

It closed with a recommendation that the contract be awarded to the petitioner "on the basis of this data" but did not indicate how the engineers proposed to develop the desired load carrying capacity. This letter did not come to the petitioner's attention until May 27, 1948.

On November 21, 1947, the contract was formally executed by the parties without any further change in the specifications. The driving of each pile under the contract was done in the presence and under the observation of a representative of the engineers. "Each pile was driven until the representative of the engineer ordered driving to stop, which was in each case when the penetration under a series of five blows was not in excess of 3.25 inches as measured by the representative of the engineer."

Concerning each pile a record was kept which showed, among other things, the penetration in inches of the pile under the last five blows. Copies of these records were given daily to the engineers as required by the specifications and they were examined by them as they came into their office. "During the period December 8, 1947, to May 21, 1948, 4,325 of the 4,354 piles required by the contract were driven.

All of these piles were driven to a penetration not in excess of 3.25 inches under the last five blows." Except for the three load tests made prior to the awarding of the contract to the petitioner, no further load tests were ordered by the engineers until May 13, 1948, when the department by letter ordered a load test on a designated pile.

The driving record for that pile showed that it had a total penetration of 3.25 inches under the last five blows, but when tested under an actual load the subsidence was greater than the maximum amount allowable under the specifications. *592 On May 21, 1948, the department wrote the petitioner that this pile was not acceptable because of its failure to meet the load test requirements, and asked the petitioner to furnish its plans for fulfilling the terms of the contract.

All further pile driving was ordered suspended until the question of a satisfactory pile was determined. The petitioner in replying to this letter took the position that all piles had been driven in accordance with the specifications (that is, the formula), and that the petitioner was not responsible if the pile failed to meet the maximum allowable subsidence requirements under the load test.

On May 24, 1948, the department ordered load tests on two more designated piles. The pile driving records showed that both of these piles had likewise been driven so that the total penetration under the last five blows was 3.25 inches or less, but each of them had a subsidence in excess of the maximum allowed by the specifications.

As a result of several conferences between the parties, the department on June 16, 1948, issued an extra work order requiring the petitioner to drive extra piles. This order contained the following provision: "This Extra Work Order does not waive the right of the Commonwealth to deduct all or any part of the cost of this work from final payments to the contractor until the Commonwealth's contention that the piles previously driven are not in accordance with the Specifications is judicially determined."

On June 19, 1948, the petitioner resumed work on the site and thereafter completed the work called for under the extra work order. The respondent has deducted \$69,843.70, the cost of this work, from the final payment to the petitioner, and it is this amount which the petitioner here seeks to recover. Other facts will be stated hereafter as occasion requires.

The petitioner contends that the supplying and driving of the additional piles was not called for in the original contract and should be paid for as an extra. The respondent contends, in effect, that this ought not to be paid for as an extra as it was merely the furnishing of work and materials *593 in satisfaction of the petitioner's obligations under the original contract.[1b] Under the terms of the report no question is raised as to the right of the respondent to deduct the sum of \$69,843.70 (the cost of supplying and driving the additional piles) if the petitioner failed to drive the 4,325 piles in accordance with the contract.

The basic difficulty in the case arises from the effect to be given to two provisions of the contract. One of them requires that "All piles shall be... of a safe working load capacity of 20 tons." But in another clause of the contract it is provided that "The safe value of piles shall be determined" according to the formula referred to earlier in this opinion.

In substance, the respondent's position is that the primary objective of the contract was the achievement of a safe working load of twenty tons and if by actual load tests the piles failed to comply with this requirement the petitioner has failed to live up to its agreement.

On this interpretation of the agreement the effect to be given to the formula clause is that it was inserted merely to furnish a working guide which, if adhered to, might be expected to accomplish the objective sought, but if by actual load tests this end was not attained then the petitioner would not have done what it agreed to do.

The petitioner's position in essence is this. The requirement of "a safe working load capacity of 20 tons" does not stand alone; it must be read in conjunction with the formula clause which provides the method by which "the safe value of piles shall be determined."

Thus, so runs the argument, unless and until the value of S in the formula was changed by the engineers on the basis of load tests, the question *594 whether or not the petitioner was currently furnishing, or had furnished, piles of a "safe working load capacity of 20 tons" was to be determined by the formula. If it appeared from load tests that the subsidence of the piles was greater than that permitted by the specifications, then the respondent could change the value of S in the formula and require the petitioner to drive the remaining piles in accordance with the formula as so modified.

We are of opinion that the petitioner is entitled to prevail. As stated above, the specifications provide that the desired safe working load is twenty tons and that the safe value of the piles "shall be determined" by the formula (emphasis supplied).

The letter ordering the petitioner to drive piles prior to the awarding of the contract provides that the driving of the piles and tests thereon shall be done in accordance with the specifications for the work. The petitioner drove three piles according to the formula, and on the preliminary load tests one of these three subsided more than allowed by the specification.

The records of the driving of these piles and the results of the load tests thereon were available to the petitioner, the respondent, and the engineers. At the time the engineers recommended to the department that it award the contract to the petitioner, it was specifically pointed out to the department that one pile had subsided too much.

The specifications provided that any bid would be rejected if the piles failed to comply with the load test requirements of the specifications. After the contract was awarded each pile was driven in the presence of the engineers.

In each case the engineers ordered driving to stop when at least the minimum requirements of the formula had been met as measured by the engineers. Records of these operations were submitted daily to and examined by the engineers. Not until after 4,325 of the 4,354 piles were driven did the engineers, who had authority to do so at any time, order load tests.

The contract did not require the petitioner to perform load tests except upon the engineers' order, and allowed the engineers to decrease the S factor of the formula only on the basis of load tests ordered *595 by them. "At no time did the engineers ever modify the required value of S, or ever notify the... [petitioner] that the formula was not to be followed."

Both from the contract itself and from the construction placed on it by the parties throughout most of the work under it (see *Atwood v. Boston*, 310 Mass. 70, 75; *Maxwell-Davis, Inc. v. Hooper*, 317 Mass. 149, 152; *Restatement: Contracts*, § 235 [e]; *Williston on Contracts* [Rev. ed.] § 623), we are of opinion that the requirement "of a safe working load capacity of 20 tons" when read with the formula clause was not an absolute undertaking on the part of the petitioner that this result would be achieved.

It obviously was not practicable to make a load test for each pile. The cost of such tests would have been prohibitive, as it would have amounted to \$3,265,500 or more than six times the entire contract price of \$512,000.

Moreover, it is not unreasonable to infer that such tests would have seriously impeded the progress of the work. It is doubtless for these reasons that the contract provided for tests only at the request of the engineers. This also explains why the formula provision was inserted, for unless each pile was to be subjected to a load test there would have to be some other method of determining whether the piles would carry the working load called for in the contract.

This did not leave the respondent at the mercy of the formula as originally defined. The engineers could "modify the required value of S on the basis of the load tests." Thus, if it was established after a load test that a given pile could not carry a load of twenty tons, the engineers could modify the value of S. And by so doing the value of P (theoretical safe load in pounds) would, as the parties agree, automatically be modified.

Hence, if a lesser figure were substituted for the original value (.65) so that the penetration under the last five blows of the hammer would be less than 3.25 inches, it would follow that the value of P would be increased.

In other words, the theoretical load which the pile would support would be greater than twenty tons. But until the value of S was changed the petitioner could *596 rely on the formula as originally defined as to piles already driven and must comply with the modified formula as to piles to be driven. Indeed, prior to such modification which could be made only by the engineers on the basis of load tests the petitioner was obliged to comply with the original formula.

Under any other construction the respondent could wait until all the piles were driven and then call for a load test, and if the requirements were not met it could change the value of S and order all the piles to be driven on the basis of the modified formula, and if thereafter additional load tests revealed that the piles could not carry the actual load then the respondent could order the piles to be redriven in compliance with the formula as again modified.

It is hardly conceivable that such a result was contemplated. The interpretation for which the petitioner contends seems to us the more reasonable one and gives effect to both provisions of the contract. To hold that the contract amounted to an absolute guaranty that each pile would support a safe working load of twenty tons would make the formula clause of little or no significance.

It cannot be said that this construction renders the twenty ton clause meaningless. That clause shows that the object of the agreement was the installation of piles which would support a load of twenty tons, but since it was not feasible to test every pile to ascertain that fact reliance was to be placed on the formula as a convenient and workable method of achieving that result.

"The construction of a written instrument to be adopted is the one which appears to be in accord with justice and common sense and the probable intention of the parties.... The courts always avoid, if possible, any construction of a contract that is unreasonable or inequitable." Clark v. State Street Trust Co. 270 Mass. 140, 153.

In reaching this conclusion we have not overlooked the reliance placed by the respondent on the following statement in the report: "The plaintiff admitted that he [sic] knew the piles called for in the contract were to have a load *597 capacity of twenty tons."

We think this means no more than that someone on behalf of the petitioner conceded he knew the contract contained a provision to that effect. But the legal consequences would be the same whether he knew of its existence or not.

As we have said above, in determining its proper construction it must be read in connection with the formula clause. It follows that the finding for the respondent was not warranted as matter of law. In accordance with the terms of the report judgment is to be entered for the petitioner in the sum of \$69,843.70 with interest from November 8, 1948. So ordered.

COUNIHAN, J. I am unable to agree with the majority opinion. I am substantially in accord with what is there said relative to the facts found by the judge and with the analysis of the position of the parties to the controversy. I part company with the majority when it says: "We are of opinion that the petitioner is entitled to prevail." I believe that the finding of the judge for the respondent, hereinafter called the Commonwealth, ought to be sustained.

The issue here, which is not complicated, is what construction as matter of law should be placed upon two seemingly inconsistent clauses in the contract. The solution is more difficult. The first clause entitled "Piles" and set out in a separate paragraph 3-E-1 reads: "All piles shall be steel encased cast in place concrete piles of a safe working load capacity of 20 tons" (emphasis supplied).

The second clause is set out in another paragraph 3-F-5 entitled "Driving" which reads: "The safe value of piles shall be determined by the following formula..." (as set forth in the opinion). The report states that the petitioner, hereinafter called contractor, "admitted that he [sic] knew the piles called for in the contract were to have a load capacity of twenty tons."

The opinion gives little weight to this statement which I interpret to be a finding of fact by the judge. I think this admission highly important and the strongest *598 kind of evidence of the interpretation the parties put upon the contract before any dispute arose. I harbor no doubt that the contractor was fully aware of clause 3-E-1 of the contract when it entered into it.

In the first place it is set out in simple words in a separate paragraph. In the second place at the direction of the Commonwealth's engineers three experimental tests were made by the contractor

at the expense of the Commonwealth before the contract was signed. These tests could only have one purpose which was to determine whether piles could be driven to carry a load of twenty tons.

The engineers of the Commonwealth by letter notified it of the results of these tests. These results showed that two of the piles met the requirements of the specifications and that one pile showed greater subsidence than allowed, which however could be corrected, in the opinion of the engineers, by driving to a proper elevation.

In its brief and oral argument the contractor put great stress upon the fact that it had no knowledge of this letter of the engineers until May 27, 1948, after the Commonwealth had notified it of failure to meet the specifications. There is no merit to this argument for it appears in truth and in fact that the contractor made these tests itself and that its engineers were fully cognizant of the results as soon as the tests were completed.

There is another statement in the report, which I interpret as a finding of fact by the judge, that the formula referred to is recognized and accepted in the engineering world as a proper one for determining the theoretical safe value of piles.

In this contract then we have two clauses to construe: one which is clear, concise, unambiguous and has a practical meaning; another which has only theoretical meaning and therefore little, if any, value. The first clause is entirely consistent not only with the manifest general purposes of the contract but with the dominant purpose as well, which was to secure piles strong enough to sustain the apron building at the airport.

The other clause assures nothing for it is only a theoretical way of attaining this result. The fact *599 that the Commonwealth ordered the contractor to make the experimental tests proves to me conclusively that it was for the sole purpose of emphasizing the necessity for strict compliance with the twenty ton requirement. It points out significantly the interpretation put upon the contract by both parties.

This interpretation this court is permitted to and should adopt. The contractor admits this to be the rule. Williston on Contracts (Rev. ed.) § 623. Restatement: Contracts, § 235 (e). That clause 3-E-1 preceded 3-F-5 in the contract may be considered as indicative that 3-E-1 is controlling. Williston on Contracts (Rev. ed.) § 624. If this view of the construction of the contract is incorrect, then in any event both clauses should be construed together and no greater reliance should be put upon the clause capable of only a theoretical meaning than upon the one with a practical meaning.

It is agreed that in the formula it is mathematically impossible to change the value of S without a resultant change in P. P, which is a safe load of twenty tons, should have been recognized by the contractor as the real result to be attained and cannot be overlooked because S did not attain it. It is obvious that the S factor was intended only as a maximum allowable penetration in inches per blow under the last five blows.

I do not agree with the statement in the opinion that the contract provided for tests only upon requests of engineers of the Commonwealth, although I admit that there may be honest difference of opinion as to this. Clause 3-I-5 provided that "The Contractor may drive a number of test piles to determine for himself what lengths and gauge of pile casings to order to meet the foregoing requirements.

Such test piles, if satisfactory, will be accepted as piles in place for payment" (emphasis supplied). This I infer to mean that tests could be made by the contractor at any time during the progress of the job. The word "satisfactory" can have but one meaning which is to meet the requirements of the job. There can also be but one meaning, it seems to me, of the word "requirements" in clause 3-I-5 and that is that the piles *600 should carry a load of twenty tons and not, as the opinion would have it, that such piles would be satisfactory if driven by a theoretical formula regardless of results.

But apart from clause 3-I-5 it is difficult to believe that the Commonwealth would object to such tests at any time. An important consideration, it appears to me, is that the load tests on the three piles made in May, 1948, which precipitated this controversy, disclosed a subsidence in excess of a quarter of an inch under a twenty ton load and a load capacity of less than fifteen tons.

A slight difference might be forgiven, but a difference of over twenty-five per cent in the load capacity is so marked as to convince me as matter of law, guided by the usual principles applicable to the construction of written contracts, that the contractor utterly failed to meet the requirements of the contract. I realize that there is a statement in the report that 4,325 of the 4,354 piles required by the contract up to the time the contractor was notified to cease work, were driven to a penetration not in excess of 3.25 inches under the last five blows, apparently in compliance with the formula.

Construing the two clauses together, however, as I do, I am of opinion that this statement is not enough to permit the contractor to recover. I agree with the statement in the opinion that it was obviously not practical to make a load test for each pile, but I think it *reductio ad absurdum* to draw attention to the extravagant cost of such tests. It is equally obvious to me that as the work progressed spot checks could have been made and errors discovered.

I am not certain that even spot checks were necessary, for from the results of the tests in May, 1948, it is apparent to me that these shortcomings would be visible to the naked eye of a layman and most certainly to the engineers and workmen of the contractor skilled in this kind of work.

The construction of the contract I favor gives full effect to the intent of the parties as expressed in Article 31 of the standard specifications, that all provisions of the contract "are intended to be co-operative; to describe and provide *601 for a complete work." Piles not capable of bearing twenty

tons did not make for "a complete work." *Beacon Tool & Machinery Co. v. National Products Manuf.*

Co. 252 Mass. 88, 90. *H.D. Foss & Co. Inc. v. Whidden*, 254 Mass. 146, 150. See *Biggs v. Densmore*, 323 Mass. 106, 108. If the result seems harsh in the present case, it is less so than the results in cases like *Rowe v. Peabody*, 207 Mass. 226, *N.J. Magnan Co. v. Fuller*, 222 Mass. 530, and *Cavanagh v. Tyson, Weare & Marshall Co.* 227 Mass. 437, in which the contractor is held to his bargain to accomplish the impossible.

Such is not the case here. In view of what I have said, I believe that as matter of law the finding of the judge was permissible. NOTES [1] That issue was whether the petitioner had driven 4,325 piles in accordance with the specifications of the contract. [1a] The substance of this information does not appear.

[2] Where the load was twenty tons the subsidence was not to exceed one quarter of an inch, and where the load was thirty tons the subsidence was not to exceed three eighths of an inch. [1b] The standard specifications of the contract include the following: "Article 20. Intent of Plans and Specifications.... All the work, labor and materials to be done and furnished under the contract shall be done and furnished strictly pursuant to, and in conformity with the specifications... and also in accordance with the directions of the Engineer as given from time to time during the progress of the work, under the terms of the contract."

The contract also provides (Article 31) that "The standard specifications, the plans, the special provisions and all supplementary documents are essential parts of the Contract.... They are intended to be co-operative; to describe and provide for a complete work."