

which DGS denied and withheld \$9,689.25 of the contract price for back charges. The back charges arose out of Change Order No. 2 credit of \$5,559.75, Change Order No. 3 credit of \$240.00 and procurement of As Built Drawings credit of \$3,889.50. (Tab 3 Rule 4 file).

4. Prior to the hearing the parties resolved several of the Appellant's claims and DGS back-charges and left the MSBCA to decide the following:

A. Is Appellant entitled to additional compensation for roof work in the amount of \$10,383.00?

B. Is Appellant entitled to additional compensation for demolition of electrical wire in the amount of \$1,451.92?

C. Is Appellant entitled to additional compensation for transitional duct work in the amount of \$938.00?

D. Is Appellant entitled to additional compensation for sprinkler system work in the amount of \$3,585.00?

E. Is Appellant entitled to additional compensation for soil compaction work in the amount of \$2,038.00?

F. Is Appellant entitled to additional compensation for light fixture work in the amount of \$850.00?

G. Is DGS entitled to a \$3,889.00 back charge credit to procure as built drawings?

H. Is DGS entitled to a \$3,650.00 back charge for liquidated damages for 73 days of delay?

A. Roof Work Claim

5. Prior to bid opening there was a scheduled pre-bid meeting held at the site which was attended by Appellant. The testimony of several DGS officials reveals that bidders were shown the site and building to include access to the attic of the building. Appellant's president Mr. David Dimock testified

that while at the pre-bid meeting, he was only shown access to the attic by way of a panel in the roof and, therefore, did not enter into the attic. DGS officials stated access was provided to the attic by stairs. Inspection would have shown what structures actually existed in the attic of the building. The contract drawings, however, were deficient as they related to the attic detail. The deficiencies apparently arose out of the failure of the architect to make an on site inspection of the existing structure prior to drawing the bid documents. As a result there were inconsistencies in what the bid drawings anticipated and what the Appellant actually found on the site when entering the attic for the first time after award of the contract.

6. The Woodside Building had a roof on the east and west side ending in a "hip"¹ configuration.

7. The original contract drawings required the removal of the hip end of the roof on the east and west side of the building. The contractor was then to extend the existing roof over the new additions.

8. Immediately following award, Appellant further inspected the existing building. Mr. Dimock testified that the plans requiring the removal of the existing roof members and replacement with new joists could be accomplished in a different and better manner. The suggestion was to build over the existing roof with the new roof extension. The proposal was first reviewed at a Progress Meeting on December 2, 1986. (Tab 15 Rule 4 file).

9. DGS's architect Robert A. Cyr (RAC) then reviewed this proposal and by letter dated December 8, 1986 rejected the change. (Tab 14 Rule 4 file).

10. However, during a Progress Meeting on January 6, 1987, DGS, RAC and Appellant agreed to the Appellant's new roof framing approach. (Tab 17 Rule 4 file). DGS would allow Appellant to "Engineer a new framing

¹A "hip" roof is a roof which rises by inclined planes from all four sides of a building.

approach for the roof frame for both new wing additions which would allow the existing roof to remain intact, at no change in contract price (Tab 17 Rule 4 file).

11. The change in the roof framing approach was a substantial alteration to the project, which rendered the original contract drawings unusable to a large extent. All parties agreed to this change in roof framing concept subject to approval by RAC of the new design to be submitted by Appellant.

12. Appellant's architect provided roof re-design drawings, plans and calculations. (Appellant's Ex 2 A&B). These were rejected by RAC on January 19, 1987. A second set of plans and calculations for roof re-design were submitted by Appellant. (Appellant's Ex. 3 A&B). These were approved by RAC on February 24, 1987.

Mr. Dimock testified that the difference between the two submittals was minor and that the rejection of the first submittal and the necessity for a second submittal was an unnecessary expense.

13. The Appellant's architect had failed to state certain details for the roof framing construction and the second set of drawings were approved by RAC without splice detail,² nor detail for shim or bevel cut.³ While the drawings did specify shim cut, Mr. Dimock testified that either the shim or bevel cut method was acceptable building practice and interchangeable. The record also reflects that DGS had at this point in the contract delegated to a large extent the methodology for construction to Appellant and it was reasonable for the Appellant to assume minor changes in technique (such as shim versus bevel cut) could be made.

²Splice detail is the manner in which lumber is extended in length by adding other pieces of lumber.

³Shim or bevel cut is the manner in which a joist truss is matched to bear on an existing surface at an angle to the truss.

14. DGS inspectors, however, did attempt to enforce specific construction detail which included shim cut. The DGS on site inspector Mr. Patterson testified that on May 27, 1987, he directed Appellant to construct the roof with the shim cut shown on the drawings and that bevel cut must not be used in place of the shim cut. (Tab 27 Rule 4 File). DGS offered no testimony as to why the methods were not interchangeable, asserting only that Appellant was required to conform to the method of bearing for the joist trusses shown on the drawings.

15. DGS personnel made several complaints as to the roof work. (Tabs 28, 29, and 30 Rule 4 file). However, the roof was finally accepted by RAC (Tab 30 Rule 4 file) after further detail drawings on splice detail (Appellant's Ex. 4) and Cat-Walk drawings (Appellant's Ex. 5).

16. Mr. Dimock testified that in addition to extra drawing delays, DGS required more work on the cat walks, Jack Truss re-design and rails, resulting in additional costs for the roof work as follows;

TDI Management (3 wks.)	\$ 1,500.00
Engineering (Sub)	4,000.00
Material (Erdman)	5,081.00
Labor	<u>5,600.00</u>
Total additional	\$16,681.00
Mark-up 15%	<u>2,502.00</u>
	\$19,183.00
Credit for bid ⁴	<u>8,800.00</u>
Net Change Order	\$10,383.00

⁴The \$8,800.00 credit for Appellant's bid price for the roof as originally designed was calculated as follows:

<u>BID Estimate</u>	
4 men-10 days	\$4,000.00
Material	3,000.00
Temp Con	<u>1,800.00</u>
Credit	\$8,000.00

B. Demolition of Electrical Wire

17. Appellant claimed \$1,344.37 plus 8% markup for a total of \$1,451.92 for removal of electrical wire as an extra to its bid price for demolition costs. The wire was discovered concealed in a portion of a wall that was to be demolished. Appellant hired an electrical contractor to remove and re-route the wire through an attic junction box (Appellant's Ex. 6 A&B). The wire was not shown on the bid drawings and was concealed from view in the wall.

During the hearing the confusion over the demolition of electrical wires became clear. Apparently the DGS personnel knew only of the "dead" wire running out of the floor and believed its removal cost was included in the demolition. Testimony of Mr. Dimock and Mr. Patterson referred to the "dead" electrical wire running out of the floor, which was removed at no additional cost. DGS was unaware of a second "live" wire hidden in the wall.

C. Transitional Duct Work

18. The bid drawings showed the location and installation of duct work. (Tab 10 Rule 4 File ME-1). Mr. Dimock described the duct as a "straight shot" as shown on the original bid drawings.

19. The re-design of the roof framing required transitional work⁵ to avoid obstacles. Appellant hired a sheet metal contractor for the transitional duct work. (Appellant's Ex 7). Appellant charged \$403.80 for this work. (Appellants Ex. 8). In addition, Appellant incurred costs in moving certain other obstacles such as framing and lumber, bringing the total costs for transitional duct work to \$938.00.

⁵Transitional duct work results when duct is pieced together in such a way to go up, down or around obstacles in the duct's path.

20. The transitional duct work could have been avoided, if the original bid drawings had been used for the roof framing approach. However, all parties had agreed to the change in roof framing and therefore the transitional duct work was a result of the overall new approach to the roof.

D. Sprinkler System Work

21. The bid drawings called for installation of 5 sprinkler heads in each section of the addition for a total of 10 heads. (Tab 10 Rule 4 File ME-1). However, the drawings did not show the water pipe locations to serve the heads. The drawings do require as recited in the notes; "1) All sprinkler work to be in accordance w/NFPA 13 [i.e. fire code]. Contractor to prepare drawings for approval by Fire Marshall before installation."

22. Appellant working from the bid drawings planned on simply extending the existing system with 1" pipe to serve the 10 sprinkler heads. However, Appellant was required by DGS to install a different sprinkler system than proposed. Appellant hired a sprinkler contractor to install the system and claims \$3,320 plus 8% Markup for a total of \$3,585.00. (Tab 89 Rule 4 File).

23. At the hearing, Mr. Patterson testified that Appellant's proposed sprinkler system was not satisfactory and required further work to conform to fire code. However, he gave no specifics as to requirements of the code.

Mr. Bradley of the State Fire Marshall's offices testified that the originally proposed sprinkler system would "most probably" not have complied with code.

24. Mr. John Persico, employed by DGS as a senior civil engineer and who was responsible for supervising the project, testified that a bidder should have made hydraulic calculations to see if his sprinkler system would meet NFPA 13 standards. At the hearing, DGS expressed concern over the necessity to have sufficient water volume and pressure for the system to be effective.

However, no DCS witness testified as to what the specific fire code requirements were nor was there any testimony as to why Appellant's proposed sprinkler system would not meet the fire code since no one made the calculation to determine this.

E. Soil Compaction Work

25. The contract required soil compaction under the concrete slab floor of each section of the addition. (Tab 9 Rule 4 File page 34 of 38 Addendum

1). Structural fill compaction was to be to 95% dry density. The site previously had been used as a play ground and was undisturbed soil.

26. Appellant's Mr. Dimock testified that after excavating for the footers and wall installation backfill was performed using material from on site.

Appellant then applied the required crushed stone and attempted to tamp the soil to 95% dry density without success.

Appellant called a soil testing company to the site who informed Appellant 95% dry density compaction could not be achieved using on site material because of mud and debris contained in the on site material available for backfill.

27. Appellant using standard construction methods "under cut"⁶ the site material to a depth necessary to remove the mud and debris from the site and cure the pumping⁷ effect.

28. Appellant next purchased "select borrow" from Genstar to place on site to achieve 95% dry density . (Appellant's Ex. 10 A&B). Appellant incurred costs for under cutting (Appellant's Ex. 11) and additional labor costs to backfill. The total cost of the second successful compaction to 95% dry density amounted to \$2,038.00.

⁶Undercut means to take out existing material.

⁷Pumping is the undulating action of material when weight is applied to its surface.

29. There was no evidence the parties anticipated a site compaction problem.

F. Light Fixture Work

30. The bid drawings called for installation of lighting fixtures listing "Catalog No. MARK # CPMIN-5-340-3". "Mounted Lay-In". (Tab 10 Rule 4 File ME-1). All of the buildings' light fixtures were recessed.

31. Appellant ordered surfaced mounted light fixtures from Mark's as indicated. (Respondents Ex. 1). However, after ordering and installing the fixtures DGS demanded recessed fixtures. Mark's catalog CPMIN has an "S"⁸ series, not a 5 as shown on bid drawings. At the direction of RAC, Appellant removed fixtures it had surface mounted and re-ordered and re-installed recess fixtures. In so doing Appellant incurred a subcontractor re-stocking charge of \$850.00. (Appellant's Ex. 12).

32. DGS offered no explanation for the erroneous description of the light fixture on its bid drawings.

G. As Built Drawings

33. The contract requires that "As Built" information be provided by the contractor. (Tab 9 Rule 4 file at 150107 page 2).

A. As the work progresses, the Contractor shall record on a set of white prints the installed locations, sizes and depths of all piping, services, etc., in the project wherever they differ from those indicated on the Contract Drawings. All dimensions shall be established from datum points approved by the Architect. Upon completion of the work, the Contractor shall turn over to the Architect one (1) neat copy of white prints showing required "As-Built" information.

34. The contract refers to As Built Drawings (Tab 93 Rule 4 file, section 230 - Storm Water Drains) and states;

D. As Built Drawings:

1. As the work progresses, the Contractor shall record in red ink on a set of black and white prints of the Contract

⁸"S" apparently means surface mounted fixtures.

Drawings the "as installed" locations, sizes, elevations, identifications, etc. of all piping, services, trenches, equipment, etc. wherever and however such information differs from (or is missing from) the Contract Drawings. The prints are to be kept in good condition at all times.

2. All dimensions and elevations shall relate to datum references acceptable to the Architect.

35. Appellant, following requests for As Built Drawings, sent a letter of transmittal with attachments of the drawings to RAC. (Appellant's Ex 16). As previously noted, numerous other drawings for roof framing, cat walks, splice, transitional duct work, etc., had been provided to DGS.

36. Mr. Persico, unaware of the 10/29/87 transmittal to RAC (Appellant's Ex. 10) ordered a set of As Built Drawings from RAC at a cost of \$3,890, which Mr. Persico never reviewed and assumed had been properly prepared. This purchase from RAC followed a request by Thomas H. Hamer, Director, Office of Engineering & Construction, DGS, to have RAC de-barred⁹ for errors and omissions on the Woodside Building. (Appellant's Ex. 15).

37. At the hearing, Mr. Persico testified that he was unsure whether the letter of transmittal and attachments would have fulfilled the contractor's duty under the As Built Clauses of the contract. DGS is withholding \$9,689.00 for back charges on As Built Drawings expense and liquidated damages.

II. Liquidated Damages

38. The contract provides for liquidated damages of \$50 per day of unexcused delay in competition. (Tab 4 Rule 4 File). The project was completed and accepted by DGS 73 days late. DGS claims \$50.00 x 73 days = \$3,650.00 in liquidated damages.

39. Appellant claims that it was delayed by weather for 41 days as follows;

1986 Nov. - 4, 5, 11, 20, 24, 25, 26, 27, 28

Dec. - 2, 9, 10, 11, 12, 13, 14, 15 16, 18, 19, 23, 24

⁹De-barred - a process in COMAR to exclude a person or company from performing State contracts.

1987 Jan. - 2, 19, 22, 23, 24, 25, 26, 27, 28, 29, 30
Feb. - 2, 5, 6, 7, 8, 9, 10, 23

Appellant relies on its daily logs (Appellant's Ex. 13) and DGS's daily reports, (Appellant's Ex. 14) for the dates listed above.

40. Appellant further claims additional delays for human conduct beyond its control as follows:

(a) Delay in soil compaction Dec. 30, 31, 29, 1986.

(b) 1-2 day delay in presenting brick samples to DGS.

(c) 2 day delay due to State employees removing electric service from job.

(d) Mar. 3-9 or 7 days delay due to DGS requirements for splice detail drawing.

(e) 1 day due to a requirement to match existing 2 tab shingles, which are no longer manufactured, requiring use of 3 tab shingles which must be indexed (i.e., placed on roof in special order) for shingles to match existing roof material.

(f) 1-2 days electric cut off switch. State Employee wanted to be present for electrical cut-off.

(g) 10 days cat-walk extension.

(h) 3 days removal of wire.

(i) 4-5 days install insulation change order.

(j) 3-4 days for sprinkler system.

(k) 1 day re-design window position since windows ordered by RAC were the wrong size.

(l) 1-2 day delay for coil units.

(m) 10 day delay for coil units.

(n) 1-2 day delay floor surface change order.

(o) 5-7 days rain spout change.

41. Mr. Patterson testified delays on the job were caused by stick building¹⁰ of the roof and lack of experienced man power. He further stated delays were caused by the contractor replacing window sills and grinding the concrete floor.

42. Mr. Persico testified delays were caused by unqualified men on the job and the contractors' apparent lack of cash flow to have materials on site. Also, he concluded the contractor should have used prefabricated roof members rather than stick building the roof.

43. Concerning Appellant's claimed weather delays, Mr. Persico testified that for the same period of construction other projects under his supervision were delayed by weather.

Decision

A. Roof Framing Claim

Appellant asserts a claim of \$10,383.00 for extra work arising out of a modification in the roof frame work. This is a substantial amount in relation to the scope of the contract price. The parties made this modification after bid award. The modification is noted in the Progress Meeting minutes for January 6, 1987 as being agreed to by all parties. (Tab 15 Rule 4 File).

COMAR 21.01.02.01 (26) provides the following:

"Contract modification" means any written alteration in the specifications, delivery points, date of delivery, contract period, price, quantity, or other provision of any existing contract, whether accomplished in accordance with a contract provision, or by mutual action of the parties to the contract. It includes change orders, extra work orders, supplemental agreements, contract amendments, or reinstatements.

¹⁰Stick building - building portions of construction members from non-prefabricated pieces, one piece or stick at a time, as opposed to using construction members prefabricated off site.

This Board finds the parties by their mutual action modified the contract and recorded it at the Progress Meeting on January 6, 1987. This modification set the stage for other changes in the contract performance and planning.

The Board has acknowledged in the past that a contract modification may be found to exist by reference to the conduct of the parties, notwithstanding a requirement that all changes to the work be in writing. Here the express agreement of the parties to the roof re-design constituted a contract modification. Compare The Driggs Corporation, MSBCA 1338 2 MSBCA ¶ 194 (1988).

DGS's argues that Appellant should have performed this extra work at no additional cost. The Board finds that the roof frame claim of Appellant is a reasonable adjustment, and the record does not support that Appellant was a mere volunteer in its agreement to the contract modification.

Where a contract modification has occurred, the contractor is entitled to reasonable actual costs and profit resulting therefrom.

The Board therefore sustains the appeal as to the \$10,383.00 roof frame claim.

B. Demolition of Electric Wire

Appellant, in required demolition of a wall, encountered a live wire not shown on the bid drawing.

The Board has held that a contractor has a right to rely on its reasonable interpretation of bid drawings.

The Board has followed in its past decisions an underlying rationale of implied warranty. When the State contracts for construction services to be performed in accordance with its own design specifications, there is an implied warranty that if those specifications are followed, a satisfactory

result will be obtained. Granite Construction Company, MSBCA 1014, 1 MSBCA ¶66 (1983). See Dewey Jordan, Inc. v. The Maryland-National Capital Park and Planning Commission, 258 Md. 490 (1970). The omission of the concealed live wire on the bid drawings in this regard left Appellant with no option but to re-route it. The Board thus sustains the appeal for \$1,344.37 plus 8% markup for a total of \$1,451.92.

Transition Duct Work

The original bid drawings showed the installation of duct work in a straight line. However, following the modification of the contract for roof framing this was not the case and transitional ductwork was required.

The State, by agreeing to the new design, impliedly agreed to any other ordinary and necessary adjustments the modification required. The transitional ductwork was a necessary adjustment under the modification.¹¹

Therefore, the Board sustains the appeal for \$938.00 for the cost of the transitional duct work.

E. Sprinkler System

The bid drawings indicated installation of 10 sprinkler heads in the new additions. The drawings did not indicate where the water service lines were to be installed, nor provide information as to size or capacity. The system was only required to comply with NFPA 13 fire code.

Appellant reasonably interpreted the bid drawings in respect to the sprinkler system. No DGS representative could explain the factual basis for denying Appellant's original plan to install 1" pipe extensions to the new sprinkler heads.

¹¹As noted in findings of fact there was a conflict in the testimony over access to the attic at the pre-bid conference. However, under these facts it is inconsequential that Appellant did not inspect the attic, as the cause of the transitional duct work arose out of the roof re-design.

The Board requires more than an assumption that a contractor's work will not meet code requirements. Mr. Bradley's belief that Appellant's system would "most probably" not meet the code standards, is not enough to require Appellant to tear out existing work and do it over.

While the record demonstrates that the hydraulic calculations necessary to check to system as to code standards were obtainable, no one at DGS or RAC ever performed them.

The Board thus sustains the appeal for \$3,585.60 (including 8% markup) sprinkler system costs.

Soil Compaction

The contract required 95% dry density compaction for 12" under the concrete slab portion of each addition's floor.

Appellant attempted to attain 95% dry density compaction during a first backfill without success. Appellant retained their own soil testing company which informed them only 80% dry density compaction could be obtained using on site material.

To comply with the contract Appellant used an accepted construction technique to under cut and replace with select borrow. Appellant incurred a reasonable additional cost of \$2,038.00 for the successful second compaction attempt. There is no evidence in the record that either party knew or should have known there was any problem with the site conditions.

The contract contained no representation as to the condition to be encountered nor should Appellant have reasonably anticipated the conditions actually encountered. The Board thus sustains the appeal for \$2,038.00 soil compactions costs.

F. Light Fixtures

The bid documents called for a specific catalog number for the light fixtures. The manufacturer favored a surface mounted fixture under the description given on the bid drawings.

The Board finds that Appellant was entitled to rely on the drawings as being accurate. In this claim the bid drawings contained an error which could not have been detected by a reasonably prudent bidder.

The actions of Appellant were reasonable and the Board sustains the appeal for \$850.00 light fixture re-stocking charge.

G. As Built Drawings

The contract required as built information and As Built Drawings.

Appellant sent a letter of transmittal with drawings to fulfill this requirement. DGS's Mr. Persico never saw the transmittal and attachments. It is difficult to know why As Built Drawings were ordered from RAC when the Appellant's transmittal was never reviewed by DGS. DGS has not sustained the burden of showing the documents provided by Appellant did not fulfill the As Built Drawings requirement of the contract.

Therefore, the Board denies the DGS claim for \$3,889.90 As Built Drawings cost.

II. Liquidated Damages

The contract provides for liquidated damages of \$50.00 per day past the completion date. The project was completed and accepted 73 days late.

The contract outlines a remedy where delay is caused by forces beyond the control of the parties.

DGS knew from the daily logs and daily inspection reports that 41 days of delay were incurred by Appellant, because of severe weather conditions. The Board finds the procurement officer had a duty under the contract when

these delays became known to ascertain the facts and the extent of the delay and extend the time for completion when the facts justified extension. DGS knew or should have known of the weather caused delays when it asserted liquidated damages. Mr. Persico during his testimony acknowledged that other projects during this period were delayed by weather. DGS's evidence failed to address the days Appellant claimed weather delays.

Appellant also claims between 63-71 days for delay due to human conduct and changes beyond its control. We find from the record that Appellant is entitled to a 63 day time extension for this class of delay.

The reasons for non-weather delay are varied. However, the thread which ties the delays together relates to Appellant's reasonable responses to the actions of State employees. These delays were not caused nor contributed to by the Appellant in any of the listed instances.

Therefore the Board finds the contract completion date was extended by 41 days for severe weather and 63 days for non-weather related delays. These extensions set off the 73 day liquidated damages claim of DGS and therefore the DGS claim for \$3,650.00 liquidated damages is denied.

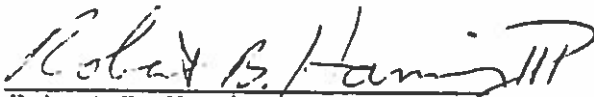
Dated:

May 30, 1990



Neal E. Malone
Board Member

I concur:



Robert B. Harrison III
Chairman

Sheldon H. Press
Sheldon H. Press
Board Member

I certify that the foregoing is a true copy of the Maryland State Board of Contract Appeals decision in MSBCA 1474, appeal of TDI CORPORATION under DGS Contract No. R-611-833-001.

Dated: May 30, 1990

Mary F. Priscilla
Mary F. Priscilla
Recorder