BEFORE THE
MARYLAND STATE BOARD OF CONTRACT APPEALS

Appeal of Martin G. Imbach, Inc.	)	
	)	Docket No. MDOT 1020
Under SHA Contract No. F-906-501-778	)	

May 31, 1983

Contract Interpretation - Ambiguity- Where a contract is susceptible of more than one reasonable interpretation, the interpretation of the non-drafting party prevails.

Duty To Inquire - While a contractor is obligated to bring to the State's attention major discrepancies or errors which it detects in the specifications or drawings, it is protected if it innocently construes in its favor an ambiguity equally susceptible to another construction.

Change - Under an SHA contract clause permitting the Engineer to make unilateral changes, a contractor was not entitled to additional costs for work which increased or decreased a major pay item by less than 25%.

Breach of Contract - Although SHA did impliedly warrant that its plans were adequate and sufficient to satisfactorily perform the project, Appellant failed to show that said warranty was breached.

Breach of Contract - Although a number of changes were ordered under the contract which significantly affected the final payment quantities, neither the magnitude nor the quality of said changes required the performance of work so substantially different from that bargained for as to have constituted a breach of contract.

Misrepresentation - Right To Rely - Notwithstanding the fact that the contractor expressly was instructed by the contract that estimated quantities contained in the schedule of prices were approximate and that unit prices would apply regardless of any increase or decrease in those estimated quantities, the contractor did not assume the risk of increased costs resulting from SHA's negligence in preparing the estimate. The contractor had a right to rely on the implied representation that SHA's design and quantity estimates carefully were prepared and based on all relevant information in its possession.

Misrepresentation - Right To Rely - Although SHA contractually reserved the right to unilaterally change the contract and, concomitantly, to increase or decrease major pay item quantities, the contractor was entitled to rely on the SHA estimates for said quantities where the changes made were necessitated by SHA negligence.

Change - An SHA directive to construct a stream channel to a uniform width, where the contract imposed no such requirement, was considered to be a change to the contract requiring the performance of "extra work."

Authorized Representative - The SHA area engineer and project engineer, acting in concert, were authorized to order field changes on behalf of SHA. Where said field changes were ordered, SHA was rendered liable for any resulting increase in costs.

Ratification - Regardless of the breadth of the SHA area engineer's authority to order changes, his directives were ratified by an SHA District Engineer. The SHA District Engineer was authorized to act contractually on behalf of the SHA.

Notice - Notice requirement under SHA "Disputes" clause is inapplicable to unilateral changes ordered by authorized representative of SHA engineer.

Change - Requirement For Written Order - A directive to perform changed work need not be in writing despite contract language requiring same.

Notice - SHA was not prejudiced by lack of notice of claim since it ordered changed work and had survey data which would permit it to determine accurately the additional work performed.

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OPINION BY CHAIRMAN BAKER

This timely appeal has been taken from a final decision issued by the State Highway Administration's (SHA) Chief Engineer[1] denying Appellant's claim for additional labor, equipment and other costs resulting from alleged changes to the captioned contract work. Quantum is not now in issue.

[1]This decision was approved by the SHA Administrator as required by COMAR 21.10.04.01B. (Appeal File, Tab II)

I. Findings of Fact

A. Introductory

In the late 1960's, existing U.S. Route 40 through Frederick, Maryland was transformed from a two lane road into a divided highway having two lanes in each direction. The east and westbound roadways of the completed project were separated by a drainage channel which was to carry stormwater runoff. This appeal concerns a 3,400 foot section of this drainage channel located in the vicinity of U.S. Route 40 West and its intersection with Bowers Road.

By the spring of 1978, SHA officials had become concerned over the erosion occurring along the sides of the drainage channel which sloped towards the east and westbound roadways of U.S. Route 40. Mr. Lewis Rudisell, Jr., the SHA Assistant District Engineer for District Seven in charge of maintenance, telephoned Maccaferri Gabions, Inc. seeking information on the possible use of gabions[2] to control erosion of the channel banks. Mr. Rudisell spoke with Mr. William L. Schelling, a salesman employed by Maccaferri and arranged to meet with him at the site to discuss the erosion control problem to be treated. Mr. Schelling also was informed by Mr. Rudisell that SHA planned to correct the erosion problem with its own work forces.

Mr. Schelling offered to prepare some recommendations for Mr. Rudisell's consideration. In order to assist this effort, Mr. Schelling asked Mr. Rudisell for cross sections[3] of the existing stream channel. This information was never provided to Mr. Schelling. Instead, Mr. Schelling was given a copy of certain engineering drawings prepared for the 1965 transition of U.S. Route 40 into a divided highway. Although these drawings depicted the stream channel as it presumably existed at the time of the modification to U.S. Route 40, the stream channel was not shown to scale. With this limited information, Mr. Schelling, on behalf of Maccaferri, prepared and

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[2]Gabions are stone filled wire baskets. The baskets, in this instance, were required to be fabricated out of galvanized steel. When filled with stone, the baskets were wired (sewn) shut thereby allowing the enclosed stones to resist the flow of water as a unit. (Tr 132). The individual baskets also were sewn together to form a monolithic structure of substantial strength.

[3]Cross sections are plotted from survey notes and depict, at a given point or station, the existing ground line. The survey is conducted by establishing a base line and then determining the ground elevations at measured offsets to this base line. The offsets, in this case, were measured to the top, middle and bottom of the bank along both sides of the channel and to the middle of the channel bottom. (Tr 143-44; Exh 1, Adm 52).

submitted four design drawings. A cost estimate of the materials necessary to accomplish the project also was forwarded to SHA. Mr. Schelling did not intend that either the drawings or the estimate be used as a basis for obtaining competitive sealed bids. (Tr. 32).

Mr. James Welsh, the area engineer for SHA District Seven construction projects, received the drawings and estimate prepared by Mr. Schelling. Without verifying the accuracy of these drawings, Mr. Welsh submitted them to the District Engineer, Mr. Carl Raith, for his review. Although it is not altogether clear from the record, it appears that it was Mr. Raith who thereafter decided to seek competitive bids for the performance of the gabion work rather than have his own forces attempt the work. Further, Mr. Raith directed Mr. Welsh to prepare the invitation for bids (IFB).

B. Solicitation of Bids and Award of Contract

The IFB prepared by Mr. Welsh included a contract form, bond and proposals forms, and the Special Provisions applicable to the project. Prospective bidders expressly were informed in the IFB Special Provisions that the work specified was to be performed in accordance with the SHA "Specifications for Materials, Highways, Bridges, and Incidental Structures" dated March 1968 and the May 1975 supplement thereto. Four contract drawings (Plans) also were prepared and distributed as part of the IFB.

The contract Plans essentially were the same as those prepared by Maccaferri's salesman, Mr. Schelling. SHA simply changed the title blocks to delete the name of Maccaferri and indicate instead the SHA project name and number. A location map for the project also was added, together with a stamp which shows that the Plans were reviewed and approved by the SHA District Seven Engineer, the Assistant Chief Engineer for Design, and the Chief Engineer.

Prior to the preparation of the contract Plans by Mr. Schelling, a survey of the existing drainage channel was conducted within the project limits by the District Seven Survey Party Chief, Mr. Denver Harvey. Cross sectional data was taken every 100 feet for the 3,400 foot project. This data, however, was not plotted by SHA prior to either approving the design or awarding the captioned contract. Bidders likewise were not made aware of its existence.

The IFB proposal form contained the unit price items on which bids were to be furnished. The unit price items were as follows:

Item No.	Approximate Quantities	Description of Items	Unit Price	Amount
301	200	linear feet of straw bales for sediment control		

302	5,700	cubic yards of 12 in. stone filled wire basket for channel protection - class 4
303	5,600	cubic yards of 36 in. stone filled wire basket for channel protection - class 4[4]

Award was to be made to the responsive and responsible bidder who submitted the lowest aggregate bid for the three unit price items.

Appellant received a copy of the IFB in late Spring, 1978. Mr. Xavier McGeady[5], on behalf of Appellant, studied the IFB requirements and then visited the job site. Thereafter, he was responsible for estimating the number of gabion baskets necessary and converting this number into cubic yards of material for purposes of submitting a bid on the SHA proposal form. Mr. Eamonn McGeady, Appellant's President, prepared an independent estimate and compared it with that completed by his brother, Xavier. Differences in the respective estimates then were reconciled and a final bid of $565,200 was submitted by Appellant. On June 27, 1978, bids were opened by SHA and Appellant was identified as the low bidder. Appellant ultimately received a contract award on September 28, 1978 and began work in October 1978.

C. Scope of Work Required By Contract

For purposes of measuring distances and determining a point of reference, a base line was established along the center of the westbound lanes of U.S. Route 40 and was depicted on the contract Plans. This project involved the construction of gabions for channel protection in the median of U.S. Route 40 between baseline stations 86+50 and 121+00.[6]

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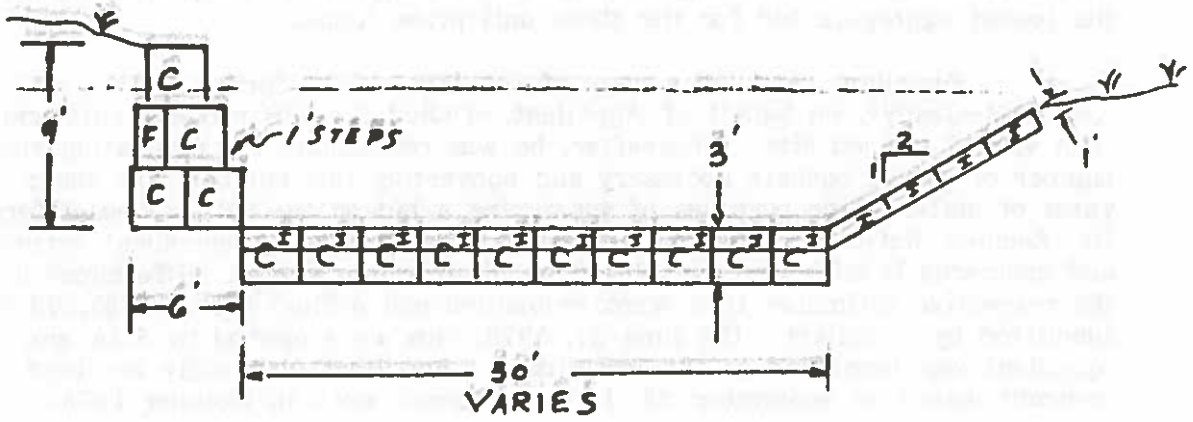
[4]As will be discussed later, the contract Plans specified three types of gabions. Item 302 appears to refer to an I type gabion while item 303 appears to refer to a C type gabion. The record is unclear as to how the F type gabions were to be paid for under the unit price list.

[5]Xavier McGeady is a licensed architect and engineer. He serves as Vice-President and Secretary of Martin G. Imbach, Inc. and also acts as the chief engineer for the company. In this capacity, Mr. McGeady has bid and supervised construction of a number of stream channelization projects using gabions.

[6]The distance between stations along U.S. Route 40 West is 100 feet. The total distance of the project thus would approximate 3450 feet.

Station 86+50 corresponds to the east headwall of an existing box culvert located in the drainage channel. Storm water flows from the box culvert into an open stream channel at this point and continues in an easterly direction towards station 121+00. Between stations 86+50 and 95+50, the contract drawings called for a particular gabion configuration described as "section A-A." This section appears as follows:



See contract Plan sheet 3 of 4 (Exh. 4D). The C, F and I gabions comprising this and other typical sections under the contract were to have the following dimensions:

C - 12' x 3' x 3'
F - 12' x 3' x 1.5'
I - 12' x 3' x 1'

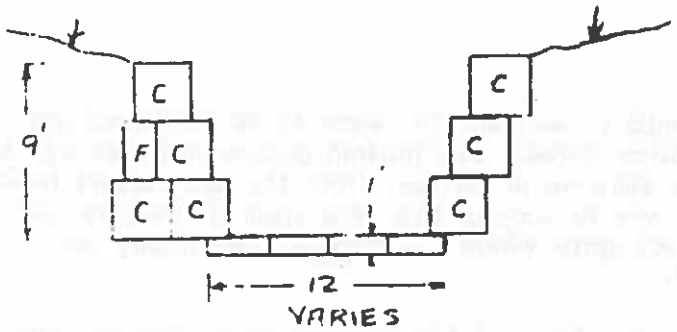
In constructing section A-A at station 86+50, the contract Plans expressly provided that the gabions on the south side of the channel be placed in a vertical configuration at the wingwall of the existing box culvert. Thereafter, the south gabion wall was to transition to the configuration shown on the left side of section A-A over a distance of 24 feet. The contract Plans further stated that the width of section A-A, along the channel bottom, was to vary from 30 feet at the box culvert to 12 feet at station 95+50. The three foot deep C gabion used in forming a mattress type structure in the channel bottom was to change to a one foot thick I gabion at a point 24 feet from the box culvert. In the area where three foot thick C type gabions were to be placed in the channel bottom, the surface was to be grouted with four inches of concrete.

The final contract requirement for construction of section A-A and other typical sections under this contract was set forth under Specifications §35.06-3A (4) (May 1975 Supplement) as follows:

> Class 4[7] Stone Filled Wire Basket Channel Protection. Prior to the installation of the basket units the channel at the toe of slope and the slope itself shall be formed to the neat line subgrade by excavation or filling. All loose material shall be removed. Any buried debris protruding from the subgrade that will impede the proper installation and final appearance of the basket units shall be removed and the voids carefully backfilled and compacted as directed by the Engineer. All unsuitable material within the payment limits shown on the plans shall be removed and replaced with acceptable excavated material as ordered by the Engineer. . . .

The cost of performing this work was to be included as part of the unit price for installation of the gabions. See Special Provisions, p.13.

Between station 95+50 and an existing box culvert located at station 98+75 (Bowers Road), the contract next required construction of a gabion configuration described as a "section B-B". This section appears as follows:



As is apparent, the left hand side of this section requires that the south gabion wall be the same configuration as in section A-A. The north gabion wall, however, is distinctly different from the 2:1 slope[8] required by section A-A. Contract Plan sheet number 4 of 4, therefore, requires that the transition from slope to vertical wall, at station 95+50, be accomplished by feathering, i.e. gradually moving from slope to vertical wall. The contract also provided that the bottom width of the channel was to vary from 12 feet at station 95+50 to 35 feet at station 98+00.

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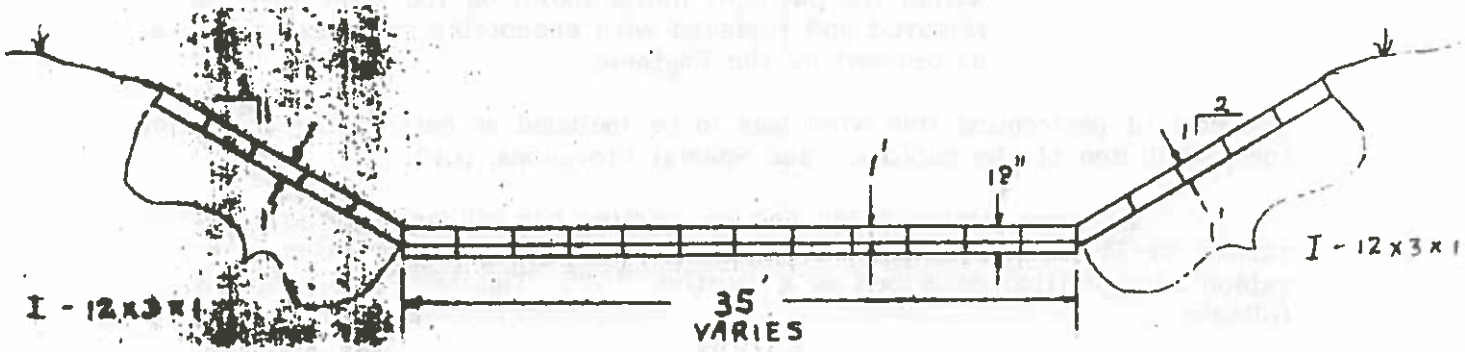
[7]There is no dispute that this project required class 4 stone filled wire basket channel protection. (Tr 214).

[8]A 2:1 slope refers here to a ground line which runs two feet horizontally for every one foot of elevation rise.

The Bowers Road box culvert ran to station 99+50 and no gabions were to be placed within this structure. Work contractually was to resume at station 99+50 and from this point to station 103+00, gabions were to be installed in a configuration described as a "section C-C". This section appears as follows:



The sloping walls of section C-C were to be feathered into the existing box culvert at station 99+50. The bottom gabion mattress was to be 18" deep (F gabions) for a distance of 24 feet from the box culvert headwall. The channel bottom width was to vary in this area from 35 feet to 20 feet, although the contract did not state where the channel specifically was to measure either 35 or 20 feet.

The remainder of the contract work may be summarized as follows:

1. From Station 103+00 to 110+00, section A-A was to be constructed. The south side wall was to be feathered from slope to vertical.
2. From Station 110+00 to 116+00, section B-B was to be constructed. The north side wall was to be feathered from slope to vertical.
3. From station 116+00 to the existing box culvert located at station 121+00, section A-A was to be constructed. The north side wall was to be feathered from vertical to slope. Gabions were to be keyed into culvert retaining walls.

D. Performance of Contract Work

1. Installation of Gabions

Work began at project station 86+50 on October 31, 1978. (Tr 56). As we previously have found, construction between stations 86+50 and 95+50 essentially[9] was to consist of gabions in a section A-A configuration. SHA

admits that its project engineer[10] directed Appellant to reduce the height of the nine foot gabion wall, required by section A-A, to a height suitable to meet existing terrain. (Exh. 1, Adm. 242, 254; Tr. 45). Specifically, this change was ordered between stations 87+00 to 91+65 resulting in the south vertical wall being reduced to as little as three feet in height.

The north side of the channel between stations 86+00 and 95+50, with two exceptions, was built as designed. The first exception occurs at station 87+00 and vicinity where a vertical wall was constructed rather than the specified 2:1 slope. The vertical wall was required by SHA in order to provide a smooth transition between the north wingwall of the box culvert and the 2:1 slope mandated by section A-A. The second exception occurred between stations 94+30 and 95+50 (continuing to 95+80) where a section substantially similar to section B-B was constructed as directed by the SHA project engineer.

The gabion mattresses were installed in the channel bottom between stations 86+50 and 95+50 essentially as designed. However, the three foot mattress thickness, required for the first 24 feet of the channel bottom as it proceeded downstream from the existing box culvert at station 86+50, was carried to at least station 87+00.

Turning next to the area of contract work between stations 95+50 and 98+75, the contract Plans clearly show of an existing box culvert beginning at station 98+75. Two wingwalls whose apparent purpose was to channel the flow of water into the box culvert also are depicted. The north wingwall is approximately 25 feet in length. The south wingwall, however, runs for approximately 245 feet to station 95+80 (Exh. 4A). Notwithstanding the fact that the south wingwall extended nearly the entire distance from stations 95+50 to 98+75, a section B-B gabion configuration was specified for this full length.

During construction, Appellant was directed by the SHA project engineer not to construct a gabion wall in front of the south wingwall from stations 95+80 to 98+75. (Exh 1, Adm 243, 255). Accordingly, the vertical gabion wall called for was feathered into the end of the south wingwall at station 95+80, leaving the existing wingwall to serve as the south channel boundary.

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[9]Again, as discussed, some variations were to occur beginning at the culvert and proceeding for the first 24 feet into the channel. Supra. at p. 7.

[10]SHA's project engineer initially was Mr. William Adams who served in this capacity from the outset of construction until approximately April 10, 1979 when he was replaced by Mr. Paul Brode. At this time, work had proceeded to a point just west of Bowers Road. (Exh. 1, Adm. 230 - 232; Tr 59).

The north channel wall from stations 95+50 to 98+75 also was constructed in a manner different than required by the contract Plans. While a wall consisting of three C type gabions vertically stacked was specified for this area, SHA's project engineer directed that a 2:1 slope be constructed through Station 97+00. (Exh 2, p.4). This sloping gabion wall thereafter was transitioned into a vertical gabion wall at station 98+00 which ultimately was feathered into the box culvert wingwall. It also is noteworthy that between stations 96+00 and 97+00, no gabions were installed along the north channel wall due to the encountering of a solid rock mass. (Tr 394).

The gabion mattresses along the channel bottom between stations 95+50 and 98+75 again were placed in the configuration specified. A number of sections did require substantially more excavation or fill than would have been necessary for mere shaping.

Gabion construction resumed at station 99+50, the east end of the existing box culvert. Between stations 99+50 and 101+50, the contract drawings clearly depicted, in plan view, a wingwall along the north bank of the drainage channel. A shorter wingwall, approximately 25 feet long, was shown along the south bank leading from the culvert. Although a section C-C was specified for gabion construction between stations 99+50 and 103+00, this was never built. Instead, the south gabion wall between stations 99+50 and 103+00 was constructed as a vertical wall in the manner specified for the south wall of a section A-A configuration. This wall further was reduced in height at station 103+00 to conform to the existing terrain. (Exh 2, p.4; Exh 9). Along the north bank between stations 99+50 and 103+00, the 2:1 slope required by the contract Plans was not constructed where the wingwall existed. A vertical gabion wall was constructed at the end of the wingwall, however, and thereafter was feathered into a 2:1 slope.

The streambed channel between stations 103+00 and 110+00 contractually was required to be lined with gabions configured as described in section A-A. This essentially is what was constructed. The SHA's project engineer, however, did direct Appellant to reduce the height of the south gabion wall where necessary to conform to existing terrain. (Exh 2, p.4; Tr. 225).

The contract Plans called for section B-B gabion construction between stations 110+00 and 116+00. With one minor exception, this is what was built. Instead of the gabion mattresses extending beneath the vertical gabion walls on both sides of the channel as specified, SHA directed that the mattress bottoms be placed in line with the base of the walls. (Tr. 228).

Finally, the channel work between stations 116+00 and 121+00 was required to consist of gabions placed in a section A-A configuration. What actually was constructed was a section B-B configuration with the bottom mattresses being placed in line with the base of the walls. This change was directed by the SHA engineer in order to assure a smooth transition to the existing box culvert retaining walls which began at station 119+50. (Exh 2, p.4). These retaining walls extended back from the box culvert approximately 150 feet. Between these retaining walls, the SHA project engineer further directed that gabion mattresses be placed along the stream bottom up to and abutting the north and south retaining walls. No vertical gabion walls were permitted to be built in this last 150 feet of the project where the concrete retaining walls existed.

In performing the foregoing work, Appellant placed 8,174 cubic yards of gabions. (Exh 1, Adm. 283). This is 3,126 cubic yards less than the 11,300 cubic yards estimated by SHA in the bidding documents.

2. Alignment/Widening of Stream Channel

With regard to the alignment of the streambed channel, the contract did not require any improvement or change to the existing channel. Nevertheless, in the installation of vertical gabion walls, it is common practice to set a visual reference point so as to assure that the baskets properly are aligned. (Tr 68-71). This process would tend to have a straightening effect on a natural stream channel and we so find.

Our examination of Appellant's exhibit 9 is consistent with the foregoing finding. This exhibit superimposes the as-built gabion structure over the original stream bed ground line as surveyed every 100 feet between stations 87+00 and 121+00. What is apparent is that the as-built gabion mattresses placed in the channel bottom substantially were contained within the original streambed. However, it also is clear that the width of the original streambed was altered in many places so as to provide a fairly uniform width throughout the project. By constructing the gabions in this manner, the completed project again would appear to an observer to be straighter than the original channel.

The following chart compares the contract channel width requirements to the preconstruction channel width and the width of the channel as constructed under this contract[11]:

STATION	CONTRACT WIDTH REQ (FT)	ORIG CHANNEL WIDTH (FT)	AS-BUILT CHANNEL WIDTH (FT)
86+50	30.0	Unknown[12]	Unknown
87		16.0	26.5
88		17.0	13.5
89		16.5	13.5
90		15.5	15.0
91	VARIES	16.0	13.5
92		20.0	14.0
93		23.0	13.0
94		15.0	14.0
95		19.0	13.0
95+50	12.0	Unknown	Unknown
96		11.5	12.0
97	VARIES	11.5	10.5
98		26.0	26.0

[11]The original channel width and the as-built channel width were scaled from Appellant's exhibit 9. All widths were measured along the channel bottom. Scaled dimensions have been rounded to the nearest 0.5 feet.
[12]Unknown simply means that survey data was not taken.

99	NO WORK REQUIRED (CULVERT)		
99+50	35.0	Unknown	Unknown
100		23.0	26.5
101	VARIES	23.0	24.0
102		15-22[13]	20.0
103	20.0	13.5	17.5
104		14.0	17.5
105		16.5	17.0
106		13.0	17.0
107		15.5	17.0
108		21.5	17.5
109		14.5	17.0
110		10.5	15.0
111		14.0	14.2
112		12.0	15.0
113		14.0	15.5
114		19.0	14.5
115	VARIES	16.5	14.5
116		16.0	15.5
117		16.0	14.0
118		21.0	15.0
119		14.5	15.0
120		38.5	38.5

3. Excavation and Backfill

Appellant's exhibit 9, in addition to superimposing the completed gabion structure over the preconstruction ground line of the stream channel, depicts the gabion structure as designed. SHA agrees with the information plotted, except at stations 89+00, 96+00 through 101+00, and 117+00. (Tr 117). These exceptions apparently are based on SHA's contentions that the gabion walls contractually were required to be reduced to meet existing terrain and that no gabions were required in front of existing wingwalls. Regardless of these exceptions, however, cross sections for the remainder of the job do indicate that excavation and fill were performed to an extent different than would have been necessary had the contract been constructed as designed.[14]

E. Authority of SHA Officials to Direct Changes to Contract Performance

Pursuant to Specifications §§10.04-5 and 10.05-16, the Engineer may order changes to the contract. The "Engineer" is defined under the contract General Provisions as "[t]he Chief Engineer, or other engineer executive of the State Highway Administration, acting directly or through his duly authorized representative, such representative acting within the scope of the particular duties assigned to him or of the authority given him."

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[13]Original channel bottom not well defined.

[14]Some of the excess fill material shown on exhibit 9 was performed by SHA work forces. Exhibit 9 also does not reflect areas where excavation was reduced as a result of changes. (Tr. 331-334).

The SHA project engineer, acting with the concurrence of his area engineer, had authority on this project to order field changes. (Tr 376, 433). Any "significant" changes, however, were required to be reviewed with the District Engineer and his assistant. (Tr. 434). The SHA District Engineer, Mr. Raith, testified that there were no written or specific guidelines for determination of what constituted a significant change. While neither Mr. Raith nor his assistant, Mr. Fritz, could recall whether they discussed all project changes with the area engineer, it is admitted that Mr. Raith approved all changes made in the construction of this project. (Exh 1, adm. 261).

F. Evolution of Dispute

Contract work was completed on or about September 7, 1979. (Exh 1, adm. 275). At no time prior to this date did Appellant notify the SHA Engineer that it intended to file a claim with regard to the changes complained of here. Notice of a claim ultimately was given by letter dated September 24, 1979. The claim, itself, was forwarded to the SHA District Seven Engineer by letter dated January 22, 1980. Appellant's claim thereafter was denied both by the SHA's District Engineer and Chief Engineer. The decision of the Chief Engineer was approved by the State Highway Administrator by letter dated August 4, 1980 and, on this same date, an appeal to this Board was taken.

Appellant's Mr. McGeady testified that he was aware of contract changes on a day to day basis. (Tr 324). However, Mr. McGeady viewed the contract as one which required the installation of approximately 11,300 cubic yards of gabions. It was not until the end of the contract work that Mr. McGeady allegedly was able to determine the degree to which gabion placement was diminished below the estimated amount.

Decision

Appellant has identified three directives by SHA employees which allegedly resulted in a substantial reduction in the quantity of gabions installed under the contract. These directives were to: (1) reduce the planned height of gabion walls in certain areas of the project as necessary to meet surrounding terrain; (2) eliminate the installation of gabions in front of concrete wing-walls; and (3) straighten and realign the stream channel bottom. With regard to the first two directives, SHA admits that they were issued but denies that they represented compensable changes to the contract. SHA also denies having given the third directive and contends that this work was performed in accordance with standard trade practice.

Addressing first the reduction in height of gabion walls at various points along the project, we find this to be a directed change to the requirements of the contract. The contract Plans specified the construction of certain gabion sections at each point along the stream channel. Although a typical gabion section was depicted on sheet 3 of the contract Plans showing a configuration for use where the existing terrain intersected the south gabion wall at a height of only six feet, the Plans indicated neither the specific location at which this typical section was to be used nor the existing channel contours. In view of the express language contained elsewhere on the contract Plans concerning the gabion configuration to be employed at each point

along the project, Appellant acted reasonably in preparing its bid in accordance with the design provided by the SHA which called for gabion wall heights of nine feet along much of the south side of the stream bed channel. Appellant further was reasonable in concluding that the typical section providing for six foot walls, if used at all, would have an insignificant effect on the gabion materials required.

In directing Appellant not to install gabions in front of the concrete wingwalls on the project, SHA contends that it merely was enforcing the provisions of the contract. Specifications section 35.06-3 B.4 (May 1975 Supplement) provided, in pertinent part, that "[t]he contractor shall cut, shape and fit the wire basket units at the existing box culverts and end walls." This, argues SHA's counsel, requires that gabions be vertically aligned with the culvert wingwalls and not placed in front of them.

There is nothing in the record to define the term endwall and establish that it is synonomous with the term wingwall. Assuming, arguendo, that SHA is correct, however, the foregoing provision is not controlling necessarily. Pursuant to Specifications sections 10.04-2 and 10.05-4, the contract Plans shall govern over the Specifications in the event of a discrepancy. Thus, to the extent that the contract Plans specifically require the placement of gabions in front of concrete wingwalls, Appellant was reasonable in interpreting the contract in such a manner.

The contract Plans show three box culverts affecting the project. These box culverts are located at the starting point of the project at station 86+50, at Bowers Road between stations 98+75 and 99+50, and at the terminus point for the project at station 121+00. Each of these box culverts is associated with concrete wingwalls of varying dimensions. In order to determine the contract requirements, it is essential to review what the Plans specified at each box culvert.

At station 86+50, sheet 3 of the contract Plans (Exh. 4D) indicates that a section A-A gabion configuration is to be constructed. The south wall of this section was ". . . to have a vertical face at [the] wing wall of [the] culvert with a 24 foot transition to its typical shape." It is unclear from the foregoing whether the gabions were to rest vertically against the wingwall or be aligned therewith. Further, no mention is made as to the relationship between the gabions to be installed on the north side of the channel and the north wingwall.

Moving next to the Bowers Road box culvert, the contract Plans provide for a section B-B configuration of gabions west of the box culvert. This configuration calls for vertical gabion walls on both sides of the channel. Notwithstanding the fact that a concrete wingwall is shown on the plans as extending for over 200 feet along the south side of the channel, no instruction is given for transitioning the gabion wall into the concrete wingwall.

East of the Bowers Road box culvert, a section C-C configuration was called for in the contract Plans. The Plans further showed a 200 foot existing wingwall on the north side of the channel and a shorter wingwall on the south side. The only instruction provided in the contract Plans was that the "gabions be feathered into the culvert." The culvert, as clearly labeled on

the contract Plans, appears as a separate structure from the wingwalls. If one were to feather the gabions into the culvert, one necessarily would have to put them in front of the concrete wingwalls.

Finally, we turn to the existing box culvert at station 121+00. Although a section A-A was required in this area, the contract Plans instructed Appellant to "[k]ey [the] sides into [the] culvert retaining walls." What this means from an engineering standpoint, however, is not in the record. Although the SHA in its brief argues that it means to align the gabions with the end of the retaining walls, this is not so obvious as to be acceptable as fact.

At best, we find that the contract is ambiguous as to its intent with regard to the relationship between the gabion walls and the concrete walls. Although SHA argues that the placement of gabions in front of sound concrete walls is patently unreasonable, Appellant's Mr. McGeady testified that it has been done in a number of recent local projects. (Tr 371). In fact, it is undisputed that Appellant on this project was directed to place gabions in front of an existing concrete wingwall at station 98+00. For these reasons, we cannot say that Appellant's interpretation was unreasonable.

The question arises, however, whether any ambiguity as to the placement of gabions was so glaring as to impose a duty upon Appellant to inquire prior to bid. This duty was explained by the U.S. Court of Claims in Blount Brothers Construction Co. v. United States, 171 Ct.Cl. 478, 496-97, 346 F.2d 962 (1965) as follows:

> . . . However, contractors are businessmen, and in the business of bidding on government contracts they are usually pressed for time and are consciously seeking to underbid a number of competitors. Consequently, they estimate only on those costs which they feel the contract terms will permit the government to insist upon in the way of performance. They are obligated to bring to the Government's attention major discrepancies or errors which they detect in the specifications or drawings, or else fail to do so at their peril. But they are not expected to exercise clairvoyance in spotting hidden ambiguities in the bid documents, and they are protected if they innocently construe in their own favor an ambiguity equally susceptible to another construction for as in Peter Kiewit Sons' Co. V. United States, 109 Ct.Cl. 390 418 (1947), the basic precept is that ambiguities in contracts drawn by the Government are construed against the drafter. In the case before us the ambiguity was subtle, not blatant; the contractor was genuinely misled and not deliberately seeking to profit from a recognized error by the Government. Under these circumstances the contractor falls within the scope of the recognized formula. (Underscoring added).

The key to our inquiry thus concerns whether Appellant acted both reasonably and in good faith in construing the ambiguity in its favor.

The record indicates that Appellant's bid was premised upon the placement of gabions in front of the concrete wingwalls existing on the projects. In estimating the cubic yards of gabion materials necessary to construct the project in this manner, Appellant determined that approximately 11,000 cubic yards of material were required. This favorably compared to the 11,300 cubic

yards estimated by SHA and reinforced Appellant's interpretation. Under these facts, we find Appellant's construction of the ambiguity to be innocent and reasonable and thus concomitantly find that no duty to inquire was present. This, after all, was a unit price contract and Appellant had satisfied itself that the contract work would indeed require the quantities estimated by SHA. For the foregoing reasons, therefore, any ambiguity as to the placement of gabions must be construed against SHA. See WPC Enterprises, Inc. v. United States, 163 Ct.Cl. 1 (1963).

Although we have found the directives pertaining to the reduction in wall height and the elimination of gabions at wingwalls to be changes to the contract Plans, SHA contends that its liability for such changes is limited by Specifications section 10.04-3. This provision provides, in pertinent part, as follows:

> The Engineer reserves the right to make such alterations in the Plans and/or in the character of the work, or in the quantities stated in the Proposal as may be considered necessary, provided all such alterations are in writing and provided further that a Supplemental Agreement between the The State Highway Administration and the Contractor will be necessary when such alterations involve:
>
> (a) An increase or decrease of more than 25 per cent of the total cost of the work, calculated from the original Proposal quantities and the Contract unit prices, or
>
> (b) An extension or decrease of more than 25 per cent, or
>
> (c) An increase or decrease of more than 25 per cent in the quantity of any major Contract item except structure excavation and items of piling, or
>
> (d) An increase or decrease in the total of all minor Contract items, of more than 25 per cent of the original value of the Contract, or
>
> (e) An alteration in design and/or alteration, either vertical or horizontal, in locations which causes a substantial change in:
>
> 1. Character of work
> 2. Type of Construction
> 3. Type of materials encountered
>
> "Deepening of bridge foundations excepted."
>
> Alterations involving an increase in quantity of any one minor Contract item to the extent of changing its classification to that of a major Contract item will not require a Supplemental Agreement unless the new total there of [sic] exceeds by more than 25 per cent the amount of the lowest major contract item.
>
> Only the increases above the 25 per cent figure or decreases below the 25 per cent figure, referred to in sub-sections (a), (b), (c), (d) and (e) above, shall be covered by a Supplemental Agreement, otherwise the contract provisions shall apply.

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> Such alterations as provided for in this section shall neither waive any conditions of the Contract nor invalidate any of the provisions thereof except as may be specifically stated in the said Supplemental Agreements. (Underscoring added.)

Of further significance is Specifications section 10.09-3 which states that:

> Should any contract items contained in the proposal be found unnecessary for the proper completion of the work contracted, the Engineer may, upon written order to the Contractor, eliminate such Contract Items from the Contract under the terms and conditions described under Section 10.04-3 "Increased or Decreased Quantities and Changes in Plans or Character of Work." Such action shall in no way invalidate the Contract and no allowance will be made for items so eliminated in making final payment to the Contractor except as stipulated in said Section 10.04-3 and/or for such work as may have been done, materials actually delivered and bonafide equipment costs prior to notification of the elimination of the items.

Thus, regardless of whether a pay item quantity results from a work deletion or a contract change, any adjustment to the contract is to be made pursuant to Specifications section 10.04-3. We agree with SHA that Specifications section 10.04-3 effectively limits SHA's liability here to the additional costs of performing those quantities which fall below 75% of the amounts estimated in the solicitation.

Appellant argues, however, that Specifications section 10.04-3 is inapplicable since SHA breached an implied warranty that the Plans were adequate and sufficient to satisfactorily perform the project and that SHA otherwise breached the contract by ordering changes which were not within the scope of the contract. These contentions will be reviewed seriatim.

A contracting authority impliedly warrants that the plans and specifications which it furnishes are adequate and sufficient for the purpose intended. Dewey Jordan v. Md. Nat'l Cap. P. & P., 258 Md. 490, 497-98 (1970); United States v. Spearin, 248 U.S. 132 (1918). Here SHA furnished its bidders with contract Plans and Specifications and, in so doing, warranted that if the said provisions were followed, the job successfully could be completed. Appellant admits that it could have built the job as designed. Further, the record does not indicate that Appellant incurred any additional costs or delay in attempting to perform under the original Plans and Specifications. When SHA changed portions of the design during performance, these changes did not require Appellant to tear out and reconstruct any portion of its work and Appellant otherwise was able to perform in the manner provided for by the revised Plans. Accordingly, the implied warranty as to the adequacy of SHA's design was not breached. Appellant's costs were affected only by the unilateral changes ordered by SHA.

Turning to Appellant's other breach claim, we must determine whether the changes ordered were consistent with the general scope of the contract. A change which would alter the general scope of the contract clearly would not be considered as within the contemplation of the parties at the time of contract and its imposition would constitute a breach of contract. Appeal of American Cooperage & Steel Drum, Inc., Docket No. MSBCA 1050 (April 20, 1983); compare Air-A-Plane Corp. v. United States, 152 Ct.Cl. 557, 561-63 (1961); Freund v. United States, 260 U.S. 60 (1922). In determining whether a change or group of changes is beyond the scope of the contract, there is no inflexible formula. "A determination of the permissive degree of change can only be reached by considering the totality of the change and this requires recourse to its magnitude as well as its quality." P.L. Saddler v. United States, 152 Ct.Cl. 557, 561-63 (1961).

Here the SHA changes reduced gabion quantities by no more than 27.7%.[15] The project length remained the same as did the essential nature of the work. Given also that Specifications section 10.04-3 permitted unilateral changes reducing quantities by up to 25% without an adjustment to contract price, we cannot say that the magnitude and quality of the changes made here required the performance of work so substantially different from that bargained for as to have constituted a breach of contract. See Aragona Construction Company, Inc. v. United States, 165 Ct.Cl. 382 (1964).

Payment under the captioned contract, with minor exception,[16] was to be made on the basis of the number of cubic yards of gabions placed by Appellant. The total number of gabions required under the contract thus represented important information to Appellant when making its bid. Aside from any effect the quantity estimate had on the pricing of materials, an accurate estimate was essential in order to facilitate the allocation of overhead costs to the work performed. In a unit price job such as this, if the quantities actually placed were to fall below the amount reasonably anticipated, overhead costs would not be absorbed fully by the contract work.

With these facts in mind, we consider whether Appellant is entitled to recover its increased costs resulting from the diminution in gabion quantities under a theory of misrepresentation. Appellant submits, in this regard, that: (1) it had a right to rely on an implied representation that SHA had prepared its contract Plans and quantity estimates in a careful manner and had based them on all relevant information in its possession; (2) it relied on this representation and the SHA quantity estimate in preparing its bid; and (3) it was damaged as a result of SHA's negligent misrepresentation.

SHA initially contends that Maryland law does not permit recovery for misrepresentation except upon a showing that, among other things, an erroneous representation was made for the purpose of defrauding the person

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[15]The estimated quantity was 11,300 cubic yards of gabions and the actual quantity installed was 8,174. Assuming that the entire difference was due to these changes, the reduction is 27.7%.

[16]The only exception was payment for the straw bales necessary for sediment control. Payment for this item was to be made on a linear foot basis with an estimated total cost of $200.

claiming to be injured thereby. Gittings v. Von Dorn, 136 Md. 10, 109A.553 (1920). While this may be a correct statement of the law as it relates to an action brought in tort, the intent to mislead is not an essential element of actionable misrepresentation in a breach of contract context. This was the holding in Raymond International, Inc. v. Baltimore County Maryland, 45 Md. App. 247 (1980) wherein the Court of Special Appeals determined that Baltimore County had included subsurface information and quantity estimates in an invitation for bids (IFB) which its consultant knew or should have known were incorrect. This knowledge of error was imputed to Baltimore County. In view of the positive representation made in the IFB as to the quantities of concrete to be required and the difficulty which the contractor would have had in verifying this data, the contractor was found to have reasonably relied on these representations in preparing its bid. When the actual quantity of concrete placed by the contractor later was determined to be substantially less than that estimated in the IFB, the contractor was permitted to recover its additional costs notwithstanding the existence of certain exculpatory clauses requiring bidders to verify all quantities and subsurface conditions by actual inspection. Compare Womack v. United States, 182 Ct.Cl 399, 411, 389 F.2d 793 (1968); Morrison-Knudsen Company, Inc. v. United States, 170 Ct.Cl. 712, 719 (1965).

SHA further contends that even if fraudulent intent need not be shown, recovery here cannot be had under a theory of misrepresentation since Appellant had no right to rely upon the quantity estimates provided in the solicitation. In this regard, the contract Special Provisions expressly provided that the ". . . quantities are approximate and unit prices bid shall apply regardless of any increase or decrease in the estimated quantities shown in the proposals." The quantities contained in the solicitation thus were said to be included solely to assist in the tabulation of bids.

In Womack v. United States, supra, the U.S. Court of Claims considered a similar claim for additional costs resulting from a substantial increase in the estimated quantities set forth in the contract. The contract in question expressly provided that "[a]ll estimated quantities in this contract are subject to a twenty-five per centum (25%) increase or decrease." Although the government agreed to pay the contractor for the additional costs incurred in processing items of work which exceeded the estimated quantity by 25%, it contended that the contractor assumed the risk of a 25% overrun under the terms of the contract. The Court of Claims, in rejecting the Government's position, stated as follows:

> An estimate as to a material matter in a bidding invitation is an expedient. Ordinarily it is only used where there is a recognized need for guidance to bidders on a particular point but specific information is not reasonably available. H.L Yoh Co. v. United States, 153 Ct.Cl. 104, 105, 288 F.2d 493, 494 (1961). Intrinsically, the estimate that is made in such circumstances must be the product of such relevant underlying information as is available to the author of the invitation. If the bidder were not entitled to so regard it, its inclusion in the invitation would be surplusage at best or deception at worst. Assuming that the bidder acts reasonably, he is entitled to rely on Government estimates as representing honest and informed conclusions. Snyder-Lynch Motors, Inc. v. United States, 154 Ct.Cl. 476, 479, 292 F.2d 907, 909-10 (1961). In short, in

promulgating an estimate for bidding-invitation purposes; the Government is not required to be clairvoyant but it is obliged to base that estimate on all relevant information that is reasonably available to it.

By adding a general variance in quantity provision to a bidding invitation for a fixed-price contract, the Government does not dilute the standard to which it is held with respect to particular estimates that it includes elsewhere in the invitation. In conjunction with an estimate, the proper office of such a general clause is to afford a flexibility sufficient to accomodate actual deviations from the estimate that are not reasonably predictable at the time that the estimate is made and during the time that it remains subject to reliance by the bidder. It embraces variations that are attributable to facts that are not among those reasonably available to the estimator. The latitude that it affords may not properly be used to excuse the estimator from using and disclosing relevant information that is reasonably available to him. Thus, it may be said that its role is to preserve the stability of a fixed-price contract despite fortuitous departures, up or down, from the estimated amount of work to be done.

In summary, the defendant overreaches when it says that the variance in quantity clause, within its percentage limits, put the risk of an index card overrun, whatever its cause and foreseeability, on the plaintiffs. Specifically, the clause apportions only a particular type of risk to the parties, the risk of an excess or shortage resulting from factors not reasonably apparent to them at the time that they entered into their contract. The clause does not require one party to bear the first 25 percent of the burden of the other party's negligence. (Underscoring added).

Accord Chemical Technology, Inc. v. United States, Ct.Cl. #354-78 (3/25/81), Ct.Cl. (1981); Solano Aircraft Service, Inc., ASBCA No. 20677, 77-2 BCA ¶12,584; Integrity Management International, Inc., ASBCA No. 18289, 75-1 BCA ¶11,235; American Maintenance and Management Services, Inc., ASBCA No. 18756, 75-2 BCA ¶11,407; Pied Piper Ice Cream, ASBCA No. 20605, 76-2 BCA ¶12,148; Timber Investors, Inc. v. United States, 218 Ct.Cl. 408, 587 F.2d 472 (1978).

Under the foregoing statement of the law which we find to be controlling, Appellant here had a right to rely on the implied representation that SHA's design and estimate of the gabion quantities were carefully prepared and based on all relevant information in its possession. Appellant contractually assumed the risk of any variations from this estimate only to the extent that such variations were attributable to information that reasonably was not available to SHA's estimator.

The SHA estimate of materials was prepared by Mr. William L. Schelling, a salesman for Maccaferri Gabions. This estimate was never verified by any representative of the SHA. (Exh 1, adm 167). Although Mr. Schelling requested that SHA furnish cross sections of the existing stream channel so that he could prepare his design and estimate, this data never was

provided. The only information given to Mr. Schelling was a plan view of the stream channel prepared 13 years earlier for the transition of U.S. Route 40 into a divided highway. This drawing was not to scale and the record does not indicate that any further attempt was made to determine the existing steam channel dimensions.

Prior to the design of the project the SHA's District Seven Office had ordered its survey party chief, Mr. Denver Harvey, to prepare a preliminary survey of the stream channel. Mr. Harvey thereafter obtained cross sectional data at every even station along the length of the project. This data was available to SHA prior to the preparation of the design and quantity estimates by Mr. Schelling. Inexplicably, however, this survey data was neither plotted nor used by SHA to verify Mr. Schelling's design and estimate.

The importance of the cross sectional data to the accurate preparation of an estimate cannot be overstated. As is apparent from Appellant's exhibit 9, the cross sectional data when plotted shows the width of the original streambed channel, the preconstruction slopes and heights of the channel sides, the elevation of the channel bottom at each station, and the location and heights of the box culvert wingwalls. If this data had been utilized by Mr. Schelling and/or the SHA, in conjunction with the design drawings prepared for the project, it would have been apparent that the required wall heights were higher than the surrounding terrain in certain areas and that the contract Plans were requiring that gabions be placed in front of wingwalls. Likewise, the width of the channel at each station accurately could have been determined. All of this information would have permitted a more accurate quantity estimate and, most likely, some refinements in the design. By ignoring this precise information and relying instead on a visual observation of the site, together with a 13 year old drawing of the channel which was not to scale, SHA and its estimator did not exercise the standard of due care which is required both in the preparation of contract plans and a quantity estimate for inclusion in an IFB.

We further find that Appellant acted reasonably in relying upon the SHA estimate. Eamonn and Xavier McGeady, Appellant's President and Vice-President respectively, independently made prebid estimates of the quantities of gabions required by the contract work. In so doing, the McGeadys utilized the information contained in the contract Plans prepared by Mr. Schelling. When their respective estimates were compared and the differences between the two reconciled, it was determined that approximately 11,000 cubic yards of gabions would be required. This quantity total sufficiently was close to the SHA estimate of 11,300 cubic yards so as to satisfy Appellant that the SHA estimate was reasonable and that its interpretation of the contract as to the placement of gabions was correct.[17]

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[17]In making this determination, we are not finding that Appellant actually allocated its overhead costs on the basis of installing 11,300 cubic yards of gabions. This is an issue which properly is reserved for the quantum phase of these proceedings.

SHA contends that Appellant should have realized from its site investigation and from the contract Plans that the gabions could not be and/or should not be installed as set forth in the contract Plans in those areas where concrete wingwalls existed. In this regard, the U.S. Court of Claims has stated that:

> . . . the contractor can rely upon the Government's representations as to how a desired product should and can be made, unless he ought to know better. In the latter situation, he cannot argue that he has been misled or that he had any right to make his bid on the basis of the specifications which he knew (or should have realized) were not correct. The rule is parallel to the ordinary defense to a suit for misrepresentation that the plaintiff did not, or had no right to, rely upon the challenged statement.

I.W. Foster Sportswear Co. v. United States, 186 Ct.Cl. 499, 405 F.2d 1285 (1969). Contrary to SHA's assertions, however, the record establishes, and we previously have found, that Appellant acted reasonably in assuming that gabions were intended to be placed in front of concrete wingwalls where required by the contract drawings. We further are satisfied that gabions generally could be constructed in the manner specified.

In making the foregoing finding, we are mindful that the contract Plans required gabions, at certain stations, to be constructed on a 2:1 slope in front of concrete wingwalls. Obviously this would have necessitated the removal of the concrete wingwall in most instances. While this is something which perhaps could have been accomplished, it is doubtful either that SHA desired this or that Appellant contemplated its performance at the contract price. Nevertheless, this again is the type of discrepancy which is not so glaring or patent as to have required Appellant to make inquiry prior to bid. This discrepancy only could have been discovered if cross sections were plotted or if Appellant had walked the length of the job and compared the contract Plans with the streambed channel at each station. If SHA did not put forth this type of effort in designing the job, or in estimating the quantities necessary for its performance, we see no reason why Appellant should have been required to do so in preparing its bid. Compare U.S. v. Spearin, supra.; U.S. v. Gibbons, 109 U.S. 200 (1983).

SHA finally contends that the contract permitted it to unilaterally change the contract Plans in such a manner as to alter the quantities. Where a diminution in quantities is due to such a change, it cannot be said that there was an actionable misrepresentation. However, the changes ordered here were necessary to correct design features and oversights which should have been obvious to SHA based on information within its sole possession prior to bid. In construction contracts there are enough risks and uncertainties which must be considered in the preparation of a bid so that a contractor further should not be asked or required to bear the risk of financial loss due to the negligent preparation of contract documents. Accordingly since SHA could have avoided the problems encountered here by acting with due care, they should not be permitted to escape the financial consequences of their failure to act by hiding under the skirt of the changes clause. For these reasons, we find that Appellant was entitled to rely upon the SHA quantity estimate and may recover any damages resulting from the misrepresentation thereof.

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We now turn to the alleged change involving the straightening of the channel. While this may have had some effect on the quantity of gabions to be placed, it more directly impacted the quantities of excavation and fill required to successfully perform the contract work.

As we previously have found, the stream channel width was made quite uniform in the area east of Bowers Road (stations 100 to 119). The contract, however imposed no such requirement. The contract Plans only specified that the stream channel width was to vary from 35 feet at station 99+50 to 20 feet at station 103. No contract width requirement existed after station 103.

Appellant's Mr. McGeady testified that SHA directed his forces to make the channel bottom, east of Bowers Road, a uniform width. SHA denies that such a direction ever was given and further argues that it is trade practice to install gabions by establishing a point downstream and aligning the gabions along a straight path to that point. Evidence of such a trade practice was provided through the testimony of Appellant's project manager, Mr. Baker (Tr. 68-73). However, the existence of such a practice does not establish the fact that gabions customarily are installed so as to provide a uniform streambed width. While the construction of a single gabion wall may require that stone filled baskets be aligned between two points, this is not to say that separate walls may not be skewed. How else would the stream dimensions transition between specific width requirements unless skewing (i.e. non-parallel installation) was permissible and practiced? Accordingly, we do not find that it is customary for gabions to be installed so as to provide for a uniform channel width.

SHA has admitted that the manner in which the gabions were installed in the area east of Bowers Road required more excavation and fill material than would have been necessary had Appellant performed in accordance with the contract Plans. (Findings of Fact, supra. at p. 15). We are asked to conclude, however, that Appellant performed this additional work as a volunteer. This we cannot do. The installation of gabions so as to create a uniform width along the streambed channel was more than the contract required. As stated by the General Services Board of Contract Appeals in the Appeal of M.S.I Corp., GSBCA No. 2428, 68-2 BCA ¶7276 at p.33,751, ". . . it is contrary to human experience and to prudent business practices for a contractor intentionally to volunteer work at his expense and for the sole benefit of the Government." Accordingly, we accept Mr. McGeady's testimony that the uniform width of the stream channel, east of Bowers Road, was accomplished as a result of an SHA directive.

Notwithstanding this finding, SHA contends that it is not liable for any increased costs resulting from such a change because the work was not ordered by an authorized representative of the SHA Chief Engineer.[18] However, SHA admits that its project engineer together with its area engineer had authority to order field changes. While the record is unclear as to the breadth of such authority, it is admitted by SHA that all changes made in the

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[18]This argument was made in the pleadings but has not been addressed by SHA in its posthearing briefs.

field ultimately were approved by the SHA District Seven Engineer who was the authorized representative of the Chief Engineer for this project. Accordingly, we are satisfied that any directives given, whether or not authorized, were at least ratified by an authorized representative of the SHA. Compare Hamburger v. Paul, 51 Md. 219 (1879); Gresham & Co. v. United States, 200 Ct.Cl. 97, 120, 490 F. 2d 542 (1972).

SHA finally contends that it is not liable for the increased costs of installing gabions to a uniform width because Appellant failed to give prompt notice. Prompt notice is required by Specifications section 10.05-16 (May 1975 Supplement) as follows:

> "Provision is made elsewhere in these Specifications to establish appropriate adjustments to quantities, prices and/or time allowances when necessary. Such provisions appear in Sections 10.04-3, 10.04-4, 10.04-5 and 10.08-8. Particular attention is called to the fact that it shall be the responsibility of the contractor to promptly notify the Engineer of the existence of conditions which he feels differ materially from those described by the Plans and/or Specifications. Where such notification has been given or where the Engineer finds it necessary to initiate changes as described in Section 10.04-3, the Engineer and the contractor will negotiate appropriate adjustments . . . (underscoring added).

We interpret the foregoing as requiring prompt notice in such situations as where a differing site condition is encountered or the contractor recognizes a defective design. Under such circumstances, prompt notice is imperative in order to permit the contracting agency to observe the conditions encountered and determine the least expensive solution. Without notice of such circumstances, the contracting agency further would be unable to defend against a claim or limit its liability. Compare Blankenship Construction Co. v. North Carolina State Highway Commission, 222 S.E.2d 452 (N.C. 1976); Schnip Building Company v. United States, Ct.Cl. #128-79C, (March 25, 1981), Ct.Cl. (1981). Notice under the clause expressly is not required, however, where the Engineer finds it necessary to initiate changes under Specifications section 10.04-3. This is what occurred here.

We recognize that Specifications section 10.04-3 requires the Engineer to order unilateral changes in writing. The law, however, is well settled that parties to a written contract subsequently can agree orally, through conduct or intimation, to a modification or waiver of provisions in their contract, notwithstanding a requirement that all changes be in writing. University National Bank v. Wolfe, 279 Md. 512 (1977); Hoffman v. Glock, 20 Md. App. 284 (1974); Freeman v. Stanbern Construction Co., 205 Md. 71 (1953).

SHA also complains that it has been severely prejudiced by the absence of notice. However, SHA ordered the changed work and knew it was being performed. Further, the existence of SHA survey data showing the original stream channel and the as-built channel presently enable SHA to determine accurately the additional excavation and fill necessitated by the extra work performed in making the channel a uniform width. Accordingly, we see no prejudice here.

In closing, it also should be noted that the cost of excavation and fill was to be subsumed in the unit price for gabions. What the preceding claim is concerned with, however, is the cost of excess excavation and fill resulting from the construction of the streambed to a uniform width east of Bowers Road. This clearly is extra work under Specifications section 10.04-5[19] and must be compensated for by means of an equitable adjustment.

For all of the foregoing reasons, therefore, Appellant's appeal both is sustained and remanded to the State Highway Administrator for negotiation of an equitable adjustment.

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[19]Specifications section 10.04-5 is entitled "Extra Work" and reads as follows:

> When required alterations involve work for which no quantity and price have been included in the Proposal, such work shall be done at a price agreed upon previously in writing by the Contractor and the Engineer, or where such price cannot be satisfactorily agreed upon by both parties, or where this method of payment is impracticable, the Engineer may, in writing, order the work done on a force account basis, to be paid for as specified in Seciton 10.09-4 of these Specifications.

The term "extra work" is defined in Specificatons section 10.01-1 as work which was not provided for in the original contract.