BEFORE THE
MARYLAND STATE BOARD OF CONTRACT APPEALS

IN THE APPEAL OF	)	
RICHARD F. KLINE, INC.	)	
	)	Docket No. MSBCA 2092
Under State Highway Administration	)	
Contract No. F-157-501-771	)	

April 14, 2000

Differing Site Condition - In determining whether a contractor has met its burden of proof to demonstrate the existence of a differing geological site condition (both type I and type II), while several elements must be satisfied, the Board does not require that the contractor be held to a degree of knowledge of the condition that a geologist would possess.

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Interim Opinion by Board Member Steel

This matter comes before the Board on Appellant Richard F. Kline, Inc.'s appeal from a procurement officer's determination to deny Appellant's claim for an equitable adjustment arising from an alleged differing site condition at the site of construction (the presence of diabase rock). The parties have requested that the Board render a decision on the question of entitlement only; they represent that should the Appellant prevail, that they will negotiate quantum. They are aware that therefore, this decision is not final, and will not be until modified by the parties' written agreement upon quantum or a final decision thereon by this Board. *The Driggs Corporation*, 348 Md. 389 (1998). The Board finds in favor of Appellant on entitlement.

Findings of Fact

1. On October 24, 1994, the Maryland State Highway Administration ("SHA") accepted bids for the relocation of Routes 194 and 550, creating a 1.8 mile bypass at Woodsboro, Maryland. The low bidder was Appellant Richard F. Kline, Inc. ("Kline") and Kline was awarded the contract.
2. This 1.8 mile bypass involved a significant amount of excavation, since it included a cut through a ridge (of varying dimensions, but to a depth of over 30 feet) in the Route 550 area. Rock was known to exist in this area of the ridge, and all parties understood that to effect the

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cut, blasting would be necessary.

3. Kline subcontracted its excavation work to AccuBid Excavation, Inc. ("AccuBid"). AccuBid subcontracted J. E. McKeever, Inc. ("McKeever") to perform blasting required at the proposed relocated Route 550 Cut area (hereinafter the 550 Cut). Hence, this is a pass-through appeal — McKeever and Accubid are the real parties in interest.
4. Kline seeks relief under GP-4.05, Differing Site Conditions, for "[s]ubsurface or latent physical conditions at the site differing materially from those indicated in the Contract" (Type I) or "[u]nknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered, and generally recognized as inherent in work of the character provided for in [the] Contract" (Type II).
5. GP 2.04, Site Investigation, obligates a contractor to "satisf[y] himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the State, as well as from information presented by the drawings and specifications made a part of [the] contract."
6. The Frederick Valley region geologically consists predominantly of massive limestone formations, of two types of limestone, known as the Grove formation and the Frederick formation. The Grove formation is thick-bedded to massive light gray limestone. The Frederick formation is fine-grained thick-bedded laminated limestone with dark grey shale.
7. All parties now agree that a small part of the rock formation within the 550 ridge, as explained by the geologist designer of the project, Mr. Boyer, consisted of an extremely dense material known as "diabase", running vertically and perpendicular to the proposed roadbed. Diabase is an igneous rock which was forced up under pressure through cracks in the limestone as it was pulled apart, causing a seam of this "salt rock" to outcrop at the surface. It was once molten, came up from very deep, intruded into a crack in the surrounding limestone, and it cooled and crystallized. This seam or dike of diabase runs with only occasional gaps from Pennsylvania to Montgomery County, Maryland. It is a very narrow seam running merely tens of feet wide, and is a very unusual "rock" formation. In fact, diabase is considerably harder than the most common rock in the area, limestone, through which the diabase dike runs, and can be seen (and was so seen by McKeever and AccuBid) as spherical boulders on the surface of the ridge. Although various diabase boulders were seen, Appellants were not alerted that such material would require different blasting techniques than were normally required in the Frederick Valley.
8. Not clear from examination of the material at the surface is an additional characteristic of diabase, that the rock formation not only contains boulders, but significant layers of sand, in a formation known as sand lens. Many of the problems encountered in the blasting derive from the fact that the diabase boulders are nestled in sand, a fact that is not apparent from a surface investigation.
9. The design of the project was undertaken in-house by SHA over a ten year period, and SHA undertook soil borings for the purpose of classifying material and locating refusal[1] on the site in the spring and summer of 1989 by use of an auger. The resulting logs reflect that "rock" was penetrated, ranging from soft to hard, and indicated the elevation at which refusal was encountered.

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1 Refusal is defined as that point where the auger cannot effectively penetrate the earth any farther.

10. So that he could determine the steepness of the slope, the SHA geologist/engineer requested that a "foundation boring" be taken at station 4+70 cut area for Route 550, 55 feet to the right of the centerline and to a depth of 45 feet, and results were reported in January, 1990.

11. The log reflects that the driller drilled at the center line rather than 55 feet to the right, and not to the depth requested. Nonetheless the log indicates that the driller encountered rock at eleven feet, then "cored" to a depth of 39.5 feet. The geologist engineer classified the rock as "diabase" with the driller classifying the soil. Other indicia showing "recovery" and "rock quality designation" ("RQD") don't identify or differentiate the rock found, although a contractor could learn from the percentages listed how hard the rock was and whether the area contained other materials such as soil or sand seams.

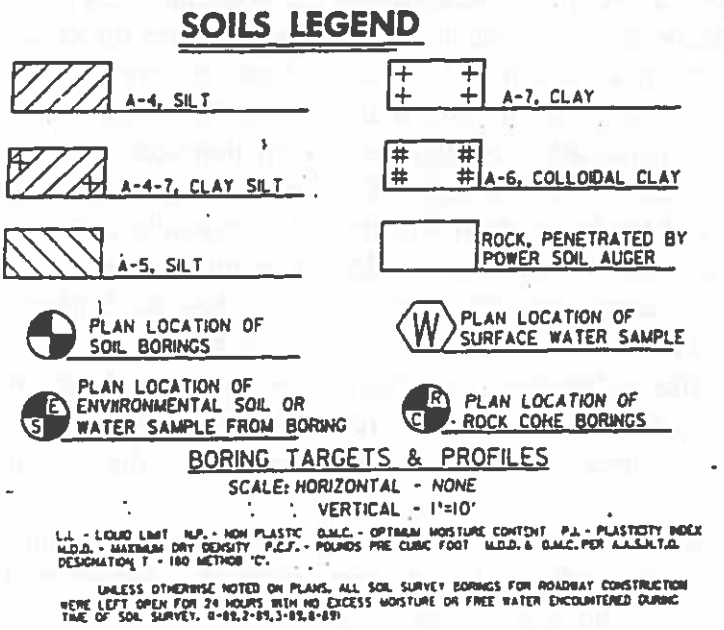
12. The log indicates that recovery at a depth of 39.5 feet was 100% in the area designated as diabase. However, it is also possible to recover 100% in limestone as well. Simply by virtue of the percent recovery, one cannot conclude whether the rock recovered is diabase or limestone.

13. It is undisputed that the State's geologist/engineer who labeled the rock found in this rock core as diabase, knew what diabase was and knew of its properties. However, no employee of Appellant, AccuBid and McKeever had heard of or previously encountered diabase. Appellant's expert witness had worked as a geotechnical engineer on structures or roads in the Frederick Valley area for 17 - 18 years on at least 200 projects and encountered diabase on only one occasion. Furthermore, he does not believe that a reasonable geotechnical engineer working in Washington or Baltimore or the Frederick Valley would know about diabase even after working in the Frederick Valley limestone. A contractor working in the Frederick Valley area would have considerably less knowledge of diabase than the geotechnical engineer unless he had encountered diabase previously.

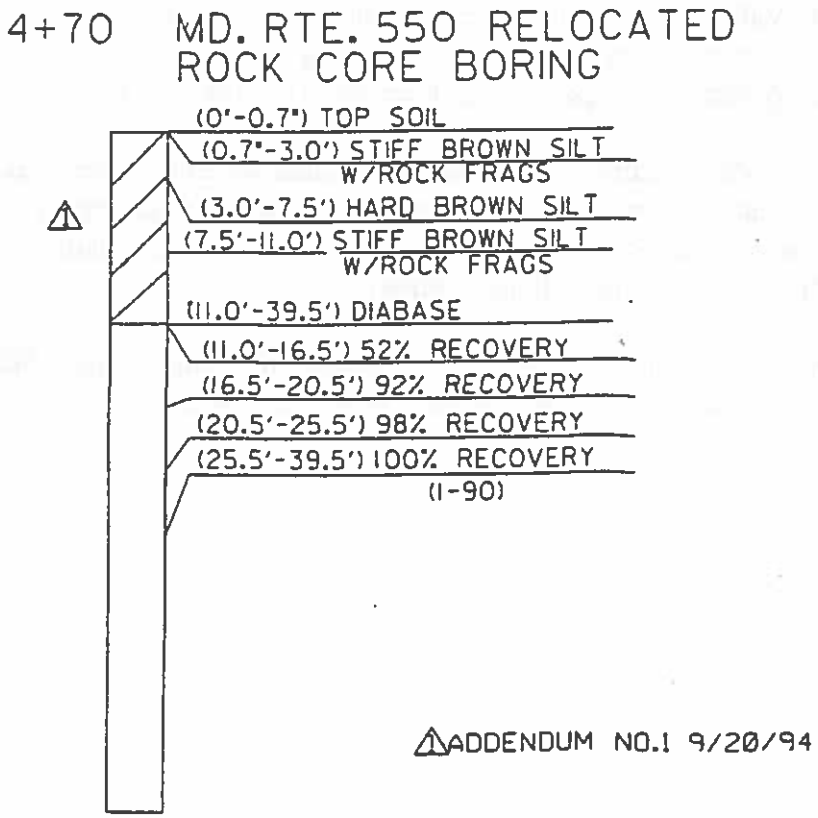
14. In another geotechnical report dated December 21, 1989, it is stated:

> 2.2 Rock Conditions. Rock and rock refusal were encountered as noted over the plans. Numerous rock outcroppings, which do not appear on the plans, exist between Sta. 4+/- and Sta. 6 + 5 +/- B/L Construction of Relocated Md. Rte. 550. Blasting will be required.

15. As originally issued in 1994, the plans contained information simply indicating by symbol the location of borings. On the title sheet of the plans a legend states:



16. In response to a pre-bid meeting request, made in fact by Appellant, the boring information referred to in ¶¶s 11 & 12 above was added to plan sheet 30 of 145, by Addendum No. 1 dated October 20, 1994:



17. Appellant thus argues that this rock core boring legend includes the blank symbology from the soils legend on the plans cover page, for materials which are described as diabase ranging from 11' to 39.5 feet, which indicates the material is rock, penetrated by power soil auger.

18. The information from the foundation boring was entered only on the profile without any reference to the centerline, but giving a station number. The material was classified including designation of the rock as "diabase" and giving the recoveries, and the title of the boring was changed to Rock Core Boring. However, the drafter for the SHA in placing the boring on the contract documents, apparently assumed that as with the other borings, the penetration through the rock was with an auger because the drafter used the symbology from the legend indicated in paragraph 15, above, that the rock penetration below eleven feet (to a depth of 39.5 feet) was "rock penetrated by power soil auger."

19. A power soil auger is a drill assembly with a core which can penetrate some forms of rock. Thus, material that is being penetrated by a power soil auger can be soil with some gradation of rock. Appellant and its subcontractors believed, in reliance upon the rock core boring attached to the plans as Amendment 1, that diabase, whatever it was, was penetrable by a power soil auger, and would therefore be amenable to blasting. It was established at the hearing that in fact diabase is clearly not penetrable by a power soil auger.

20. Thus, the contract documents as amended indicate that the subsurface material at the ridge at the 550 cut was "diabase", but that it was penetrable by a power soil auger. Since the parties all now agree that diabase, an unusually hard, impenetrable, rock-like material, is not in fact penetrable by a power soil auger, herein lies the crux of the dispute.

21. Appellant's estimator, Mr. Strawsberg, relied on the representation in the contract plans of the log at station 4 +70 which indicates that the rock shown is penetrable by a power auger. Neither his site visit, knowledge of the area, or the borings led him to believe that the rock was remarkable. This is so despite the fact that Mr. Strawsberg grew up a mile north of the site, and drives past it every day on his way home. Likewise, Mr. Pank of AccuBid and Mr. McKeever inspected the site, and although they saw the sphereoidal boulders that all now know to be diabase, they did not find the rock unusual – calling it "mountain rock", and assuming that normal blasting methods would be appropriate for the job. Mr. McKeever has been performing blasting for excavation in the area for 16 years, and as Vice President for Operations, oversees all the day-to-day drilling and blasting operations for McKeever. The McKeever company has been drilling and blasting for over 50 years in the Frederick /Montgomery county areas. Prior to January 1995, McKeever had never blasted diabase. He is also President of the Potomac Chapter, International Society of Explosive Engineers.

22. Mr. Pank of AccuBid also walked the site, and relied upon local knowledge. He saw nothing remarkable, and also assumed that blasting was necessary. AccuBid agreed to a subcontract with Appellant, and contracted with McKeever to do the blasting work, a company with whom AccuBid had worked on at least 30 different projects.

23. Thus Messrs. Strawsburg, Pank and McKeever did not know that diabase was the dense, difficult to work with rock it turned out to be. Each believed that whatever rock existed in the cut was not remarkable. Likewise, most geotechnical engineers would not know the

properties of diabase. By contrast, geologists do know the characteristics of diabase and that diabase is described in the geological literature.

24. McKeever began work on March 1, 1995. McKeever's first encounter with diabase occurred no sooner than March 8, 1995, when McKeever encountered extremely difficult drilling. The only thing McKeever could see was the hammer coming down on the drill, and how slow it was moving, and that it was hard to penetrate the rock. McKeever was working with new rigs, and started drilling on March 8, 1995. Respondent represents that between March 11 and April 3, McKeever drilled exclusively in what they later determined was diabase, at a drilling productivity rate of 66 feet per hour, and that from April 10 through May 4, he drilled exclusively in limestone where the drilling productivity rate was 77.5 feet per hour.

25. In order to determine why he was having difficulty blasting, McKeever first checked the bits that had been destroyed prematurely by sending them back to the manufacturers who reported the problem was not the bits.

26. McKeever next checked with the manufacturers of their new hydraulic rock drilling rigs, since they were under warranty. The manufacturer's representatives came to the site and checked the rigs to ensure that the hydraulic pressures and other elements were at their proper levels.

27. Of course, McKeever could not see below the surface where it was performing the blasting which was accomplished by drilling holes and packing multiple loads of explosives in the hole (called decking) down to as much as 30 feet. Everything they were drilling was underground, and was in an area which was undisturbed. They were unable to see what was happening to the rock they were blasting until the end of March when AccuBid's excavation of the area began and they could see what had happened to the blasted rock.[2]

28. In a number of cases, they saw that they had drilled holes through the boulders, but some of the boulders didn't break up, or "fragment" as expected, and most boulders were considerably larger than 24 inches in diameter[3]. When the excavation began was the first time that McKeever and/or AccuBid knew that they were not getting the anticipated fragmentation, or that the rock was other than the limestone they anticipated encountering in the Woodsboro area. A major problem was that the subsurface material surrounding the diabase was not solid and in fact was sand. When they would drill through the boulders, they would hit the bed of sand and lose all their air pressure through the seams of sand. As Respondent's expert described this phenomenon, "it is the instantaneous expansion of temporarily confined gasses produced by combustion of the explosive which breaks the rock. If the gases are not confined, but allowed to escape through soft seams, they escape through the seams and do not break the hard rock. The result is analogous to running an internal combustion engine with a leaky head gasket."

29. The steel bits would therefore be jammed in the hole, and the blasters would have to move over a foot or two and start the process again. As Mr. McKeever described it, it was as though they were trying to dig a hole with a pencil at the beach. They had to deal with sand

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2 It is noted that Maryland SHA inspectors were aware of the problems encountered with the drilling, and did not apparently alert the subcontractors that the problem was that they were trying to drill diabase.

3 The contract by specification TC-204.02.01 required that all rock larger than 24 inches in diameter is to be wasted and not allowed in fills.

lenses surrounding extremely hard boulders, rather than as they assumed, drilling in limestone bedrock.

30. McKeever next tried to fragment a boulder which was intact and rolled out of the cut by the excavator, AccuBid. AccuBid also realized that McKeever was encountering difficulties in late March, and understood at least that there was a lack of fragmentation. The first unfragmented diabase boulder was uncovered on March 28, 1995. On April 8, 1995, AccuBid hauled a diabase boulder to Rockville Crushed Stone where a very large hydraulic hammer existed. Attempts at fragmentation by that hammer were also of limited success. As reported by AccuBid, it took over an hour to break the first boulder and the rock was so hard that as the hammer with a 7" diameter point was hitting on the rock it turned the tip of the tool red hot and the metal melted and mushroomed off of the point. At this point, McKeever and AccuBid realized that a differing site condition existed, and on April 12, 1995, so notified Kline who notified SHA by forwarding letter dated April 13, 1995. In the April 12, 1995 letter, AccuBid described the problem as follows:

> Rock is not as depicted in borings
> Rock is mostly boulders not bedrock
> Rock is far harder than normal for area
> Rock cannot be processed using conventional means.

31. On April 26, 1995, the District Engineer responded to the April 13 letter as follows:

> We have reviewed your letter of April 13, 1995 concerning the use of rock encountered on the project. Your request for a waiver of the Specifications to allow you to bury the large boulders in fill areas is denied.
>
> Specification TC-204.02.01 states that all rock larger than 24 inches in diameter is to be wasted and not allowed in fills. Since the majority of the boulders are larger than 24 inches, it is up to you as the Prime Contractor to decide to break the boulders into usable sizes or to remove them from the site. The soil borings indicate the existence of diabase rock within the limits of construction; therefore you should have made prior provisions to deal with this situation. This is part of the risk taken by the contractor when bidding on work.
>
> If you decide to remove the rock boulders from the site, additional borrow will be required for the job site. The cost of doing this is not the responsibility of SHA. If you choose to break the rock into usable sizes in accordance with the Specification, the cost of this operation is your responsibility.

* * *

32. The contract states the following with regard to differing site conditions:

> GP-4.05 Differing Site Conditions
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> (a) The Contractor shall promptly, and before such conditions are disturbed, notify the procurement officer in writing of:
>
> > (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or
> >
> > (2) Unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The procurement officer shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the Contract modified in writing accordingly.
>
> (b) No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided however, the time prescribed therefor may be extended by the State.
>
> (c) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

33. Appellant Kline made notice of claim and claim, and timely appealed to this Board.

Decision

1. Notice

We first look to Respondent's assertion that the differing site condition notice was untimely. Respondent argues that AccuBid began to move surface diabase boulders as early as February 24th. AccuBid, however, did not attempt to fragment the boulders, anticipating that they would be broken by a "hoe- ram" at a later date. As noted in the findings of fact, McKeever began work on March 1 and the first notation of large boulders was on March 29. But McKeever and AccuBid did not understand what caused the problems with the blasting until after March 29 when they attempted to fragment a large boulder with AccuBid's own hoe-ram, and then on April 8 when they engaged a larger hydraulic hoe-ram in Rockville and attempted to fragment the uncovered boulder, which resulted in a melted hammer. AccuBid thereupon realized that they might have a differing site condition. They notified Appellant and within 5 days of AccuBid's discovery, the State was notified of this differing site condition.

The Respondent argues that McKeever should have known of the problem sooner, presumably when it first encountered trouble drilling, and did not know because of its own substandard drilling and blasting. Further, Respondent argues that because the rock blasted was not uncovered, a primary source of information for making blasting adjustments was not available. Finally, Respondent argues that had SHA known of the problems sooner, they would have been able to make recommendations as to how to handle the diabase.

The Board notes that Respondent's inspector was on the job and was aware of the difficulties that McKeever was having. Despite their difficulties, they did continue to blast, and believed that they were accomplishing their task. The Board does not find it unreasonable of McKeever that it first looked to evaluation of its equipment for solutions to the problem instead of interrupting or changing the schedule of drilling the 600 feet of ridge to be followed by AccuBid's excavation.[4]

In fact, had the State personnel received formal notice of a differing site condition sooner, it is most likely that they would have responded as they did in their April 26 letter – by stating the fact that diabase was contained in the ridge was indicated on the plans, that its properties were known or should have been known by Appellant at the time of bid, and that therefore, the problem was Appellant's responsibility. Further, they would likely have refused to accept placing unfragmented boulders in fill as Appellant requested in its notice letter, and as the State refused to do on April 26.[5]

The Board finds that Appellant's notice of the differing site condition was timely. The excavation was completed; what remained of concern to Appellant, and AccuBid was what to do with the oversize boulders which had not fragmented as anticipated in the course of the drilling and blasting. Faced with the requirement that rock used in fill could not be larger than 24 inches in diameter, from which the State refused to vary, Appellant had to decide how to move the boulders, and subsequently where to borrow to satisfy the fill requirements they had anticipated at bid would be satisfied by the excavation at the 550 cut.

2. Differing Site Condition

Now we turn to whether or not the Appellant, on behalf of AccuBid and McKeever, is entitled to an equitable adjustment because it encountered a differing site condition, either type one or two, for which they should be compensated[6].

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4 Respondent argues that there is little if any documentary support for the assertions made in testimony that the manufacturers of the equipment were consulted. The Board accepts the testimony of Mr. McKeever as truthful. If he is unable to support his testimony with documentation, then that is a question involving quantum which the parties have asked the Board not to address.

5 In fact, when the parties later discovered conditions not at issue here, such as a sinkhole and spring at the 550 cut, Appellant was permitted to use some of the larger diabase boulders to "stop up" the sinkhole.

6 The Respondent argues that since the differing site conditions clause was not part of the AccuBid McKeever contract, they are not entitled to rely on it. The Board disagrees. The Differing site condition clause is required to be in every contract with the state, and that requirement cannot be circumvented through varying contracts with subcontractors. *Maryland*

As noted in the findings of facts, the General Provisions for Construction Contracts, incorporated in the Kline contract here, states that notice must be given of the following as differing site conditions:

> (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or
>
> (2) Unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The procurement officer shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the Contract modified in writing accordingly.

Thus, if subsurface conditions at the site differ materially from those indicated in the contract or unknown physical conditions at the site are of an unusual nature, differing materially from those ordinarily encountered, a contractor is entitled to recover additional costs caused by such conditions. COMAR §21.07.02.05.

To be entitled to an equitable adjustment under the differing site condition [DSC] clause[7], Appellant must meet the burden of proving by a preponderance of the evidence that:

1. the solicitation affirmatively indicated or represented the subsurface conditions which form the basis of the claim;

2. it acted as a reasonable, prudent contractor in interpreting the solicitation;

3. it reasonably relied upon the indications of subsurface conditions contained in the solicitation;

4. the subsurface conditions actually encountered differed materially from those indicated in the solicitation;

5. the actual subsurface conditions must have been reasonably unforeseeable; and

6. its claims for excess costs must be shown to be solely attributable to the

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Technical Stone Erectors, Inc., MSBCA 1801, 1837, 4 MSBCA ¶377 (1995).

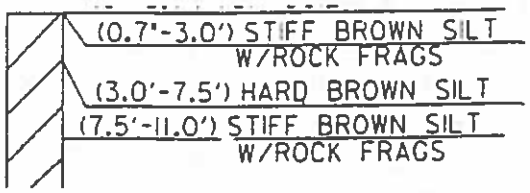
7 The State of Maryland differing site condition and site investigation clauses track those contained in the Federal Acquisition Regulations. Therefore, this Board also looks to federal caselaw regarding the interpretation of these contract clauses.

materially different subsurface conditions.

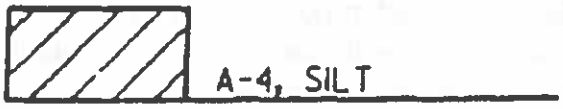
Weeks Dredging & Construction, Inc. v. United States [34 CCF ¶75,356] 13 Ct. Cl. 193, 218-19 (1987). Therefore, we look at each of these elements in turn.

First, we look to see whether the solicitation affirmatively represented the subsurface conditions which represent the basis for the claim. It is clear that the contract documents as amended refer to the kind of rock encountered with the word "diabase". The reference appears on the rock core boring legend which was added to the contract after inquiry by Appellant at the prebid conference. If someone knowledgeable about diabase saw the reference on contract documents (as Appellant and its subcontractors would now be!) they would know from that reference that what was in the 550 cut was materially more difficult to blast than what was to be expected in the absence of that reference, and would know that identifying diabase as penetrable by power soil auger would be incorrect. However, Appellant and its subcontractors did not recognize this ambiguity.

Respondent argues that it was elemental that Appellant and its subcontractors should have known that whatever the rock was, it could not be penetrated by a soil auger, and that obviously the legend did not relate back to the soil legend included on the first page of the plans. The Board finds that it is not so obvious that the legend did not relate back; particularly insofar as the top legend reference on the rock boring indicates that various silts have been penetrated to 11 feet:



This diagonal cross-hatched legend matches the legend for silts in the soil legend on the first page:



The second half of the rock core boring legend indicates rock between 11 and 39.5 feet next to a blank symbol, which on the soil legend represents rock penetrated by power soil auger:

Thus, we must next look to whether or not the contractor was reasonable in its interpretation of the plans. *Weeks, supra.*

Did the contractors, not knowing the significance of the diabase reference (despite their decades of experience as contractors in Frederick Valley), act as reasonable, prudent contractors in interpreting the solicitation reference to the subsurface conditions? Appellant, and its excavating/blasting subcontractors, AccuBid and McKeever, all interpreted the rock core boring information (together with the rock condition Specification 2.2[8]) to mean that blasting would be required in the 550 cut. Looking at the legend however, they were each lulled into believing that the rock was unremarkable and manageable, because the legend indicated by the symbology of a blank rectangle that it was "penetrable by a power soil auger".

We must look to the solicitation as it was interpreted by Appellant and as it might be interpreted "by a reasonably intelligent bidder in the position of appellant who would be expected to have the technical and trade knowledge of his industry and to know how to read and interpret technical engineering specifications and perform construction in accordance with such specifications". *Roberson Construction Co.*, 61-1 BCA ¶2857 (ASBCA 1960).

We find that the contractor had the right to take at face value the information communicated by the drawing. *United Construction v. United States*, 368 F.2d 585 (Ct. Cl. 1966). However, if Appellant's interpretation that the rock in the 550 cut is penetrable by a power soil auger, or at least blastable, is also reasonable, the solicitation is ambiguous on the question. As stated in *Lamb, supra* at p. 145,340, we think the ambiguity is apparent "when pointed out." The pivotal question is whether this ambiguity, present in the solicitation, should have been spotted without aid; that is, whether the ambiguity is patent or latent. If patent, Appellant was required to seek clarification which it did not do. *John C. Grimberg,* MSBCA 1761, 4 MSBCA ¶371 (1994); *Hanks Contracting, Inc.*, MSBCA 1212, 1 MSBCA ¶110 (1985), *Concrete General, Inc.*, MSBCA 1060, 1 MSBCA ¶87 (1984), aff'd, Civil No. 3296 (Cir. Ct. Mont. Co. August 23, 1985); *Avedon Corp. v. United States*, 15 Cl. Ct. 771 (1988); *Dominion Contractors*, MSBCA 1041, 1 MSBCA ¶69 (1984).

Since the first half of the rock legend tracked the soil legend by indicating silt, the Board finds that all three contractors were reasonable in reading the second half of the rock coring legend, which was marked with a blank symbol, as representing rock penetrated by power soil auger as indicated on the face-page soil legend. Further, no evidence was produced that indicated a reasonable, prudent contractor, as opposed to geologist, geotechnical engineer or soils expert, would have made a different interpretation. Thus, we hold that the ambiguity was latent, not patent, and Appellant had no duty to seek clarification. Therefore, what the parties are faced with in the contract documents is a latent, not a patent ambiguity. The ambiguity was not apparent from a review of the plans or the site.

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8 2.2 Rock Conditions. Rock and rock refusal were encountered as noted over the plans. Numerous rock outcroppings, which do not appear on the plans, exist between Sta. 4+/- and Sta. 6 + 5 +/- B/L Construction of Relocated Md. Rte. 550. Blasting will be required.

Next, the contractor must establish reliance on its interpretation. "To establish reliance, a contractor must prove that it interpreted solicitation documents as indicating subsurface conditions would be more favorable than those encountered. . . and that it relied upon its interpretation. . . ." *Lamb Eng. & Const. Co.*, 97-2 BCA ¶29,207 at page 145,336, EBCA No. C-9804172 (July 28, 1997). The Appellant has shown reliance on its interpretation, and that such reliance was to its detriment. Because it and its subcontractors believed that the subsurface would be blastable as had been their experience in blasting limestone bedrock, they did not have the opportunity to consult experts about the proper way to blast in diabase.[9]

Next, the contractor must prove that the subsurface was in fact materially different than represented in the plans. The Board "concludes that the solicitation was seriously inaccurate . . . There is little question that the conditions at the site differed materially from those indicated in the solicitation", *Lamb, supra* at page 145,336, and that therefore the 4th *Weeks* element is also met.

However, to be entitled to recover, Appellant must also prove more than a material difference between the indicated subsurface conditions and those actually encountered. Under element 5, they must prove that the actual conditions must have been reasonably unforeseeable. The Board is convinced that this element is met because of the unusual nature of diabase, and the rarity of its appearance as is apparent from the geological maps of the Frederick Valley that were introduced at the hearing. In fact, the Respondent's geologist/engineer could identify no time when Maryland's State Highway Administration has ever previously encountered diabase in all of its myriad road construction. In addition, these three experienced contracting firms, which have been excavating and drilling in the Frederick Valley collectively for the past fifty years, had never encountered diabase. The Board finds that absent some basis for education about diabase[10], and in the finding that the contractors did not in fact know about diabase, that the actual subsurface conditions were reasonably unforeseeable.

Finally, we note that for the Appellant to be entitled to an equitable adjustment based on a differing site condition, it must show that by virtue of the differing site condition it was required to expend additional funds, and that Respondent alleges that there is a complete absence of records on the question. The parties did not present proof of issues of quantum, having represented that they would resolve those questions between themselves. Therefore, we base our decision that they were required to expend additional funds on the testimony that they were unable to blast as quickly nor as productively as they might otherwise have done; and that AccuBid had to find another source for fill, i.e., borrow, since the diabase boulders had not been fragmented to allowable dimensions when Respondent refused to allow placement of the boulders as blasted in fill, although the contractor was later more successful in fragmenting the boulders, and the Respondent later allowed the contractor to place some of the unfragmented diabase boulders on site, to stop up a sinkhole, for example.

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9 Respondent argues that had Appellant timely notified them of the problem, they might have found an easier solution. Since we found in part one of this decision that Appellant was not untimely, we need not address this argument here.

10 One expert witness testified that in his experience other geotechnical engineers would not know about diabase, much less drilling and excavating contractors.

Thus, the Appellant has proved what a reasonably prudent contractor should have anticipated encountering at the site with regard to subsurface conditions, as a result of the contract specifications as well as his experience. The record reflects that the work was more difficult than that envisioned in the contract, that the conditions actually encountered were unknown or unusual for the area, and that there is a material difference between what was usual and therefore reasonably expected and what was encountered. What remains to be shown, absent the agreement of the parties thereto, is whether the material difference shown caused an increase in its costs, *Eric K. Straub, Inc.*, MSBCA 1371, 3 MSBCA ¶214, 14-15 (1989), citing *Charles T. Parker Construction* Co. *v. U.S.*, 193 Ct. Cl. 320, 333-34 (1970), and thus there exists a differing site condition for which the Respondent is bound to reimburse the Appellant.[11] For the purpose of this opinion, the Board assumes that Appellant will be able to show increased cost attributable to the differing site condition.

Site Investigation Clause

What the Respondent next argues, however, is if Appellant and its subcontractors had conducted a reasonable site investigation pursuant to the Site Investigation Clause,[12] they would have learned of the properties of diabase and planned its bid and job and accordingly. Thus, Respondent argues that in addition to visual inspection of the location[13], as its expert testified, a reasonably competent blaster would review any separate geologic information, conduct its own test drilling and contact nearby quarry operators "for knowledge of something different . . . about the formation."

With regard to contacting nearby quarries, Respondent's expert notes in his report that the two closest quarries have come close to contact with diabase, but have not quarried it, and have no reason to work the diabase when they have so much limestone available to them. Hence, the Board finds that even if a contractor were required to perform such an independent investigation in this case (which the Board does not do, see below), the investigation would not have increased the three contractors' knowledge about diabase.

Thus, we look next to the issue of whether or not the Appellant or his subcontractors were required to conduct independent test borings. As the *Lamb* Board stated at pages 145342-43 in response to similar arguments, if contractors find it necessary to do their own subsurface

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11 Respondent also argues that because Kline relied for its bid on a competitor's quotation for blasting 60% higher than that of McKeever's, Appellant cannot recover for McKeever's increased costs. We find that this issue is also one of quantum.

12 Maryland's site investigation clause states in relevant part:

> . . .The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the State, as well as from information presented by the drawings and specifications made a part of this Contract. Any failure by the Contractor to acquaint himself with the available information may not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The State assumes no responsibility for any conclusions or interpretations made by the contractor on the basis of the information made available by the State.

General Provisions for Construction Contracts, GP-2.04 (1993)

13 Appellant's Mr. Strawsberg, AccuBid's Mr. Pank and Mr. McKeever all walked the site, and although they noticed the diabase boulders on the surface of the ridge, they did not believe them to be remarkable.

investigations, the government will ultimately bear the cost of these redundant investigations through higher bids. The policy reflected in the DSC clause is to encourage bidders to rely on data furnished in the solicitation. Thus, the *Lamb* Board quoted from *Foster Construction C.A. v. United States*, [15 CCF ¶84,163], 193 Ct.Cl. 587, 613-14, 435, F.2d 873, 887 (1970):

> The purpose of the changed conditions clause is . . . to take at least some of the gamble on subsurface conditions out of bidding. Bidders need not weigh the cost and ease of making their own borings against the risk of encountering an adverse subsurface, and they need not consider how large a contingency should be added to the bid to cover the risk. They will have no windfalls and no disasters. The Government benefits from more accurate bidding, without inflation for risks which may not eventuate. It pays for difficult subsurface work only when it is encountered and was not indicated in the logs. [citing *Foster* at 613-14.]

The *Lamb* Board, *supra* at 145,343, continued, "Foster and other cases have protected the government against itself by repeatedly rejecting government efforts to raise the bar too high in the guise of requirements for expertise, foresight, research, or site investigations. Again, *Foster* at 614 guides us:

> Faithful execution of the policy requires that the promise in the changed condition clause not be frustrated by an expansive concept of the duty of bidders to investigate the site. That duty, if not carefully limited, could force bidders to rely on their own investigations, lessen their reliance on logs in the contract and reintroduce the practice sought to be eradicated – the computation of bids on the basis of the bidders' own investigations, with contingency elements often substituting for investigation."

This Board agrees with the *Lamb* and *Foster* Boards that a reasonably prudent contractor is not required to second guess the information set forth in solicitation documents or conduct its own subsurface drilling. See *Maryland Technical Stone Erectors, Inc.*, MSBCA 1801, 1837, 4 MSBCA ¶377 (1995), *Raymond International, Inc. v. Baltimore County*, 45 Md. App. 247, 252-260 (1980); cert. den. Ct. of App. July 3, 1980; Cert. den. 449 U.S. 1013 (1980). See also *Martin G. Imbach, Inc.*, MDOT 1020, 1 MSBCA ¶52 (1983). The contractor is entitled, instead, to rely upon the information provided to him by the Government unless a patent ambiguity is apparent, in which case, it is simply obligated to notify the Government of the ambiguity.

Respondent also contends that Appellant failed in its obligations under the site investigation clause because it failed to obtain public documents concerning the geology of the site. The caselaw is clear that such a review of documents not referenced in the solicitation is not ordinarily required under the clause. *Klefstad Engineering Co.*, 68-1 BCA ¶6965 (VACAB 1968), *Lamb, supra*, at 145,344. In any event, even if at the time of bid Appellant had reviewed the geological maps introduced at the hearing, although it would have been clear that there was an extremely narrow dike/seam formation of diabase running through the Frederick Valley limestone, there was no information on the map itself which would have indicated to the Appellant that diabase was any harder a rock, or more difficult to blast, than the ordinary limestone in the area. What the maps do show is that it is not surprising that this particular rock had not previously been encountered by

Appellant or its subcontractors.

Finally, in his report, Respondent's expert suggests that some geologic research might have informed the investigating bidder the following about excavation as evidenced in one publication: "Ease of Excavation: Difficult; large boulders are a special problem; slow drilling rate." This publication, however, is a geotechnical engineering report for Pennsylvania: *Engineering Characteristics of the Rocks of Pennsylvania*, p. 102: Pennsylvania Bureau of Topographic & Geologic Survey Environmental Geology Report 2, 1982. Further, this Board has not been cited to a similar study in the State of Maryland. This Board will not require that blasting contractors conduct such research so that they rise to the level of knowledge held by geologist/engineers or geotechnical engineering experts. See, *Fruin Colnon Corp.*, MDOT 1025, 2 MSBCA ¶165(1987) ("the materials encountered in the disputed area were much harder than a reasonable contractor would have anticipated from a review of the contract documents"; contractor was not a geologist and thus not held to the degree of knowledge a geologist might have.)

Ultimately, the framework for deciding these issues is the balancing act between the Differing Site Condition clause and the Site Investigation clause. They are essentially two sides of the same coin. In this regard, it has been stated that the DSC clause accords log data special status reflecting a policy embedded in the clause to reduce government cost and obtain more accurate bids. *Lamb, supra* at 145,332, and *Foster, supra* at 615-16. Because of the policy encouraging bidders to rely on technical information contained in solicitation documents, the Site Investigation clause requires bidders to investigate the site, but holds them only to knowledge that would be obvious to a layman not an expert. Thus, the contractor is only "responsible for patent indicators plainly, to a layman, contradicting the contract documents". *Lamb, supra* at 145,343.

We have spent a number of pages discussing the applicability of the Differing Site Condition and Site Investigation clauses of the contract. We believe the facts which we have found have led to the correct interpretation of how these clauses, mandated by the General Procurement Law, and fleshed out by the Board of Public Works through promulgation of COMAR regulations, should be interpreted. We believe the government's interpretation of these clauses would have the practical effect of eliminating them, with the consequence that neither the State, nor the contractor would be practically entitled to either an increase or decrease for the cost of the work.

In summary, we find that Appellant has proven all the elements required to establish the entitlement portion of its claim for an equitable adjustment under the Differing Site Condition clause and that it adequately discharged its site investigation obligations. However, as noted above, we make no actual finding concerning quantum.

For the foregoing reasons, the Appeal of Richard F. Kline, Inc. is sustained as to entitlement. Wherefore, it is hereby Ordered, this 14th day of April, 2000, that the appeal is sustained as to entitlement, and the parties will notify the Board of their intentions regarding quantum within 60 days of the date of this opinion. This opinion is interlocutory.

Dated: April 14, 2000

Candida S. Steel
Board Member

I concur:

Robert B. Harrison III
Chairman

Randolph B. Rosencrantz
Board Member

I certify that the foregoing is a true copy of the Maryland State Board of Contract Appeals interim opinion in MSBCA 2092, appeal of Richard F. Kline, Inc., under SHA Contract No. F-157-501-771.

Dated: April 18, 2000

Mary F. Priscilla
Recorder