

BEFORE THE  
MARYLAND STATE BOARD OF CONTRACT APPEALS

Appeal of CORMAN CONSTRUCTION  
INC.

Under MTA Contract No. 5-10-1

)  
)  
) Docket No. MSBCA No. 1254  
)

February 29, 1989

Changes Clause - Compliance with the notice requirements of the changes clause may be waived where the lack of notice does not prejudice the State.

Differing Site Condition - Type 1 - Appellant encountered subsurface conditions differing materially from those indicated in the contract where the available bid information and contract documents indicated that materials with natural moisture content above their "optimum" level might be encountered and the Appellant actually encountered "saturated" materials.

Suspension of Work - Appellant was delayed in performance of grading work as a result of ponding caused by a site condition (a large mound of excess material consisting of dirt and debris) created by another contractor observed by Appellant at the time of bidding. However, such knowledge did not negate Appellant at the time of bidding. However, such knowledge did not negate Appellant's entitlement to an equitable adjustment under the "fault or negligence of the contractor" provision of the suspension of work clause of the contract where the evidence indicated that the Appellant reasonably believed that the excess material would have been already removed by others upon issuance of the notice to proceed for Appellant's work.

Equitable Adjustment - In computing the amount of an equitable adjustment awarded to a contractor the reasonable cost of performing the work as impacted or changed is compared to the reasonable cost of performing as required originally.

Equitable Adjustment - Extended Home Office Overhead - Use of the "Eichleay" formula is an appropriate method for calculating extended home office overhead costs where the contractor has been delayed by changed work that increases its direct costs.

Equitable Adjustment - Interest - Predecision interest was not recoverable as part of the contractor's equitable adjustment in view of an unchallenged specific contract provision prohibiting its award. Section 11-137(j), Division II, State Finance and Procurement Article (now codified as Section 15-222), which authorizes award of predecision interest in the Board's discretion notwithstanding a contrary contractual provision was not intended to be applied retroactively.

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OPINION BY MR. LEVY

This is an appeal of the Maryland Mass Transit Administration's (MTA) rejection of most of Appellant's claim for an equitable adjustment due to changes, delays, and disruption allegedly caused by the MTA. The bulk of the claimed equitable adjustment is due to the presence of unsuitable materials at the lower end of the Access Road; the presence of ground water in the area of the proposed Maintenance Building and coordinate problems at the Loop Road.

Findings of Fact

1. This dispute involves MTA Contract No. 5-10-1, Wabash Bus Facility Site Construction. The MTA awarded the contract on May 4, 1983 to Appellant in the amount of \$1,768,408.00. The Notice to Proceed was issued on May 16, 1983 with a contract time for completion of 180 calendar days. This made the original contract completion date November 11, 1983.

2. The contract is primarily a grading contract to prepare the site for future building construction which MTA intended to bid and award the following spring.

3. A brief description of the contract's major items of work follows:

- a. The construction of an Access Road west from Wabash Avenue to the lower end of the site. The road was forty-eight feet wide and required installation of Type III material, (a high quality gravel-like material), base coarse and concrete paving.
- b. The construction of a Loop Road which connected to the Access Road and ran around the outside of the site. It was thirty feet in width and only required the installation of Type III material on top of the subgrade. The road would be paved by the follow-on contractor.
- c. The construction of an Exit Road and Storage Road. These roads were thirty-two feet in width and only required installation of Type III material.
- d. The construction of five parking lots which only received Type III material. The parking lots would be paved by the follow-on contractor.
- e. The construction of a Storm Water Management Pond at the south end of the project and a fifteen foot roadway around the pond.
- f. The installation of a sanitary sewer and storm drains.
- g. The area of the future Maintenance Building and Service and Storage Building was to be excavated to a specified grade with no further treatment.

4. The major item of work for this project was excavation. There was approximately 230,000 cy of excavation and 80,000 cy of fill. Appellant intended to use 80,000 cy of material excavated from the project to construct the fills on this project. This left 150,000 cy which had to be hauled off-site.

5. In bidding and planning the project, Appellant broke the work into three separate areas: one area to be excavated and hauled off site; a second area to be filled; and a third area representing the location of the material to be used in the fill in the second area.

6. Prior to the Wabash job, Appellant bid and was awarded another MTA project referred to as the Milford Mill project. The Milford Mill project required approximately 180,000 cy of fill. As a result, Appellant bid the Wabash project intending to haul the excess material from the Wabash site to Milford Mill.

7. On May 20, 1983 Appellant submitted a proposed construction schedule for the Wabash project showing completion of all work on November 11, 1983.

A. Loader Operations

8. Loader excavation was the longest duration item and the critical major item of work. Appellant's loader operation was mobilized on site on May 20, 1983.

9. Excavation work is weather sensitive. It is more desirable to perform this type of work in the summer months when rain is generally of short duration and the temperatures are substantially higher for faster drying. Appellant had planned to complete its major excavation work before August 7, 1983.

10. The critical item of work within the loader excavation was completion of the Access Road excavation. The Access Road required three different surface layers (Type III, base coarse and concrete paving) whereas the remainder of the roads and parking areas required only Type III. The Access Road would also provide drainage for the north end of the project. As a result, Appellant wanted to complete the Access Road excavation first. In addition, Appellant wanted to complete the Access Road first so that it could be used as a permanent haul road for the remainder of the loader excavation.

Loader excavation for the Access Road could have been completed by mid-June, 1983 and the complete Access Road by mid-July, 1983.

Because the contract drawings indicated that the ground slopes down from Wabash Ave. excavation was to begin at the lower end of the Access Road and proceed upward toward Wabash Avenue. It is normal construction practice to perform loader excavation by starting at the lowest point to allow for proper drainage. Appellant then intended to excavate the major cuts in the area of the Maintenance Building from the back or south side and haul out the Access Road.

1. Babco's Mountain

11. At the time of the Notice to Proceed, the project site in the area of the Access Road did not conform to the conditions indicated on the contract drawings. Excess material measuring twenty feet in height had been placed by an adjacent MTA contractor, Baltimore Asphalt Paving Company ("Babco"). The material extended approximately eighty feet east of the centerline of the Access Road. In addition, the area in front of this material had been excavated creating a hole. The excess material, referred to as Babco's

Mountain, consisted of large amounts of unsuitable (for use in fills) material including organic material, topsoil, trees cut off approximately five feet above the ground, rocks, TV sets, tires, etc.

12. The excess material and excavation affected the natural drainage of water off-site. As a result, at the time of the Notice To Proceed, a large pond had developed in front of Babco's Mountain, estimated to be at least one-half to one acre in size.

13. During the bidding phase, Appellant visited the site and was aware of the existence of the excess material. For bidding purposes Appellant assumed that if the excess material were on Appellant's site, the MTA would require Babco to remove the material and restore the site to the conditions indicated on the contract drawings prior to Notice to Proceed or issue a change order or addendum to Appellant's contract.

14. Upon commencing work, Appellant also encountered an area of ponding and wet material which extended at least 100 feet left of the centerline of the Access Road between stations 14+00 and 17+00. Appellant had performed borings at the site in March, 1983, prior to bid closing date. The boring logs from that investigation noted the presence of ponded water on the site at borings 8 and 10, located between stations 15+00 and 17+00 of the Access Road. Appellant concluded after its estimator visited the site that the ponding was not significant and included nothing in its bid for water removal.

15. On May 24, 1983 Appellant began excavation by cutting a trench through the side of Babco's Mountain in an effort to drain the pond. Although the pond was successfully drained, the material remaining was saturated and more difficult to excavate. It developed a crust on top but remained saturated underneath.

16. By letter dated June 1, 1983 Appellant requested MTA to issue a change order to compensate it for costs incurred to correct the ponding of water caused by the presence of the Babco material and the site grading conditions. The letter makes no reference to continued delays or impacts anticipated from the Babco material and site grading conditions.

17. The contract specifications required that a sediment trap at the lower end of the Access Road be constructed first. The purpose of this item was to drain the Access Road and surrounding area into the sediment trap during construction. As a result of the fact that Babco's Mountain was situated at the lower end of the Access Road where Appellant wanted to begin excavation, Appellant was unable to proceed in accordance with its intended sequence and the sequence of work contemplated by the contract specifications. Instead of starting excavation at the bottom of the road, Appellant began excavating at the top at Wabash Ave. and excavated as far down as possible. When Appellant could not excavate further on the Access Road, it spread its operations into the site towards the Maintenance Building area.

18. On several occasions prior to the Notice to Proceed, MTA directed Babco to restore the site to its proper condition. In July, 1983, the Resident Engineer began calling Babco every day to try and get them to begin removing the excess material. At the direction of MTA, Babco finally began removing the material from the site on July 24, 1983.

By August 18, 1983, the MTA determined that Babco was not removing the material fast enough and elected to pay Appellant to remove it. By letter dated August 18, 1983, the MTA directed Appellant to excavate the unsuitable material within its contract limits that had not been removed by Babco.

19. By letter dated August 22, 1983, Appellant submitted its proposal to MTA for this additional work in the amount of \$81,600.00. The MTA accepted the proposal on August 25, 1983.
20. By letter dated October 24, 1983, the MTA forwarded Change Order No. 004 entitled "Differing Site Condition Remove Unsuitable Material" in the amount of \$81,600.00. Appellant informed the MTA that it could not sign the change order because it contained a waiver of impact and delay costs.
21. Appellant completed the removal of the Babco Mountain material on or about September 13, 1983.
22. In a memorandum dated December 13, 1983 the Resident Engineer estimated Appellant's additional costs including extended field overhead to be \$33,689.63. Change Order No. 004 was reissued as "Delay/Acceleration/Removal of Additional Material" in the amount of \$115,289.63 (\$81,600.00 + \$33,689.63), and sixteen days time extension.
23. The Resident Engineer reissued Change Order No. 004 on July 25, 1984 as "Remove Unsuitable Material" in the amount of \$81,600.00 and 13 days time extension. He issued Change Order No. 007 on August 17, 1984 as "Delay/Acceleration" in the amount of \$33,690.00 and 3 calendar days time extension. Appellant advised MTA on September 28, 1984 that it would accept Change Order No. 004 in the amount of \$81,600 in satisfaction of its direct costs for performing the change work. Appellant reserved its right to pursue an equitable adjustment for impact and delay costs. Appellant advised MTA on October 4, 1984 that they would not accept Change Order No. 007 for "Delay/Acceleration".



24. MTA approved Change Order No. 004 on February 7, 1985 and paid Appellant \$81,600. The Procurement Officer in his final decision dated July 3, 1985 found that MTA had not issued Change Order No. 007 and stated that \$33,690.00 for "delays and inefficiencies" would be incorporated into the final payment by unilateral change order. This amount was paid to Appellant.

2. Maintenance Building and Adjacent Paved Areas

25. The contract drawings indicated cuts varying from eighteen to twenty-two feet in the area of the Maintenance Building and adjacent paved areas. When Appellant was within three to five feet of the subgrade to which it was to excavate Appellant encountered fully saturated material and a water problem at this site.

As a result of the water conditions, Appellant was unable to use normal excavating procedures for the last three to five feet of excavation in the area of the Maintenance Building and adjacent paved areas. Appellant could not get trucks into the area. They were forced to push the material with track loaders and dozers from the area, where it would then be picked up by a rubber tired loader and hauled to a more stable area where it was stockpiled. It would then be loaded from the stockpile into the trucks and hauled out. Appellant had to bring additional equipment on the job for this operation and in some cases was required to use floatation (wide-track) equipment to excavate.

26. Atec Associates, Inc. had prepared the Geotechnical Report which was attached to the contract as Appedex D. The report evaluated the subsurface conditions at the site. Twenty-four test borings were drilled of which eight covered the area of the Maintenance Building excavation. While the boring logs indicated that ground water existed approximately two feet below the subgrade to which Appellant was to excavate in the area of three borings

(14, 15 & 17), the logs did not indicate the existence of any material classified as saturated which Appellant was to excavate. The report did warn of possible perched water and that significant variations in subsurface conditions could occur between borings.

27. Based on the contract borings, Geotechnical Report and Appellant's borings, Appellant did not anticipate problems of saturated material or ground water problems above the subgrade to which it was to excavate.

28. By letter dated September 15, 1983, Appellant informed MTA that it was being delayed in performing the site work in the area of the Maintenance Building due to the water conditions. They noted that they had not been able to operate equipment in the area since September 9, 1983.

The MTA Resident Engineer responded on September 16, 1983 informing Appellant that the conditions of unstable material were disclosed by the contract documents and were therefore the responsibility of the Appellant.

29. Because of Appellant's continuing problem MTA directed Appellant to excavate an observation pit. The pit indicated that a ground water problem existed, not perched water, since the water was rising from the bottom of the pit. As a result of the excavation pit, the MTA directed Appellant on September 16, 1983 to install an underdrain consisting of a ditch and 15 inch pipe. On October 3, 1983 MTA directed that a more elaborate drainage system be installed as a change to the contract.

30. MTA issued Change Order No. 006 on September 28, 1984 in the amount of \$40,802 for the installation of the Maintenance Building drainage system. On September 28, 1984 Appellant advised MTA that it would accept the Change order only for its direct costs reserving its right for an equitable adjustment for its impact and delay costs. The MTA ultimately issued the Change Order as No. 005, unilaterally, in the amount of \$40,802.

### B. Scraper Operations

31. The Wabash project required the placement of approximately 80,000 cubic yards of fill on site. Appellant intended to use the material from onsite excavations to complete the fills. It had planned to keep the areas of excavation and fill close together.

32. The Appellant had anticipated using three scrapers, a large and small dozer and a compactor for this procedure. The large dozer is used to push the scraper through the excavation. The scraper's cutting edge forces the material to be excavated up into the scraper. The scraper then takes the material to the fill area, unloads and returns to the excavation site for another load. At the fill site the small dozer and compactor spread and compact the material.

33. The scrapers were mobilized on July 5, 1983. Appellant had anticipated completion of the scraper excavation in three weeks.

34. Appellant intended to start the fill at its lowest point, which is the toe of slope. Appellant would begin by excavating in the area of the Service and Storage Building with the scraper, placing the material in the fill beginning in the lowest areas at the Storm Water Management Pond, and continuing around the toe of the slope of the Loop Road. Appellant considered the Wabash site as one large fill which would be brought up uniformly.

35. Preparation for the scraper operation required staking out the Loop Road. When this was attempted Appellant discovered that the center line of the Loop Road did not properly intersect with the center line of the Access Road due to an error in the coordinates. MTA furnished revised coordinates for the Loop Road on July 8, 1983.

36. When Appellant attempted to lay out the Loop Road using the revised coordinates, the toe of the slope of the Loop Road fell in the adjacent stream. Appellant discovered this problem on July 12, 1983.

37. MTA attempted to correct the problem on July 14, 1983 by directing Appellant to steepen the slope of the Loop Road from the 2 to 1 slope as called for by the contract to a slope of 1.5 to 1. The effect of the steeper slope was to move the toe in towards the center line of the road.

38. The steepening of the slope did not resolve the problem. On August 2, 1983, MTA directed Appellant to again use a slope of 1.5 to 1, and in addition, to reduce the width of the shoulder on the Loop Road from ten feet to three feet. This change placed the toe of the slope at the edge of the trees near the top of the bank of the stream.

39. As a result of the errors in the Loop Road coordinates, Appellant was forced to abandon its plan to start on the toe of the slope of the Loop Road fill and instead Appellant began constructing the fill in the area of the Storm Water Management Pond. The Pond was not of adequate size for the three scraper operation. Due to the lack of available fills, Appellant was forced to shut down its entire scraper operation on July 13, 1983.

40. Appellant restarted its operation at the Storm Water Management Pond on July 18, 1983 and, in addition, moved into the Loop Road fill towards the center of the site. Appellant broke up the anticipated one large fill area into three small fills.

41. The scraper operation was not finished until September 21, 1983.

C. Follow-on Work

42. At the completion of the excavation, Appellant was required to bring the finished grade elevations within tolerances and compact the soil. This was referred to as fine grading. After the fine grading was completed, Appellant was required to place Type III material in all areas of future paving to protect the subgrade.

43. In the area of the Access Road, Appellant was required to place an aggregate base (crushed stone), on top of the Type III material. Appellant was then required to construct a concrete pavement on top of the aggregate base.

44. As a result of the delays to Appellant's loader and scraper operations, this follow-on work was delayed. The work was pushed into the wet months of October and November, 1983.

#### D. Engineering and Layout

45. The contract required that MTA establish reference points to enable the contractor to proceed with the work. The contract also required MTA to establish the base lines ("A" and "B") and bench marks from which the work was to be laid out.

46. Contract drawing G-4 was intended to provide the information to establish control for the project. A control point is a point in the field from which the job can be laid out. Drawing G-4 contains references to three control points, MTA 47, 48 and 49. However, there was not sufficient information in the contract to locate MTA 47 and 49 in the field. Additional layout work was required as Appellant attempted to "close the system," i.e., definitively establish points on the base lines.

47. The actual completion date for the project was December 16, 1983.

#### Decision

##### I Loader Excavation

##### A. Liability — Babco's Mountain

There is no dispute that the conditions in the area of the Access Road differed materially from those indicated in the contract drawings. Specifically, there was a large mound of unsuitable material at the lower end of the Access Road and a low area in front of the mound, neither of which were indicated by the contract drawings. The parties disagree as to whether Appellant is entitled to an equitable adjustment under GP-4.04, Differing Site Conditions. GP-4.04 allows a contractor to recover for "(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 primary disagreement is the extent to which Appellant's onsite investigation bars recovery under this clause.

The evidence is clear that pre-bid site investigations were made by Appellant which put it on notice of the presence of excess, unsuitable material on the job site. In March 1983, Appellant's Assistant Engineer, Howard Graves, performed soil borings at the Wabash job. The boring log maintained by Mr. Graves, and reviewed by Appellant's Chief Estimator, Mike Edmonston, contains the following comment under Boring 9:

Note: excess waste from adj. job site will remain for  
low bidder on this project to deal with.

In addition, Mr. Edmonston was independently aware of the differing site condition by virtue of a visit he made to the job site prior to preparing the bid, on which occasion he saw the excess material. Thus, as a result of the pre-bid visits of Messrs. Graves and Edmonston, Appellant was on notice of the presence of excess waste on the job site which differed from the site conditions as set forth in the contract drawings.

Appellant reasonably assumed that the excess material either would be removed prior to the Notice to Proceed or if the material remained on the site, a change order or addendum would be issued after award. Though Appellant was not actually aware, its assumption on this matter was identical to that of the MTA. Babco had been directed both in writing and verbally to "vacate and restore" the site prior to Appellant coming on the job. MTA admits that it "did not expect bidders to include money for removing the excess material left on the job site by Babco; for that very reason, MTA issued a change order for removal of the remaining excess material by Appellant in August, 1983." (Respondent's Brief 31)

MTA maintains that the pre-bid site investigations also put Appellant on notice of the ponding conditions caused by the presence of the Babco material. Surface ponding was noted in the boring logs at Boring No. 10 and Boring No. 8. The boring logs were forwarded to Mr. Edmonston. Mr. Edmonston testified that he did not consider surface water in formulating the bid because he noticed only minor ponding during his visits to the site. He defined minor ponding as approximately five feet in diameter and six inches deep. MTA Resident Engineer, Mr. Naurot, was on the job site on the date Mr. Graves made his borings. Mr. Naurot testified that the ponding was not significant and that there was only a small puddle of water a couple of inches deep. The ponding did not resemble the one-half to one acre pond at the time of Notice to Proceed.

Because of the presence of the excess material and the resultant ponding, Appellant was unable to begin work as planned at the lower end of the Access Road. In Head Construction, Co., 77-1 BCA ¶12,226, the contractor was prevented from commencing work because the site was not available. The Engineering Board held that "when Respondent gave Appellant

the Notice to Proceed, which is equivalent to an order to get equipment and men on the job and to begin performing the work, there was an implied contract that the site was available for work." Citing McClosky v. U.S., 66 Ct. Cl. 105, the Board restated the principle that "a failure on the part of the [Respondent] to make available to the contractor the site upon which the work was to be performed, if it occasioned delay in performance and caused damages to the contractor, entitled him to recover his loss." The Board also held that Respondent is liable under the Suspension of Work clause whether or not it was negligent in meeting its obligation to provide the work site. See Merritt-Chapman & Scott Corp., 194 Ct. Cl. 461 (1971).

MTA seeks to bar recovery under the Suspension of Work clause because of Appellant's knowledge of the site conditions. MTA relies on Joseph Kaplan, Inc., 82-1 BCA ¶15,504 at 76,893 in which the contractor was precluded recovery under the Suspension of Work clause because of the knowledge that it gained during the pre-bid site investigation. Yet, in the case at hand, although Appellant had knowledge of the site conditions it was acting on what it thought was MTA's implied responsibility to restore the site prior to Appellant commencing work. As early as October 1982, MTA informed Babco that they would have to restore the site prior to Appellant's start of work. MTA was making "every effort to have the material removed from the site" including calling Babco every day. MTA was clearly aware that Appellant intended to begin work with the Access Road in the area of Babco's Mountain, as submitted in a proposed construction schedule. Furthermore, the contract itself required that a sediment trap at the lower end of the Access Road be constructed first. Thus MTA knew of Appellant's intended sequence of operations and knew that Appellant would be unable to



proceed as planned with the Babco material in position. Appellant is therefore entitled to an equitable adjustment under the Suspension of Work clause as a result of being denied access to a necessary part of the work site.

MTA further argues that its alleged interference should be characterized as a constructive change under the Changes Clause and therefore treated as a change order under the Changes Clause. The Changes Clause would give Appellant twenty days from the Notice to Proceed of May 16, 1983 to notify the procurement officer that it regarded the requirement to proceed while the excess material remained on the site to be a change order. Thirty days thereafter it was obligated to send written notice of its intentions to submit a claim for an equitable adjustment. The sole written communication from Appellant to MTA was a letter on June 1, 1983 stating that excess material prevented installation of the sediment trap and requesting the issuance of a change order to compensate it for the drainage ditch to correct ponding conditions.

Boards have shown a willingness to waive compliance with the notice requirements where lack of notice does not prejudice the Government. The Government can be prejudiced by lack of notice in either of two ways: "[T]he first is in the investigation and defense of claims and the second is in the consideration of a viable alternative to the course of action actually taken."

M.M. Sundt Construction Co., ASBCA No. 17475, 74-1 BCA ¶10,627 at 50,425.

MTA had knowledge of the facts giving rise to the claim, i.e., the excess material, and hence was not prejudiced in its investigation and defense thereof. Yet MTA does claim that it was prejudiced in the consideration of a viable alternative. MTA states in its brief that "had timely notice been submitted, steps could have been taken to expedite restoration of the site." (Respondent's Brief 36). However, since by its own admission, MTA was

making "every effort to have the material removed from the site" it is difficult to see how MTA was prejudiced. Thus since no prejudice is evident, we hold the notice requirements of the Changes Clause are waived.

**B. Impact - Babco's Mountain**

Messrs. Hawes, Craig and Palmer all testified as to Appellant's intended sequence of work. They testified that Appellant planned to first install sediment control items as required by the contract and thereafter commence loader excavation at the Access Road, beginning at the lower end and working toward Wabash Avenue. MTA asserts that in preparing its bid, Appellant planned to excavate the Access Road starting at Wabash Avenue and then proceed into the site in the manner it actually performed. MTA cites testimony by Appellant's estimator, Mike Edmonston, to support its position. Mr. Edmonston initially testified that his plan would have been to start at Wabash Avenue and work into the site. However, on redirect he testified that he could not recall his actual plan. He also testified that a contractor always starts excavation at the low point and works upward in order to keep the water behind him. This would require Appellant to begin excavation at the bottom of the Access Road and not at Wabash Avenue.

Appellant could not begin excavation at the lower end of the Access Road because of the presence of the Babco material and the adjacent ponding. The site was not cleared until September 13, 1983, one month after Appellant's planned completion for all excavation. As a result of the interference Appellant was forced to begin excavation at Wabash Avenue. Appellant could not complete the full length of the Access Road and even in the portion they could excavate, they were unable to reach final grade. At the upper portion of the Access Road, between station 13+00 and station 15+00, Appellant was able to excavate within one or two feet of subgrade. Yet at

the lower end, where Appellant had excavated a trench to alleviate ponding, Appellant could not excavate the Access Road to a greater depth than the highest area of the trench or else the area would pond. As a result, Appellant had to leave the area between station 15+00 and station 17+00 at 4.5 to 7.5 feet above subgrade. This meant that Appellant could not maintain the steeper grades originally contemplated and therefore the flatter grade resulted in poorer drainage.

Appellant's original sequence of work allowed Appellant to excavate into a bank in the generally preferred manner of excavation. MTA argues that when Appellant moved from the Access Road into the site they were able to excavate into a bank because the Access Road was lower than the area to the left of the Access Road. As MTA notes, Appellant was able to excavate into a bank with a maximum height of three feet between station 13+00 to 15+00. However, if the Access Road had been brought down fully, Appellant would have had a full five foot bank. More importantly, the area to the left at station 15+50 to 17+00 provided only a foot or less in bank height where as the Access Road should have been 4.5 to 7.5 feet lower in this area providing a more significant bank. Thus, the actual sequence did not permit excavation into a bank to the extent permitted by the planned sequence.

In addition, the actual sequence created a less effective haul route from the site as a result of Appellant's inability to construct the full length of the Access Road. Appellant was able to use the Access Road between stations 12+00 to 15+00 as a permanent haul road offsite. However, this represented less than 50% of the total length of the Access Road which ran from station

12+00 to 18+50. It was the inability to use the other half of the Access Road as a permanent haul road which denied Appellant an advantage and made its operation less effective.

C. Liability — Maintenance Building

Appellant was required to excavate approximately eighteen to twenty-two feet in depth in the area of the Maintenance Building and adjacent parking lots. When it was within three to five feet of subgrade Appellant encountered saturated material and a serious water problem. The ground water elevation was above subgrade and resulted in standing water on the surface of the excavation. Appellant contends that the saturated material and water problem is a Type I differing site condition.

A Type I differing site condition is one "differing materially from those indicated in the contract." GP-4.04(1). The law is well settled that if the contract is completely silent as to the subsurface or latent condition ultimately encountered, the necessary assumption for a Type I changed condition falls. See Weeks Dredging & Contracting, Inc. v. U.S., 13 Cl.Ct. 193, 219 (1987). To recover for a category one differing site condition, "there must be reasonably plain or positive indications in the bid information or contract documents that (the) subsurface conditions would be otherwise than actually found in contract performance." Weeks at 219.

MTA argues that borings only represent the conditions at the location of the boring itself and the logs make no representations as to the subsurface conditions between borings. MTA cites a number of cases for the proposition that test borings do not necessarily indicate subsurface conditions at every site location. In Erickson-Shaver Contracting Corp v. U.S., 9 Cl.Ct. 302 (1985) the court held that borings spaced several thousand feet apart do not purport to establish a clear soil profile and put the

contractor on notice of potentially significant variations along the area. In Titan Midwest Construction Corp., ASBCA No. 23594, 81-1 BCA ¶15,067, borings placed .7 miles away and at an elevation of 10 feet higher, could not be reasonably relied upon. Finally in Weeks Dredging, supra in which borings were placed 300 to 1000 feet apart, the court summarized: "a reasonably prudent contractor would have realized the relatively limited scope and utility of the information the government was intending to provide relative to the intervening subsurface material, between the logs throughout the entire contract site." (Underscoring in original). MTA likens the above cases to the case at hand and states that "the distance between the location of the borings and the conditions encountered preclude any reasonable assumption as to the expected conditions." (Respondents Brief 61).

The case at hand, however, presents a much stronger case for reliance on borings than the cases cited by MTA. At the Wabash site, test borings were generally 100 to 200 feet apart and the maximum distance from a test boring to an area of wet conditions was 200 feet. The purpose of the differing site conditions clause is to protect the contractor from suffering the burden of dealing with unforeseen circumstances thus eliminating the speculation often present in subsurface operations and, therefore, reducing inflated bidding. Erickson-Shaver supra at 304. Clearly, if the goal underlying this clause is to be given any effect, contractors must be able to rely, to some extent, on the inferences and implications in the contractual representations.

The Armed Services Board of Contract Appeals recently addressed this issue in Accent General, Inc., 87-2 BCA ¶19,689 at 99,680.

We are not unmindful that as an absolute proposition a boring, and its attendant log, show the conditions only in the bored hole. We live, however, in a practical world and it is certainly not practical, even if it were possible, to drill every square inch of a proposed construction site to determine subsurface conditions. This fact of life has to be taken

into consideration in determining what use prospective bidders reasonably can make of the boring log information furnished to them.

There is no firm rule of which we are aware regarding the distance around a boring that may be considered as falling within the indications shown in the boring log. On prior occasions we have simply determined what was reasonable . . . . In our judgment a test boring taken about 33.75 feet from bent 2 reasonably could be considered as an indicator of conditions along bent 2.

Applying this reasonableness standard to the case at hand, we hold that the test borings did make representations as to ground water conditions up to a distance of 200 feet.

MTA further argues that even if the borings did make representations as to areas where wet conditions were encountered, there is no Type 1 differing site condition because the Geotechnical Report accurately described the conditions encountered. According to MTA, the Geotechnical Report put Appellant on notice of the probability of encountering wet conditions.

First, MTA notes that borings 14, 15 and 17 contained in the report show groundwater to be approximately two feet below subgrade. MTA cites the testimony of Mr. Hawes that ground water should have been expected "within a foot or so" of the actual ground water level. However, even at these boring locations, Appellant hit water at elevations higher than it should have. If Appellant should have expected to encounter water approximately one foot higher it would have expected it one foot below subgrade not as in the Maintenance Building area and adjacent areas, where wet material was encountered three to five feet above subgrade, a condition not made foreseeable by any test borings or seasonal fluctuations.

Second, MTA contends that Appellant was put on notice by the natural moisture content levels contained in the Geotechnical Report. The Geotechnical Report indicated that two-thirds of the soil excavated in the Maintenance Building area was wet.

nance Building area should have a moisture content averaging 37.4%, well above the optimum moisture content of 21.7%. These findings, however, are not relevant since they were taken at elevations far below those to which Appellant was to excavate in the particular location.

Third, MTA notes that the Geotechnical Report contained express warnings of possible problems in dealing with the soil. Page D8 of the report warned:

Based on the results of laboratory tests and on the visual inspection, much of the on-site materials appeared to have natural moisture contents which were above their 'optimum' level.

As the court stated in United Contractors v. United States, 368 F.2d 585, 598 (Ct.Cl. 1966), the most reliable indicator of the subsurface conditions are the contract borings. This does not mean that the contractor can or should ignore specific warnings contained in other portions of the contract. However, the warnings must be specific and read in the context of the information in the boring logs.

The warning on page D8 is consistent with the classifications in the boring logs. There are four classifications of moisture content — dry, moist, wet and saturated. Generally materials with optimum moisture content fall within the moist classification. Appellant is not making a claim for materials encountered which were above optimum or wet, but rather for materials which were saturated. The Geotechnical Report also contained warnings that the high natural moisture content may limit the use of on-site material as fill. Appellant was aware that it would have to dry the fill to reduce the moisture content. It is in the area of excavation where Appellant encountered unexpected difficulty relating to saturated soil.

The question that arises is, are these warnings, taken together with the natural moisture content results, and the test boring data, sufficient to put Appellant on notice of the saturated material encountered. Considering all of the above factors we hold that Appellant's reliance on the test boring data was reasonable and the other data cited was not sufficient to put a reasonably prudent contractor on notice of encountering saturated material.

**D. Quantum - Loader Excavation**

In computing the amount of an equitable adjustment awarded to a contractor "the reasonable cost of performing the work as changed is compared to the reasonable cost of performing as required originally." Granite Construction Company, MDOT 1014, 1 MICPEL 66 at 34. In this appeal, Appellant has compared the actual unit cost during impacted periods with a reasonable unit cost without impacts in order to measure the additional costs which would not have been incurred "but for" the actions or inactions of the MTA. This procedure was used by the Board to compute loss of productivity in Calvert General Contractors Corp., MDOT 1004, 1 MSBCA ¶5 (1981) and C.J. Langenfelder & Son, Inc., MDOT 1000, 1 MSBCA ¶2 (1980).

To determine the reasonable unit cost without impacts, Appellant identified its least impacted period which contained substantial excavation. Period four was identified by Appellant's excavation expert, John Clark, as the least impacted period. Period four ran from July 5, 1983 through August 5, 1983. During this time, Appellant excavated 73,422 cy or approximately one half of the excavation. To account for the lack of rain in July, Appellant adjusted the unit costs upward using their experience in June 1983, a relatively wet month.



MTA objects to the use of period four as a base period. MTA claims that minimal rock excavation was done in this period, inflating production results. The evidence does not support a finding that the amount of rock encountered in this period was unusual or had an impact on loader excavation costs. Furthermore, in determining the use of this period as a base cost period, Appellant ignored MTA caused impacts. During this period, the Babco material was being removed by Baltimore Asphalt via the same entrance and exit Appellant was using for its operation. In addition, Appellant was still suffering the effects of working out-of-sequence as a result of the Babco material and ponding. Any alleged increase in productivity due to minimal rock excavation was offset by the Babco complications.

In an effort to isolate the various impacts and their effect, Appellant broke the loader excavation into eight periods of time. Generally, a new period was started where additional problems were encountered.

Period One - 5/24/83 - 5/25/83

MTA acknowledges that Appellant is entitled to recover the claimed amount of \$2,456 representing the cost of digging the drainage ditch to relieve the ponding in front of Babco's Mountain.

Period Two and Three - 5/26/83 - 7/4/83

Appellant is entitled to the claimed amount of \$13,901 for these periods, representing a loss of productivity of 25% to 30%. This loss of productivity is attributable to resequencing and drainage problems caused by the presence of Babco's Mountain. As stated previously, Appellant could not start at the bottom of the Access Road or complete the entire length of the Access Road. They were forced to start at Wabash Avenue and excavate down towards Babco's Mountain, turning south into the site before completion.

Appellant's costs were also increased by the presence of saturated material in the Babco area. The increased costs in this period can be directly attributed to the actions or inactions of MTA.

Period Four - 7/5/83 - 8/5/83

No recovery is sought for this period.

Period Five - 8/8/83 - 8/18/83

Appellant claims costs of \$20,839 representing the cost of excavating 9,431 cy of material in Arundel Quarry and the difference in trucking costs between Arundel Quarry and Wabash. In early August, Appellant believed that there was not enough suitable material remaining on site to satisfy its commitment to Milford Mill. Subsequently, they moved one loader from Wabash to Arundel Quarry, where they obtained 9,431 cy of material which was trucked to the Milford Mill job. On August 11 and 15 Appellant was able to excavate 3,294 cy from Wabash. In retrospect, Appellant was incorrect in its quantity estimate as over 39,000 cy of material was later excavated from Wabash and hauled off site.

Appellant had two reasons for believing there was not enough material at the Wabash site to meet its needs. One, it believed that the area underneath Babco's Mountain and the pond area might be unsuitable as fill. Appellant did not want to risk hauling suitable material off site only to have to bring it back on site to use as fill. Two, because of the steep grades around the maintenance building area, Appellant could not remove the material without constructing a ramp. A less expensive method, using the Loop Road ramp and the Access Road could only be done after the Babco material was removed.

The problems in this period resulted from Appellant's misjudgment as to the sufficiency of remaining quantities of suitable material. Appellant notes that any quantity estimate is subject to variation, including the method based on truckload count as used by Appellant. Yet management of the project to ensure that sufficient material for the fills remained on site was solely Appellant's responsibility. Were it not for Appellant's miscalculation, the Arundel costs would not have been incurred. In addition, Mr. Hawes testified that the reason a haul road, allowing excavation from the maintenance building area, was not built was due to Appellant's miscalculation. Thus, the additional costs incurred in this period were due to Appellant's misjudgment and cannot be recovered from MTA.

Period Six - 8/10/83 - 9/1/83

Appellant claims \$3,755 representing a 50% loss of productivity resulting from the discontinuous nature of the work and saturated materials encountered. During this period Appellant basically performed change order work on the removal of Babco's Mountain and the construction of the connecting road. Appellant claims that as a result of these two items, very little excavation work was performed. Appellant claims additional costs were incurred performing change order work in the Access Road on August 11, 12, 15, 18, and 19, 1983.

There is a dispute as to where Appellant's operations were taking place on August 11 and 15. Appellant's daily reports show that 3,294 cy of material was hauled off-site from stations 19+00 and 19+50. However, the reports do not state whether the stationing is for Baseline A (Service & Storage Area) or the Access Road area. MTA's earthwork expert, Mr. Steven Hunt, testified that the work must have taken place along Baseline A. This is based on his opinion that the timesheet reference to station 19+50 would put

Appellant precisely in the area of Babco's Mountain. MTA finds it inconceivable that Appellant would excavate 3,294 cy of the unsuitable Babco material. In addition, MTA points to the MTA Daily Construction Log for August 15, 1983 to support its contention. Under item 007, the entry reads:

Excavated rock and soil 18+50 - 20+50 service and storage building area (hauling to Milford Mill).

What makes this significant is that the Service and Storage area is at a location in the site far from the impact of the Babco material as opposed to the heavily impacted Access Road area. Although this entry is coded "item 007" for rock excavation, the entry sets forth the location of both common and rock excavation.

Appellant points out an alleged conflict between MTA's and Appellant's reports on August 15, 1983. While the MTA inspector's Daily Report indicates that the JD-844 loader is working on item 007 rock excavation, Appellant's daily report shows it working on common excavation. Appellant also relies on the testimony of Mr. Hawes who testified that the excavation occurred near Babco's Mountain in preparation for future work in the area. Appellant submits that Mr. Hawes' judgment on where the work was performed is better than that of Mr. Hunt who was not on the site at the time. The Board agrees and we find the testimony of Mr. Hawes convincing evidence that Appellant was working on common excavation in the Access Road area.

As to the three remaining days in Period Six, Appellant is not entitled to an adjustment. On August 12, work was shut down as a result of rain on the previous day. It also rained early the morning of August 18, causing the material to become too wet for its use at Milford Mill. On August 19, Appellant's loader and dozer worked 12 hours but the timesheets indicate these pieces of equipment were moving boulders. MTA is not responsible for

adverse soil or weather conditions impacting excavation. Appellant does not allege that the adverse weather was the result of being pushed into the rainy season since August is regarded as prime construction time. Therefore Appellant's recovery for this period should be reduced as follows:

Actual cost 5 days		\$6462.61	
Less costs	8/12	(863.29)	
	8/18	(1938.73)	
	8/19	(612.50)	
Actual cost		<u>\$3048.09</u>	+ 3294cy = .92/cy
Add'l cost	.92/cy - .82/cy = .10cy x 3294cy =		<u>\$329.40</u>

Period Seven - 9/1/83 - 9/17/83

Appellant claims \$8,358, representing a loss of productivity of 65% due to the lingering effects of Babco's Mountain and the wet conditions encountered in the Maintenance Building area. MTA claims that Babco's Mountain should have been removed prior to the start of this period thus having no effect on productivity. Appellant's daily reports show that the removal of Babco's Mountain was not completed until September 13, 1983. The removal of Babco's Mountain was coded 9005 in the daily reports and such entries were coded on September 1, 2, 3, 4, 10, 12 and 13. The continued presence of the Babco material hindered excavation in that area.

In addition the last three to five feet of material at the Maintenance Building and adjacent paved areas remained to be excavated. Upon commencing excavation, Appellant encountered fully saturated materials and standing water. As a result Appellant was unable to excavate using its normal procedures. Appellant was also forced to shut its excavation down while the MTA made a decision as to how to handle the water problem.

MTA contends that there was no impact to wet conditions in the Maintenance Building area on September 1, 2, 6, 7. It cites Appellant's letter dated September 15 stating that Appellant was unable to operate its equip-

ment in the area of the Maintenance Building as of September 9. However, the evidence finds that water conditions did impact on Appellant as early as September 1 or 2. There was testimony that an observation pit was dug on September 6 or 7 because of water problems encountered. This indicates Appellant encountered difficulties prior to September 6 or 7. In addition, progress photos No. 45 and 50, dated September 2, 1983 show Appellant working in areas of standing water. Thus Appellant should be awarded the claimed amount for this period.

Period Eight - 9/20/83 - 11/29/83

Appellant claims \$163,078 based on a comparison of unit costs and additional trucking costs. The increased costs resulted primarily from the saturated material and water problem at the Maintenance Building area. Appellant also encountered substantial rainfall in October and November which further decreased productivity. The rainfall caused production to cease on numerous days and also affected Appellant's ability to remove material over the haul roads. Appellant's schedule indicated that all excavation was to be completed by August 7, 1983. Even if this schedule was overly optimistic, it is clear that the reason Appellant was still performing excavation in October and November 1983 was the Babco's Mountain and Maintenance Building area problems. Since MTA was responsible for pushing Appellant into bad weather, Appellant is entitled to the increased costs resulting from the bad weather.

See Traylor Brothers Associates, MDOT 1028, 1 MICPEL 86 at 28.

Appellant stated that the saturated material excavated at the Maintenance Building site was unsuitable for use at Milford Mill and had to be disposed of elsewhere. Thus Appellant has included the cost of the trucking charges to waste the material. MTA claims that these costs are not recoverable since this material was never planned to be used at Milford Mill.

Appellant's bid projections indicated that they intended on hauling 123,000 cy of material to Milford Mill and prior to the commencement of loader period eight, approximately 134,000 cy were hauled. Furthermore, MTA claims that trucking costs would have been incurred whether Appellant was taking the material to the dump or to Milford Mill. Appellant responds that they intended to use all of the material at Wabash or the Milford Mill site. They state that if the material had been unsaturated they would have had only one haul cost — Wabash to Milford Mill. Because of the saturated material, Appellant had to haul the saturated material to the dump plus haul new material from an off-site source to Milford Mill.

Appellant's trucking costs are not recoverable. There is nothing in the record to support Appellant's assertion that it intended on using more than the 123,000 cy of material shown in the bid projections. Therefore any additional costs incurred because this material was not hauled to Milford Mill cannot be passed on to MTA. Appellant's recovery is limited to its claim for lost productivity totaling \$85,587.

## **II. Scraper Excavation**

### **A. Liability**

MTA acknowledges that there were coordinate problems with respect to the fill for the Loop Road and Storm Water Management Pond. They also recognize that these problems had an effect on productivity. The difference between Appellant and MTA on this item is the nature and dollar amount of the impact.

Appellant intended on starting at the low point which is the toe of the slope for the Loop Road fill and Storm Water Management Pond and working a three scraper operation in a single large fill. The larger area gives the contractor more locations in which to dry the material and more room for the scrapers to maneuver.

Because of coordinate problems at the outset, Appellant had to abandon its intention to start at the toe of the Loop Road and limit itself to the fill in the area of the Storm Water Management Pond. This area could not accomodate a three scraper operation. When revised coordinates failed to solve the problem, Appellant decided it needed a larger fill area and moved to the Loop Road fill, avoiding the toe of the slope area. This left Appellant working with two small separate fills while a third fill (toe of the Loop Road slope fill) remained unavailable. Appellant later went back and constructed the toe of the Loop Road slope fill but due to conflicts in the utility and site drawings the fills did not tie together and additional effort was required to bring them together. MTA argues that the portion of the Loop Road fill affected by redesigns represented only a very small portion of the total fill area and that there were always "vast sweeping areas comprising the vast majority of the site where Appellant could work" MTA asserts that Appellant should not be compensated for its choice of a less efficient method of operation. However, in determining the altered position of the contractor, "the presumption is that a contractor's claimed cost is reasonable, [and] the Government must carry the very heavy burden of showing that the claimed cost was of such a nature that it should not have been expended." C.J. Langenfelder & Son, Inc., MDOT 1000, 1 MICPEL ¶2. The State has not met its burden of showing that Appellant acted unreasonably in setting up separate fills, based on the facts known at the time of the decision.



### B. Quantum - Scraper Excavation

Appellant's approach to quantum for scraper excavation is similar to that used in the loader excavation. However in scraper excavation, there was no reasonably unimpacted period. Therefore, Appellant relied on estimates provided by its expert John Clark for the reasonable unit cost of scraper excavation.

Mr. Clark's estimate of the reasonable unit cost was \$1.01/cy. Mr. Clark based his estimate on his experience and on the Caterpillar Handbook, developing a reasonable daily production rate of 5500 cy per day based on a ten-hour day. MTA criticizes the use of this estimate on several grounds. MTA argues that Mr. Clark underestimates the impact of rocks and boulders on scraper productivity. Mr. Clark testified that rocks and boulders of up to two to three feet in size could be handled at optimum scraper productivity. He testified that where larger rocks or boulders were located Appellant would move around them. These larger rocks or boulders were excavated by a dozer, thus would have little effect on scraper productivity and was contemplated in the production rate used by Mr. Clark. We accept Mr. Clark's estimate of the impact of rocks and boulders especially in light of the fact that only on one day in the scraper period did Appellant report it was being slowed by encountering rock.

Next, MTA argues that Mr. Clark failed to take into account the warnings contained within the Geological Report in regard to soil conditions. Mr. Clark's estimate was based on the test borings in the scraper area which indicated that the soil was either dry or moist. We have held above that reliance on the test borings was reasonable despite warnings to the contrary.

Regardless, Mr. Clark testified that even if the material were above optimum, there would be little difficulty if the area was worked as one large fill with sufficient room to dry the material as Appellant had intended.

Lastly, MTA considers the estimate overly optimistic since there was no single day on which Appellant moved the 5,500 cy estimated by Mr. Clark. MTA does not recognize that the Loop Road coordinate problem could have such a harmful effect on productivity. However, as stated before, we believe the decreased productivity was a direct result of being restricted to three small fills rather than one large area and therefore Mr. Clark's estimate is not unreasonable.

Period One - 7/7/83 - 7/8/83

Appellant withdrew its claim.

Period Two - 7/9/83 - 7/13/83

Appellant claims \$3,999 for loss of productivity. On July 8, Appellant received its first set of revised coordinates for the Loop Road. On July 11, Appellant began laying out the Loop Road with new coordinates. Since Appellant was in the process of staking out the new coordinates it was forced to move its scraper operations to the Storm Water Management Pond. As Appellant continued in the limited area of the Storm Water Management Pond its production diminished and on July 13, it had to shut down its operation. At this point, it still could not move into the Loop Road area as it was awaiting further instructions to resolve the coordinate problem.

It is MTA's basic claim that Appellant should not be compensated for doing work which it was required to do under the contract, in areas untainted by the coordinate problems. As stated above, we believe all areas of the scraper operation were effected by the coordinate problems. In this period, Appellant was forced to operate in the limited Storm Water Management Pond

area as opposed to the large fill area which would have been available but for the coordinate problems. Thus the loss of productivity is a direct result of MTA's inability to provide proper coordinates.

Period Three - 7/14/83 - 7/24/83

Appellant claims \$19,448. On July 14, 15 and 16, Appellant shut down its operations in the Storm Water Management Pond while it installed a 48 inch pipe and awaited coordinates for other structures in the Pond. On these days, while the scrapers were not operating, Appellant used dozers to push material. MTA's expert Mr. Hunt determined the dozer work to be 40% less efficient as the scrapers. This estimate was based on the CAT Handbook and using a scraper production rate of 3800 cy achieved on July 20. MTA concludes that Appellant should be awarded inefficiency costs of \$3,103, representing 60% of the total costs for these three days.

Appellant objects to the use of the July 20 production rate of 3800 cy when on July 19 it achieved a production rate of 5100 cy. The rate of 5100 cy which occurred in an impacted period is close to Mr. Clark's estimate of a reasonable rate of 5500 cy. Mr. Hunt provides no reason for selecting the July 20 date over the July 19 date for comparison purposes. Thus we see no reason for abandoning the reasonable scraper production rate of 5500 cy used in other periods.

On July 18, Appellant restarted its scraper operations in the Storm Water Management Pond area. It soon decided to obtain additional fill and moved into the area between the centerline of the Loop Road and the center of the site. Appellant made this move even though it resulted in the Loop Road toe of slope having to be placed later in an abnormal, more costly

manner. Appellant suffered inefficiencies resulting from having to restart production, operate two small fills instead of one large fill and starting the Loop Road fill in at an abnormal point.

MTA repeats its same argument as to the perceived limited area of impact. In addition, MTA notes that Appellant encountered rock on July 20 and wet material on July 21, 23 and 24. Appellant states that rock and damp conditions would have had a minimal affect in a large fill and were exacerbated because of the limited room in which the scrapers had to maneuver. However, the time sheets describe wet ground conditions on both July 23 and 24. Wet conditions, as opposed to damp, do impact on productivity and would explain why no material was moved on those dates. Appellant cannot recover for any additional costs incurred on those days. Therefore, in Period Three, Appellant's recovery is limited to \$16,269.00.

Actual Costs 7/14-7/22      \$35,264 + 18,700cy = 1.88/cy

Add'l Cost      \$1.88cy - 1.01cy = .87cy x 18,700cy = \$16,269.00

Period Four - 7/25/83 - 8/1/83

Appellant claims \$18,476. Appellant states that "(t)he problems described in Period Three generally continued during this period." Appellant continued to suffer inefficiencies as it brought up two fills. In addition, Appellant encountered wet material which required drying. If more area had been available, the drying would not have been required. As the fills got smaller, Appellant reduced its operation to eight hours and two scrapers.

We find that the problems encountered drying material and the reduction in scraper equipment were the result of Appellant operating in separate fills as necessitated by the acts and omissions of MTA.

Period Five - 8/2/83 - 8/24/83

Appellant claims \$21,832. On August 2, 1983, Appellant received the final design for the toe of the Loop Road slope and began diverting its operation to construct the toe of the Loop Road slope fill. MTA acknowledges that the completion of the toe area during this period was an inefficient operation. The parties differ on the calculation of the inefficiency cost.

MTA's Mr. Hunt computed a reasonable unimpacted unit cost of \$1.68 per cy based on Appellant's actual unit cost for a four day period of July 20, 21, 28 and 29. He compared this cost with the unit cost of the placement of fill at the toe on August 2, 18, 19, 20 and 23. Appellant is correct in asserting that the dates selected to compute the reasonable cost do not represent an unimpacted period. Appellant was never able to use its intended sequence and operate uninterrupted in one large fill. In addition, the unimpacted period should be of sufficient length to provide a representative sample. Here, the representative period was only four days long and was broken into two days in one week and two days in another. Given this lack of an uninterrupted unimpacted period of sufficient length, Mr. Hunt's calculations cannot be given much weight.

Appellant also objects to Mr. Hunt's determination of the actual costs. Mr. Hunt based his determination on Appellant's daily reports indicating pan work on the Loop Road. Appellant alleges that these dates do not reflect all of the time spent working on the toe of slope Loop Road fill. In addition, other fills were impacted by Appellant's need to pull off in order to construct the toe of slope Loop Road fill on an intermittent basis. The Board accepts Appellant's analysis for this period and awards the amount claimed.

Period Six - 8/25/83 - 9/21/83

Appellant claims \$38,270. MTA argues that Appellant failed to meet its burden of proof on this claim. Mr. Hawes testified that there was a conflict between the utility, grading and civil drawings such that the Storage Road and parking lots did not tie together. He testified as to a potential drainage problem due to conflicts between the grading and civil drawings which MTA's proposed solution did not resolve. As a result, Appellant was forced to move material back and forth in an attempt to work out the problem. Later MTA accepted the site as built.

MTA would dismiss this testimony as "generalized, conclusory, unsupported opinion testimony." They cite Northbridge Electronics, Inc. v. U.S., 444 F.2d 1124, 1129, 195 Ct.Cl. 453, 462 (1971) for the proposition that such testimony does not compel respect or demand weight. But that is only the case "in the presence of contrary evidence of an objective nature." Northbridge at 462. The Board accepts the testimony of Mr. Hawes, along with the October 7, 1983 letter memorializing the drawing conflict problems, as evidence of drawings conflict problems, especially in light of the lack of contrary evidence.

MTA asserts a lack of timely and adequate notice of the drawings conflict problems. In a defective specifications situation, any notice given within a reasonable time will fulfill this requirement. Reasonableness is dependent on the consequences to the State of lack of notice. MTA has not alleged how it was prejudiced by any lack of notice. It asserts that it had no choice but to accept the job as built, yet it does not indicate that it would have pursued viable alternatives had notice been received. Given this lack of prejudice the October 7, 1983 letter will serve as adequate notice of the conflict problems.

### III. Fine Grading, Type III & Aggregate Base

#### A. Liability

Appellant's work in these areas was impacted due to delays pushing the work into periods of adverse weather and due to a lack of substantial areas available for continuous operations. The rain forced Appellant to delay work and to redo areas on several occasions. In addition, because of possible damage due to rain, Appellant attempted to fine grade and place Type III in smaller areas as they became available. Type III, although less weather sensitive than fine grading, was still impacted by rain. As a result, in most instances, Appellant was unable to place Type III on two consecutive days. The placement of aggregate base was affected as well. Wet conditions forced double handling of the material and placement was restricted to smaller areas as conditions permitted.

#### B. Quantum

MTA does not question Appellant's fine grading costs claim of \$49,511. The claim was based on a comparison of the reasonably achievable unit cost computed by Mr. Clark and the actual costs incurred. MTA does object to the quantum analysis regarding Type III and aggregate base costs of \$18,334. Mainly, MTA argues that the equipment mix used by Mr. Clark in preparing his estimate is not the one used by Appellant in its operations, thus rendering any comparison inadequate. Appellant did use additional equipment in these operations not contemplated by Mr. Clark in his preparation of an estimate. However, the equipment was used to place the material quickly and thus minimize weather damage resulting from being pushed into the rainy season. Therefore, the increased actual costs were a direct result of the actions or inactions of MTA.

#### IV. Idle Equipment - Liability & Quantum

Appellant claims \$38,368 based on stipulated equipment rates for equipment down time as a result of work being delayed into bad weather. Appellant includes costs for downtime between June 21-23 when the effects of rain were allegedly aggravated by the impact of Babco's Mountain. However, given the lack of specific evidence, we cannot say that the conditions on these three days, following the rainfall on June 20 and 21, were anything other than those conditions normally encountered on a job site following periods of rain. Thus, these costs should not be included.

Appellant's claim then includes costs from August 12 until actual completion on December 15. MTA argues that the audit report, the accuracy of which both sides stipulated to, found that many of the claimed idle pieces were used minimally, if at all, commencing sometime prior to the substantial completion date of December 15. MTA deducts those hours from the hours alleged by Appellant to arrive at total costs for the period August 12 through December 15 of \$29,328. We agree that this deduction is proper. Thus Appellant is entitled to recover \$29,328 in idle equipment costs subsequent to August 12.

#### V. Engineering & Layout - Liability & Quantum

The contract required MTA to provide reference points and establish baselines for Appellant to lay-out the work. Since MTA did not establish the baselines, Appellant was forced to rely on control points to layout the project. Two sets of control points were referenced in the contract: MTA 47, 48 and 49, and BJI 100, and BJI 200. They correspond to the MTA control system and the Baltimore City Control System respectively. Appellant proceeded to locate the MTA reference points set out on the horizontal and vertical control drawings. There was not sufficient information in the



drawings to locate MTA 47 and 49 in the field. MTA ultimately located MTA 49 for Appellant, but MTA 47 was never located. Appellant's reliance on these reference points indicated in the contract documents was reasonable. Furthermore, there was testimony that MTA could not locate BJI 100 and BJI 200 either.

Appellant also incurred additional survey costs as a result of Babco's Mountain, errors in the Loop Road coordinates, redesign of the Loop Road, errors in the coordinates with the Storm Water Management Pond, conflicts between utility and site drawings and the extended duration of the job. MTA acknowledges that Appellant is entitled to compensation for additional survey hours. The dispute is over the number of hours and the methodology used to compute that number.

Appellant claims \$27,083 based on the difference between the reasonable unimpacted surveying cost prepared by Mr. Clark and the actual costs. Appellant then added an additional 25% to Mr. Clark's estimate in an attempt to produce a more conservative figure.

MTA computed impacted hours by analyzing the surveyor's timecards, on a day-by-day basis, and categorizing the work by activity. MTA's claims engineer, Mr. George Shuster, determined that 485 hours were potentially impacted by MTA. MTA cites S.W. Electronics & Manufacturing Corp., ASBCA Nos. 20698, 20860, 77-2 BCA ¶12,631 at 61,218 to support its contention that a total cost method is disfavored. One of the requirements cited for using the total cost method is that "[t]he nature of the particular losses makes it either impossible or highly impractical to determine them with a reasonable degree of accuracy." We agree with Appellant that it is inherently difficult to identify "impacted" hours from the time cards with a reasonable degree of accuracy. Therefore, we accept the testimony of

Appellant's expert, as adjusted by Appellant, as to the impact costs of engineering and layout.

#### VI. Additional Supervision

Appellant claims \$29,698 in additional supervisory costs consisting of the labor and equipment costs of project engineer John Hillier and project superintendent Jack Jones. Mr. Hawes testified that only one engineer and one superintendent should have been necessary on this job but because of the delay and disruption, an additional project engineer and project superintendent were required. Since the additional services were shared with the Milford Mill project, Appellant is seeking only 50% of the costs associated with Messrs. Hillier and Jones.

MTA admits that Appellant is entitled to the costs associated with Mr. Jones but denies the necessity of Mr. Hillier's services. We hold that Mr. Hillier's services were made necessary by the acts and omissions of MTA. Thus, Appellant is entitled to \$29,698 in additional supervisory costs.

#### VII. Delay Analysis/Extended Job Duration

Appellant claims extended job duration costs of \$41,022 based on 86 compensable days of delay at the stipulated daily rate of \$477 per day. MTA submits that Appellant is only entitled to nine compensable days for a total of \$4,293 in extended job duration costs.

This case does not involve many individual delays to which a specific number of days and period of time can be assigned. Most of the delays are the result of lost productivity occurring on a daily basis over the full term of the work. In order to quantify the total delay, Appellant developed a "reasonably achievable" schedule in which the work could have been performed "but for" the MTA caused delay. This schedule was then compared to the

actual schedule to determine the number of days of delay. Appellant alleges that substantial completion was delayed 88 days beyond the anticipated completion date of September 21, 1983.

MTA, on the other hand, assembled three as-built schedules depicting the progress of all contract work, the progress of items necessary to complete the access road, and the progress of all work activities other than access road work. The total project schedule shows December 16, 1983 as the date on which contract work was completed. MTA accepts responsibility for two days of delay for the construction of the drainage ditch to relieve ponding adjacent to the Babco material and for four days in October during which Appellant installed inlets 7A and 9A. MTA argues its liability is limited to these 9 days ( $6 \text{ workdays} \times 1.4 = 8.4$  (9) calendar days). Since we have held MTA to be responsible for further delays, MTA's calculations are inadequate.

Before computations can be made the appropriate methodology must be determined. MTA argues that the "total time" approach used by Appellant is susceptible to inaccuracies. MTA objects to its use as it feels that the major delays were either not its responsibility or did not impact on operations. Yet the as-built schedule favored by MTA, in which delays are taken out of the schedule should provide approximately the same result. MTA's real objection lies in the reasonable schedule proposed by Appellant which MTA feels is overly optimistic and contradictory of earlier construction estimates.

The original schedule submitted by Appellant pursuant to GP-8.04 on May 20, 1983, reflects completion in approximately 6 months, from May 16, 1983 to November 11, 1983, including seeding, mulching and top soil items. At the hearing, Appellant's witnesses testified that the original schedule did

not reflect Appellant's intended schedule. MTA cites R.W. Contracting, Inc., ASBCA No. 24627, 84-2 BCA ¶17,302, for the proposition that Appellant should not be allowed to use an early completion schedule. In R.W. Contracting, the unsupported statement of the president of the company in absence of other evidence was not sufficient to allow the Board to conclude that the contractor would have finished thirty days early. The Board continued:

In addition - - - no 'realistic schedule,' or any schedule for that matter was prepared by the contractor that anticipated early completion.

Id at 86,219.

We find that Appellant has not proven that it would have completed work prior to the date in its proposed and claim schedules submitted on May 20, 1983 and April 11, 1985, respectively. Both of those schedules show completion of all work (aside from seeding, mulch and topsoil items which were omitted from the proof of cost) on or about October 18, 1983. The only evidence Appellant has presented is the unsupported testimony of its witnesses and the selfserving 'reasonable schedule' compiled after the job was completed for the express purpose of supporting its delay claim. At no time did Appellant submit to MTA a revised schedule or communicate in any way to MTA that it planned to complete work prior to October 18, 1983. Thus we find that delay costs should be assessed from October 18, 1983, which is 60 calendar days prior to the actual completion date of December 16, 1983.

Based on the sixty days of compensable delay as set forth in the above delay analysis, Appellant is entitled to additional compensation for extended job duration of \$28,620.

#### VIII. Extended Home Office Overhead

We accept Appellant's argument that the use of the "Eichleay" formula is the appropriate method for calculating extended home office overhead costs where the contractor has been delayed by changed work that increase its direct costs. We have recognized the use of this formula in the past.

Standard Mechanical Contractors of Maryland, Inc., MSBCA 1145 & 1165, 2

MSBCA ¶127 (1986). The evidence is clear that the MTA caused delays resulted in Appellant continuing to keep equipment and personnel on this project that could otherwise have been used elsewhere, thus causing the related home office overhead expenses to continue.

The MTA argument and its reliance on R.W. Contracting, Inc., *supra*, that under the facts of this case Appellant's home office overhead costs should be calculated by making use of the normal indirect cost allocation percentage rate is misfounded. Actual project delay caused by the government was not established in R.W. Contracting as it is in the case before us.

The parties have stipulated that the delay overhead rate should be based on a G&A rate of 9% applied to contract billings of \$1,985,177 and 215 days of performance. Accordingly Appellant is entitled to extended home office overhead compensation as follows:

$\$1,985,177 \times 9\% = \$178,665$  overhead allocable to contract

$\$178,665$  allocable overhead = \$831 Daily Contract Overhead

215 days performance

$\$831 \times 60$  days of delay = \$49,860

#### IX. Storm Drain Manholes

Contract Special Provision Section 02500, subsection 2.04 provides that manholes may be made of either brick, precast concrete, or cast-in-place concrete. The contract does not represent the diameter of the manholes. Contract drawing number BC-8 sets forth Baltimore City standards for a brick manhole, showing a 48" diameter.

Appellant proposed to use precast manholes for the storm drains. Regardless of the type of manhole used Appellant believed that it would be four feet in diameter. However, the pipes feeding into the manhole were too large for a 48 inch diameter manhole and Appellant was required to use a 60 inch diameter manhole in eight instances. Appellant alleges this constitutes a defective specification for which Appellant is entitled to an equitable adjustment.

We agree with MTA that the record is insufficient to support a finding that the failure of precast manholes to meet a dimension shown on a drawing of a brick manhole renders the specifications defective. No testimony was presented to support the reasonableness of Appellant's belief that the four foot precast manhole would be appropriate. In fact, Mr. Schuster testified that Appellant should not have expected the four foot diameter depicted to apply to a precast manhole. Appellant therefore is not entitled to recover any equitable adjustment related to its installation of storm drain manholes.

#### X. Predecision Interest

Appellant claims entitlement to predecision interest from June 25, 1985, sixty days after submittal of its claim, until the date of decision at 10 to 10.5%. MTA cites GP 10.01 which expressly forbids predecision interest:

Notwithstanding any other provision in this contract, the contractor hereby waives the right to predecision interest in the event of an equitable adjustment under any provision of these General Provisions including but not limited to GP-4.03 "Variations in Estimated Quantities;" GP-4.04 "Differing Site

Conditions;" GP-4.05 "CHANGES;" GP-8.07 "Suspension of Work;" or GP-8.10 "Termination for Convenience of the State."

As noted by Appellant, effective July 1, 1986, the procurement law provides that the Board may, in its discretion, award predecision interest notwithstanding any contract provision to the contrary. Section 11-137(j), Division 11, State Finance and Procurement Article., Anno. Code of Md. (Now codified as Sec. 15-222). However, this provision does not apply to contracts executed prior to July 1, 1986. The issue of retroactivity of this provision was addressed in Rice Corporation, MSBCA 1301, 2 MSBCA ¶167 (1987), involving a contract entered into in April, 1985. In Rice, the contract provided that "(t)he contractor and the State agree that no prejudgment or post judgment interest on any claims asserted by either party will be allowed." Id. at 22, 23. The Board held that Section 11-137(j) was not intended to operate retroactively and absent any challenge by Appellant to the contract general condition awarding predecision interest, the awarding of predecision interest is barred. Here, the contract was entered into on May 4, 1983, prior to the July 1, 1986 effective date of the statute therefore, as in the Rice case, predecision interest is not awarded as part of Appellant's equitable adjustment.

Appellant's assertion that MTA is in breach of contract for failure to pay money which it admits is due and owing does not constitute a challenge to the contract general condition regarding predecision interest and therefore is not a separate basis for recovery of interest.

## Summary

### Loader Excavation

Period	1	\$ 2,456	
	2	8,127	
	3	5,774	
	4	- 0 -	
	5	- 0 -	
	6	329	
	7	8,358	
	8	<u>85,587</u>	
			\$110,631

### Scraper Excavation

Period	1	\$ - 0 -	
	2	3,999	
	3	16,269	
	4	18,476	
	5	21,832	
	6	<u>38,270</u>	

		98,846
Fine Grading		49,511
Type III		12,144
Aggregate Base		6,190
Idle Equipment		29,328
Engineering & Layout		27,083
Additional Supervision		29,698
Extended Job Duration		<u>28,620</u>
Subtotal		392,051
Extended Home Office Overhead		<u>49,860</u>
Subtotal		441,911
Profit (10%)		<u>44,191</u>
Subtotal		486,102
Bond (0.4%)		<u>1,944</u>
Subtotal		488,046
General Liability Insurance (0.5%)		<u>2,440</u>
Subtotal		490,846
Storm Drain Manholes		- 0 -
Miscellaneous Change Orders (stipulated)		<u>25,000</u>
Subtotal		515,486
Credit - Payments made by MTA for Impact and Delay		<u>(33,690)</u>
Total		481,796