Ohio Department of Transportation
1980 West Broad Street, P.O. Box 899, Columbus, Ohio 43216-0899

September 10, 2002

Gary Yancer
C.J. Mahan Construction Company
PO Box 670
Grove City, Ohio 43123

RE: Decision of Deputy Directors Board Hearing

Dear Contractor:

The Deputy Directors Board has rendered the following decision in Step 3 of the Dispute Resolution Process on the dispute over delays to the erection engineering process and subsequent delay from an early completion date.

Hearing Date:	August 21, 2002
Board Members:	Walid Gemayel, Deputy Director, Division of Construction Management Mark Kelsey, Deputy Director, Division of Contract Administration John Hagen, Deputy Director, District 9
Dispute Number:	09-0178(01)-01
Project:	01-0178, US Grant Bridge
Owner:	Ohio Department of Transportation, District 9 **(ODOT)**
Prime Contractor:	C. J. Mahan Construction Co. **(CJM)**
Engineer's Estimate:	$27,235,000.00
Original Bid Price:	$28,434,495.93
Current Amount:	$28,408,186.21 (9 change orders)
Contract Executed:	June 1, 2001
Contract Completion Date:	June 30, 2004
Contractor Early Completion Date:	October 21,2003
Dispute Amount:	$4,777,725.74
Award Amount:	**$0.00** (Settlement recommended based on a 57-day delay)

General

This project requires the replacement of the existing U.S. Grant Bridge over the Ohio River in Portsmouth, Ohio. The 1,685 foot long proposed bridge is a main-span cable-stayed superstructure, supported by two cast-in-place reinforced concrete towers. The towers extend about 290 feet above the river and are to be constructed on drilled shafts extending into bedrock. The superstructure consists of structural steel frames supported by cable stays attached to the tower tops. The deck is to be constructed of precast, reinforced concrete slabs, erected on top of the steel frames, then overlaid with a microsilica-modified concrete wearing surface.

Basis of Dispute

The basis of the dispute, as stated in the CJM claim submittal dated August 7, 2002, is that the bid documents were incomplete and contain errors and inconsistencies with respect to the Dead Load (DL) condition of the completed structure. It is alleged that these errors and omissions required a major redesign of the structure by HNTB and generated plan revisions some as much as one year after the award of the project. According to CJM, all the above have delayed the completion of the Erection Engineering (EE), the structural steel detailing and fabrication and the early completion date by approximately nine months as of May 31, 2002. As of the date of this report, CJM states that the total claim amount is $4,777,725.74.

The summary of delay cost have been broken down by CJM in the following manner:

A. Delay Cost		
26. Extended Supervision	$ 350,570.34	
27. Extended Contractor's Office	$ 19,109.18	
28. Extended Owner's Office	$ 18,960.48	
29. Extended Maintenance of Traffic	$ 12,035.39	
30. Extended Railroad Expense	$ 9,229.44	
31. Extended Home Office Overhead (ODOT form.)	$ 487,262.00	
32. Labor Escalations	$ 173,785.36	
33. Material Escalations	$ 173,449.57	
34. Subcontractor's Escalations	$ 80,514.18	
35. Idle Equipment	$ 388,336.40	
36. Tower Inefficiencies Mahan	$ 371,967.19	
37. Tower Inefficiencies Delta	$ 117,424.85	
38. Tower Insulation Cost	$ 31,790.77	
Total Delay Cost		$2,174,434.86
B. Engineering Expense		
39. Buckland & Taylor (B&T)	$ 141,165.80	
40. Mahan Construction	$ 40,032.78	
Total Engineering Expense		$ 181,198.67
C. Steel Fabrication Expense		
41. Misc. Steel Fabrication Increases	$ 5,269.00	
42. Additional Flange Thickness	$ 23,857.81	
43. Additional Raw Material Cost	$ 148,854.72	
44. Transfer to Palatka Plant	$ 139,176.49	
45. Fabrication Delays	$1,500,000.00	
Total Steel Fabrication Expense		$1,817,158.02

D. Miscellaneous Unresolved Design Changes

46. Electrical Changes	$	269,115.65
47. Revisions to 30" Cantilever Slab	$	93,773.75
48. Addnl. Reinforcing Ohio Appr. Pier Cap	$	3,309.93
49. Alternate Mix Design	$	5,175.45
50. Ohio Structures	$	2,525.25
51. Re-bar Couplers	$	14,178.04
52. Additional Strand	$	113,444.60
53. Additional Erection Durations	$	103,411.52

Total Misc. Unresolved Design Changes	$ 604,934.19
TOTAL CLAIM AMOUNT	**$4,777,725.74**

Overview of CJM Presentation

The CJM 150 slide PowerPoint presentation was narrated by Gary Yancer, Vice President. Mr. Yancer started the presentation by addressing the EE goals, Buckland & Taylor's (B&T) experience on similar cable stayed structures, EE specifications and staged submissions, and the unique aspects of the US Grant Bridge. The body of the presentation centered chiefly on the alleged plan errors and omissions that contributed to significant changes in DL definition, tower geometry, and moments. CJM then related these changes to plan revisions 6 through 12 claiming that HNTB had to redesign the bridge to reduce the magnitude of the DL errors and cover their mistakes.

The CJM presentation concluded with a comments on ODOT's rebuttal document. CJM asserted that it did not intentionally delay the project. The presentation did not address how CJM arrived at a 9-month delay or how it arrived at a delay claim of $4,777,725.74. However, this information can be found in the CJM dispute documentation submitted to the DDB .

Overview of ODOT Presentation

The ODOT 120 slide PowerPoint presentation was narrated by Dan Beasley, ODOT project engineer, Raymond McCabe, Senior Vice President at HNTB, and Dave Lewis, Project Manager at HNTB. The presentation highlighted the contract requirements and project status. The body of the presentation centered chiefly on design and EE issues. ODOT stated that CJM had everything it needed in order to proceed with the EE as of October 2, 2001. ODOT went on to address DL distribution, girder camber, tower geometry, locked-in moments and other technical details. ODOT remarked that CJM is using the erection engineering issues to build a claim against ODOT rather than build a bridge. ODOT detailed the erection engineering delays in a chronological fashion throughout its presentation.

The ODOT presentation concluded by comparing the early completion schedule to the delay of the project. ODOT stated that CJM had failed to start on time, had failed to meet planned work timeframes and that CJM does not appear to have a reasonable CPM schedule. ODOT stated that, as of April 30, 2002, the project has been delayed by CJM for a period of 236 calendar days, of which a total of 57 calendar days of delay is ODOT's responsibility. No discussion of damages owed by ODOT was made. However, departing from its written text ODOT did state that the 57 days of delay that CJM may be entitled to is now questionable at best in view of the lack of progress by CJM on this project.

Deputy Director Board (DDB) Findings and Conclusions

In reviewing the bid documents, it is evident to the DDB that the EE process is governed by a portion of the plan sheets but mainly by the Special Provisions (SP) entitled: Erection of Cable Stayed Spans, dated November 10, 2000 (SP). The SP have 12 sections detailing the assumptions made by the designer, CJM's responsibilities, the erection sequence, and other technical information pertinent to the EE process.

On May 29, 2001, B&T submitted Request for Information (RFI) number one proposing "to provide staged submission" for the erection engineering. This process is a deviation from the requirement of section .03.b of the SP which call for one complete EE process to be submitted 90 days prior to the start of construction.

After discussions between all parties, ODOT eventually accepted the following three stages for the EE process:

Stage 1. DL Model Development
1A- Deck and Tower property
1B- DL Model
Stage 2. Tower Capacity
2A- Tower Capacity
2B- Tower Demand
Stage 3. Detailed Erection Procedure

Accordingly, CJM baseline CPM schedule shows the three-stage EE activities starting no later than July 5, 2001 and completed no later than October 30, 2001. The schedule depicted overlap between the various stages indicating that CJM intended to move quickly from one stage to another without accounting for re-submittals or review comments from HNTB. ODOT believes that this overlap and the total period allocated for the EE process was "aggressive." ODOT points out that due to the complexity of the structure, section .03.b of the SP calls for a 90-day review time period provided for re-submittals. ODOT also indicates that after reviewing CJM escrow bid documents it became evident that this fast track staged process was included in CJM original bid.

The DDB believes that CJM may have underestimated the cost and time associated with the EE process.

On June 10, 2001, CJM submitted its original baseline CPM schedule. This schedule was not accepted by ODOT due to the lack of pertinent technical information regarding the construction of the bridge. CJM did not submit an acceptable baseline schedule until November 20, 2001, five months after the execution of the contract. This baseline schedule shows an early project completion date of October 21, 2003.

The DDB is uncertain of the genuineness of this baseline schedule which was submitted two months after CJM filed its early claim notice.

On July 11, 2002 CJM submitted RFI#3 requesting information needed by B&T in order to proceed with their Stage 1 DL model submission. The RFI listed the following items:

- Section properties for deck, tower, and foundation elements.
- DL of superstructure and its components per unit length.
- DL moments, reactions, deflection and camber in the Kentucky tower and abutment.
- Edge girder camber.

The record shows that, over the following weeks, discussion ensued between HNTB and B&T.

Then on **July 27, 2001**, ODOT issued a letter that indicated that it could not honor CJM's request for information due to the plan requirements that requires the contractor both to verify the accuracy of the erection method suggested in the plans and fully develop it.

The DDB believes that the CJM reply letter dated **July 30, 2001** is a key point in this matter. The letter stated that CJM "is not responsible to verify the accuracy of the structure design" and that "by not providing the necessary requested information, the erection engineer is basically required to redesign the structure, and then base the erection engineering on his version of the structure design." The DDB finds that these statements indicate a misunderstanding of the SP contained in the bid documents. Section .01 of the SP clearly states that:

> "a schematic erection sequence is shown on the plan and specified herein. Utilization of this sequence as presented is not mandatory and if adopted, becomes part of the Contractor's means and methods and is his sole responsibility... The Contractor shall define and analyze the loads to be supported during erection... If the Contractor elects to use the construction sequence shown in the plans, he shall ascertain for himself the practicality thereof and shall assume complete responsibility for the detailed design of the erection equipment... Modification of the structure for erection purposes will be permitted ... provided it is demonstrated that the details will have no adverse effect on the completed structure including long term maintenance... The safe erection of the bridge is the sole responsibility of the Contractor."

Also section .03, which **addresses CJM's responsibility,** states that "moments, shears, axial loads and other forces shall be computed and tabulated for the towers and the superstructure at a sufficient number of points to demonstrate that the load demand will not exceed the capacity and allowable stresses for erection." The DDB fails to see how CJM concluded that B&T was required to redesign the structure, when the SP clearly indicated a high level of engineering required for the erection process.

In its presentation, CJM claimed that the necessary information requested by RFI#3 was not included in the bid documents. The CJM July 30, 2001 letter, however, indicated that CJM "will utilize the end values, such as dead load at cable anchorage points; stay geometry; and the structure vertical alignment, as depicted in the contract documents." The DDB believes that the information was in fact in the contract documents.

In its presentation, CJM also indicated that because information needed to define the DL target condition was missing, B&T could not prepare the DL model in Stage 1B of the EE process. However, in its delay claim executive summary document, dated June 14, 2002 (ODOT Exhibit 12), CJM explains that B&T "calculated the dead load of the structure detailed in the plans. This is really nothing more than a take-off exercise." It is then clear to the DDB that the information required was not omitted from the plans.

The July 30, 2001 letter is also critical because it appeared after it was evident that CJM had failed to pursue the aggressive schedule it set for early completion of the project. Critical activities were not started on time and planned duration of those activities were exceeded. For instance, the accepted CPM baseline schedule shows the Ohio Tower cofferdam scheduled to start on July 19, 2001. The actual start date, however, was 55 calendar days behind schedule on September 12, 2001. The planned duration for that activity was 13 calendar days, but the actual duration was 43 calendar days.

Similarly, the schedule showed a start date for the drilled shaft activity on July 12, 2001. The actual start date, however, was 67 calendar days behind schedule on September 17, 2001. The planned duration for that activity was 20 calendar days but the actual duration was 43 calendar days.

During talks with the DDB, CJM verbally stated that it never had the chance to build the job as bid because the alleged owner caused delays occurred at the beginning of the work. CJM also stated that it was not interested in a "hurry up and wait" scenario where it would pursue the work as aggressively as planned only then to wait until resolution of the plan errors and omissions.

ODOT has also stated that on July 30, 2001 B&T understood that it was to extract RFI#3 information from the plans. Utilizing this information, B&T was then to make a submittal to HNTB for a quick review while continuing the development of the EE Stage 1. E-mail from CJM field staff and B&T also indicated that the exchange of information between HNTB and B&T was working well and that there was no need for a face to face meeting. It is clear to the DDB that CJM had another agenda in mind at that time.

Moving forward, on **August 9, 2001** ODOT called a meeting as required by section .03.c of the SP. This section states that "prior to his analysis, the Contractor shall meet with the engineer to discuss the proposed erection procedure, erection design criteria, and structure capabilities to support the proposed erection scheme." At that meeting ODOT inquired about the erection scheme that CJM intended to use. According to ODOT, B&T indicated that a balanced cantilever will be used for the EE process but did not give any additional information. ODOT believed that CJM may not be experienced enough or perhaps did not yet know how to proceed with the erection of the structure. According to CJM exhibit 13 and the B&T meeting records, however, it was noted that CJM will also be "following the erection scheme depicted in the plans as closely as possible." This clearly indicates to the DDB that CJM had studied the plans and elected to sequence its erection work accordingly. The plans show the erection of the deck segments to begin at the Kentucky tower first, then the spans supported by the Ohio tower to be erected second. The plans also show a derrick positioned on the deck. The DDB found that CJM's baseline schedule indicated a span frames erection sequence matching the one found in the plans.

The DDB finds that the plans do not specifically state the construction sequence of the two towers. The DDB finds , however, that the plans conceptual erection scheme shows staging for one side of the structure, then the other side and finally the main span closure. HNTB also confirmed in its presentation, that a sequential tower construction has been the norm for US structures. It would then appear that a prudent bidder would deduce that a sequential construction scheme is implied in the plans. The CJM baseline schedule, however, reflects the two towers to be erected simultaneously. The schedule shows work on both towers starting August 30, 2001 and completed on June 4, 2002 for the Kentucky tower and July 9, 2002 for the Ohio tower.

The DDB believes that ODOT could have easily inquired about this simultaneous erection shown in CJM schedule. Similarly, the DDB believes that when CJM examined the plan erection scheme, red flags should have went up regarding HNTB's assumption for tower construction sequence. Considering HNTB's and B&T's vast experience in cable stayed bridges, the DDB questions why neither party addressed this important issue at the August 9, 2001 meeting.

On September 6, 2001, B&T submitted their Stage 1A for the Deck and Tower Property to ODOT for review. CJM stated that when B&T "compared their calculated dead load of the structure to the cable forces supporting it, they found they did not match ... this difference was on the order of approximately 4%. This increased weight would result in a theoretical sag at midspan of approximately 12 feet, based on the cable forces shown in the plans resisting this

load." (ODOT Exhibit 12: CJM delay claim executive summary document, dated June 14, 2002)

In response HNTB indicated that a 5.5% discrepancy applied to the real structure would only produce 4.5 inches of deflection at mid span. HNTB also pointed out that since "the superstructure lacks stiffness to resist any global imbalance between superstructure weight and cable forces," the cables should be tensioned against the weight of the bridge to get the desired profile. Section .05.d.2 of the SP also states that the "cables shall be adjusted for the dead load conditions such that each individual cable shall not exceed values ± 5% of the cable dead load computed from the working drawings." This indicates to the DDB that differences in DL is a normal occurrence and is easily adjusted by modifying cable forces within the parameters given in the contract documents.

HNTB also correctly indicated that B&T should have provided HNTB with its required plan take offs at the August 9, 2001 meeting. If this was done, the DL issue could have been resolved prior to the September 6, 2001 B&T submission.

On September 10, 2001, HNTB stated that it became apparent that it did not fully include some of the non-structural DL weights in establishing the cable forces shown on the plans. HNTB also estimated its DL increase to be about +4% over the original DL shown on the plans.

The DDB recognizes that at that time both parties seemed to be in agreement that a plan error had been discovered and resulted in an increase in DL.

On October 2, 2001 HNTB e-mails B&T acknowledging the "small" difference in DL and advising that the new DL computed by B&T is acceptable. HNTB explained that it had missed the DL due to an additional 2-foot deck extension.

The DDB believes that the HNTB e-mail dated October 2, 2001 is another key point in this matter. DL is typically estimated at the time of design. The DL estimate should be reasonablely accurate, but it is never perfect. An easy example would be the assumption that the concrete used in construction would weigh 155 pounds per cubic foot. Testing data from the Department's central lab, however, indicates an actual weight closer to 143 pounds per cubic foot. This 2.6% difference would certainly not call for a re-design of the structure and its components, but requires adjustments made by the erection engineer during the EE phase. These adjustments are usual and necessary especially given a project that both parties have described as so complex and unique.

Considering that this DL difference is not unusual and will only require a small increase in the cable forces, and further that it does not or should not have had an impact on the EE schedule, the DDB concludes that B&T could have proceeded with its EE schedule.

The DDB points to section .05 of the SP which states that the contractor "shall be responsible for geometric control construction so that the complete structure will conform to the lines, grades, and dimensions and cable stresses shown on the plans." The DDB finds that CJM could have directed B&T to adjust cable forces accordingly.

As a matter of fact, on June 14, 2002, CJM stated that the error and omissions "were identified during the very initial stages of the erection engineering process, before the specifics of our procedure could even be addressed." (ODOT Exhibit 12).

That being the case, these alleged errors could have been easily reconciled between B&T and HNTB while CJM pursued the work as shown on its baseline schedule. ODOT could have easily identified the costs of these errors, reimbursed B&T for their additional efforts, and extended the contract for the duration of this minor delay. However on September 4, 2001, CJM chose to send an early notice of claim, two months before the baseline schedule was submitted and accepted by ODOT in order to set the stage for an early completion delay claim.

The DDB finds that the nature of the events that took place after October 2, 2001 to be confusing at best. A plethora of technical information was exchanged between all parties via RFIs, e-mails, meetings and phone conversations. The DDB believes that this "fishing expedition" that took place sent the project schedule tumbling further down the rabbit hole.

Throughout this time period and later, CJM alleged that the information received should have been incorporated in the bid documents. Moreover, that it was confusing, inconsistent and represented a change in bid conditions. After reviewing the documentation at hand, the DDB finds that key information contained in the bid documents is correct, and some supplementary data provided was needed while some went above and beyond the contract requirements.

The DDB also finds that some technical information offered in CJM presentation is inconsistent with discussions conducted between HNTB and B&T and is taken out of context. The quotes from Ted Zoli of HNTB are some examples.

The CJM also indicated in its presentation that due to its valiant effort to mitigate some of the delays the steel fabrication was moved to a different plant. The DDB finds, however, that ODOT had directed CJM to proceed with the structural steel detailing before the completion of the erection engineering. As a matter of fact, CJM, referring to the ODOT directive, stated that "these measures, taken against our recommendation, have not resulted in any benefit to the schedule at this point because the fabrication facilities will not be available when the materials show up." (ODOT Exhibit 12). To make matters worst, CJM also requested that all communication between ODOT and its steel supplier cease immediately. The DDB finds that the only reason the fabrication moved to a different plant is because ODOT mandated it.

Deputy Director Board (DDB) Conclusion

The DDB acknowledges that errors and omissions in the DL had been committed by ODOT. It appears, however, that as of October 2, 2001, CJM had all the necessary information to proceed with the EE. The DDB finds that the allegations presented by CJM are mere claim tactics submitted in order to obscure the reality of the delay.

The DDB finds and concludes that a reasonable offer of settlement is 57 calendar days of delay. The DDB remands this matter back to ODOT for an analysis of the actual amount owed CJM based upon this time frame.

This is not an award but an offer of settlement. If CJM accepts this offer it will constitute full settlement of the dispute and CJM will waive all rights to claim additional compensation based on claimed delays to the erection engineering process. CJM may pursue the subject dispute as a claim before the Director's Claim Board.

Under the provisions of the Department Dispute Resolution And Administrative Claim Process added to the project by change order 2, the Director's Claim Board "... is not bound by any offers of settlement or findings of entitlement made during Steps 1, 2, and 3 of the Dispute Resolution Process." Accordingly, the Director's Claim Board may not recognize the 57-day delay.

Should CJM chose to pursue a claim instead of accepting the DDB suggested settlement, then under the Administrative Claim Process, CJM must give the Secretary of the Director's Claim Board written Notice of Intent to File a Claim within thirty (30) calendar days of the DDB decision. Failure to provide such notice will waive the CJM rights to pursue a claim.

Also, under the Administrative Claim Process, the CJM will have to submit a certified claim document to the Secretary. The wording of this certification is found in the contract provisions added by change order 2.

The Secretary will not schedule a Director's Claim Board hearing until he has received the certified claim of CJM. Also, any potential interest period on any claim award will not start until thirty (30) calendar days after receipt of the certified claim.

Please inform me as to whether your company accepts the DDB offer of settlement.

You may contact me at 614-644-6588 with an procedural questions.

Respectfully,

Vernon Dunlap, P.E.
Secretary of the Director's Claim Board

copies sent via e-mail and post mail:
Director's Claim Board: M.E. Kimberlin, C. Misel, B .Merry, R. Howard
Deputy Directors Board: W. Gemayel, M. Kelsey, J. Hagen, C. Bishop
District Team: J. Setty, D. Beasley, R. McCabe, D. Lewis, G. Angles, F. Caputo
Fund Managers: T. Bell, J. Townley
Dispute File

Ohio Department of Transportation
1980 West Broad Street, P.O. Box 899, Columbus, Ohio 43216-0899

September 30, 2002

Gary Yancer
C.J. Mahan Construction Company
P.O. Box 670
Grove City, Ohio 43123

Re: US Grant Bridge, Project 178(01), Dispute 09-0178(01)-01
Decision of Deputy Directors Board Hearing - Post-Hearing Supplement

Dear Contractor:

This letter is a summary of the Deputy Directors Board (DDB) good faith efforts to negotiate a settlement of the dispute in a meeting with your representatives on September 27, 2002.

Please consider this letter as a supplement to the original DDB letter dated September 10, 2002.

Analysis of Actual Amount Owed to CJM Based Upon the DDB Conclusion

On September 27, 2002, the DDB offered C. J. Mahan Construction Company (CJM) a monetary settlement of $682,924.62 based on the entitlement of 57 calendar day of delay. This offer was conditional on two items: One, CJM agrees that there will be no more delay claim during the period of the dispute, with the exception of the drilling subcontractor and steel supplier issues. Second, CJM will no longer have an early completion delay claim against the Department. During the meeting, the Board briefly recounted items 26 through 53 of the claim and the associated dollar amount presented for settlement.

After some discussion of project level progress and the DDB's findings, CJM stated that it cannot accept this monetary settlement offer.

This supplement letter serves as a reminder to CJM to submit a notice of intent to file a claim with the Directors Claims Board (Step 4) within 30 days of the DDB's decision letter dated September 10, 2002.

Please note that under the provisions of the Department Dispute Resolution And Administrative Claim Process, the Director's Claim Board my not recognize the monetary settlement offer presented at the September 27, 2002 meeting.

Respectfully,

Clint M. Bishop, Assistant Secretary
Deputy Directors Board

c: W. Gemayel
M. Kelsey
J. Hagen
G. Angles
V. Dunlap
Dispute File