In Re:	)	ODOT Project: 510(02) MEG-US 33-15.70
	)	
Mahan/National, A Joint Venture	)	John J. Petro, Chairman
	)	Paul Silvestri
and	)	Barry J. Miller
	)	
The Ohio Department of Transportation	)	
	)	**DECISION OF THE DISPUTE REVIEW**
	)	**BOARD ON MAHAN/NATIONAL, A**
	)	**JOINT VENTURE'S TOWER CONCRETE CLAIM**

A. INTRODUCTION

On January 30, 2006, Mahan/National, A Joint Venture ("M/N") submitted a claim to the Ohio Department of Transportation ("ODOT") entitled "Tower Concrete Dispute." M/N and ODOT agreed to refer such claim to the Dispute Review Board ("DRB") for consideration. In addition, M/N and ODOT have further agreed to modify the terms of the Dispute Review Board proposal note which was incorporated into the contract for ODOT Project 410(02) MEG-US 33-15.70 pursuant to Change Order #3. As a result, M/N and ODOT have agreed as follows:

1. The DRB's ruling on M/N's claim shall be limited to the issue of entitlement.
2. The parties agree that the decision and recommendations of the DRB in regards to entitlement on the subject claim will be binding on both parties.
3. Either ODOT or M/N may appeal the decision and recommendations to the DRB for reconsideration. However, reconsideration will only be allowed when there is new evidence to present.

On January 30, 2006, M/N submitted its "Tower Concrete Dispute Report" to the members of the DRB for its consideration. On February 13, 2006, ODOT submitted its "Claim No. 10-020510-02 Tower Leg Concrete Rebuttal" to the members of the DRB for its consideration. On February 22, 2006, M/N submitted its "Tower Concrete Dispute – Rebuttal Report" to the members of the DRB for its consideration. On February 27, 2006, ODOT advised the members of the DRB that it would not be submitting a response to M/N's Rebuttal Report for consideration by the DRB.

On February 22, 2006, representatives of M/N and ODOT appeared before the DRB and presented their respective positions. M/N and ODOT each presented their arguments and evidence to the DRB until each was satisfied that the DRB was fully apprised of their respective positions. The representatives attending the February 22, 2006 meeting of the DRB are as follows:

ODOT Representatives:
Gary Angles, Megan Blackford, Kelly Brooker, Mark Kelsey, Bill Lindenbaum, Don Tillis,, Lloyd Welker, Steve Williams and Robert J. Henry from Baker

M/N Representatives:
Kevin Wiley and Gary Yancer

WVDOT Representatives:
Gary Mullins and Gary Ocheltree

B. THE TOWER CONCRETE CLAIM

The Tower Concrete Claim arises from the directed removal and replacement of upper tower leg sections: WV Tower 4N and WV Tower 4S ("WV Tower 4 Segments"). The following is the presented time-line of events which led to the directed removal and replacement of the WV Tower 4 segments:

1.	9/3/03	Progress Meeting Item #17 Kevin Wiley asked about using No. 8 coarse aggregate in some areas (M/N Exhibit #F)
2.	10/03	"O.D.O.T. determined that No. 8 aggregate was not permitted." At this point, the issue was dropped. (M/N Position Paper)
3.	5/4/05	Progress Meeting Don Tillis suggested getting No. 8 coarse aggregate mix approved…in such areas as the tower head. (M/N Exhibit #G)
4.	5/9/05	Email from URS Structural Manager No objection to the substitution of No. 8 coarse aggregate. Fields should be limited to the anchorage regions of the tower. (M/N Exhibit #2)
5.	8/3/05	Progress Meeting Item 25-N Tillis asked Wiley if he has No. S26000 mix with No. 8 coarse aggregate approved. Wiley stated he would check Portsmouth job. Tillis discussed the use of "pencil" vibrators. (M/N Exhibit H)

6.	8/8/05	The mix design using No. 8 coarse aggregate that was developed in October of 2003 was submitted to the department. (M/N Position Paper)
7.	8/19/05	Concrete placed WV Tower 4 South
8.`	8/19/05	Fax – Department materials management to Smith Concrete (Concrete supplier to M/N). Thanking Smith for additional data on previous No. S26000 mix (S26000 with No. 8) (M/N Exhibit I)
9.	8/19/05	M/N claims the Department approved the mix design and assigned a JMF Number. (M/N Position Paper)
10.	8/24/05	Concrete placed WV Tower 4 North
11.	8/24/05	Concrete placement began using No. 8 course aggregate. After placing 12 cubic yards, the department directed the concrete supplier to switch back to No. 57 coarse aggregate mix. Mahan asserts the reason given by the Department was the strength results were 40 psi under the overdesign requirement. Subsequently, a revised mix design using No. 8 coarse aggregate was submitted and approved. This happened after 9/1/05. (M/N Position Paper)
12.	8/29/05	Forms removed from WV Tower 4 South
13.	8/29/05	ODOT directs M/N to patch the WV Tower segments pursuant to ODOT CMS Item 519
14.	9/1/05	Forms removed from WV Tower 4 North
15.	9/7/05	Progress Meeting Item #25 complete. (M/N Exhibit K) See Attachment A for complete text.
16.	9/7/05	Concrete placed at Ohio 4S and 4N
17.	9/22/05	Progress Meeting Item #14 Steve said future work on the tower segments will be placed with a No. 8 mix. 28 day tests are done this week from the load placed in the WV Towers. Steve will also require external vibrator on these placements. (ODOT Exhibit 10)
18.	9/23/05	Department Correspondence to Contractor Defining actions to be taken relative to: • Non-Destructive Testing • Stop Tower Concrete Placement • Use of External Vibrator (M/N Exhibit M)

19.	9/27/05 - 10/2/05	CTL performs ultra sonic pulse velocity testing on the WV and Ohio Tower 4 segments
20.	10/5/05	CTL issues its ultra sonic pulse velocity test result report to WVDOT
21.	10/19/05	ODOT transmits the 10/5/05 CTL ultra sonic pulse velocity test result report to M/N and states that the concrete for the WV Tower legs is not accepted. ODOT further requests that M/N submit a detailed plan for needed repairs. (M/N Exhibit H)
22.	10/19/05	ODOT advises M/N that the concrete testing on the Ohio Tower 4 segments is acceptable and work should proceed as normal on the Ohio Tower. (M/N Exhibit O)
23.	10/19/05	URS advises ODOT that it has reviewed the CTL ultra sonic pulse velocity test report. URS' interpretation of the CTL report indicates significant regions of poorly consolidated concrete in the WVC Tower 4 segments. URS recommends the removal and replacement of the WV Tower 4 segments given its belief that substantial regions may not have the necessary capacity to resist the structural demands at this location. (ODOT Exhibit 11)
24.	10/21/05	M/N submits its concrete repair procedure for WV Tower 4 segments to ODOT for review and approval. (M/N Exhibit P)
25.	10/26/05	ODOT confirms its direction to M/N issued on 10/24/05, which directed the removal and replacement of the WV Tower 4 segments. In addition, ODOT memorializes the agreement to obtain core samples of the in place concrete from the WV Tower 4 segments for testing purposes. (ODOT Exhibit 12)
26.	11/2/05	ODOT confirms its direction to remove and replace the WV Tower 4 segments. The removal and replacement direction is not dependent upon the strength test results for the core samples. (ODOT Exhibit 13)
27.	11/3/05	M/N submits the compressive strength test results for core samples taken from the WV Tower 4 segments. The compressive strength test results vary from 2870 psi to 5130 psi for the 8 core samples. (ODOT Exhibit 14)
28.	11/22/05 - 11/29/05	ODOT performs its own concrete core testing program on the Ohio Tower 4 segments. The CTL test report notes the compressive strength of its 9 core samples ranged from 2510 psi to 7200 psi. As noted by CTL the distribution of entrapped air demonstrated consistently delivered concrete with acceptable consolidation. CTL believed that the low compressive strength concrete results from the core samples was the result of the sampling and testing process. (ODOT Exhibit 15)

C. M/N's TOWER CONCRETE CLAIM

In essence, M/N asserts the following two basic positions in its Tower Concrete Claim as support for its position that it is entitled to be compensated for the cost and time involved in the removal and replacement of the WV Tower 4 Segments:

1. The use of #57 aggregate in the S2 concrete was a prescriptive specification which is defective. While this position has been characterized as a "rebar congestion claim," M/N asserts that this specification (mandating the use of #57 aggregate) in combination with the totality of forming and reinforcing conditions is defective. M/N further asserts that the honeycombing which occurred during the placement of the WV and Ohio Tower 4 segments would not have occurred had it been permitted to use a S2 concrete mix which contained #8 aggregate. Further, M/N asserts that it had properly sought and obtained ODOT's approval for the use of a concrete mix that contained #8 aggregate prior to the second WV Tower 4 segment placement, but was improperly denied the use of this mix by the Engineer.

2. The directive to remove and replace the WV Tower 4 segments was based upon a concrete quality standard which is beyond that imposed by the Contract specifications. M/N asserts that the directive to remove and replace was based upon the CTL's ultra-sonic pulse velocity test results that were improperly interpreted to represent inadequate concrete strength. According to M/N, the special provisions of the Contract at Section .14 preconditions any inquiry into low strength concrete to reported inadequacy in concrete cylinder testing. Since none of the concrete cylinders tested below the 10% threshold, no further testing was warranted and the honeycombing should have been the subject of a repair procedure, not removal and replacement.

D. ODOT'S RESPONSE

In essence, ODOT asserts the following in response to M/N's Tower Concrete Claim in support of the position that M/N is not entitled to any compensation for the cost and time involved in the removal and replacement of the WV Tower 4 segments:

1. The S2 concrete specification is not a prescriptive specification, instead it is better classified as a performance specification given the substantial flexibility accorded to the contractor in the mix design. The honeycombing problem that manifested itself on the WV and Ohio Tower 4 Segments was the sole result of M/N's improper means and methods utilized during concrete placement. In this regard, ODOT noted that while the use of #57 aggregate in lieu of #8 aggregate may have made the placement of concrete more difficult, an acceptable result could have (and was) obtained once M/N employed proper means and methods of concrete placement. Accordingly, M/N is solely responsible for the resulting poor consolidation of the WV Tower 4 Segment concrete. Finally, ODOT notes that M/N failed to obtain proper approval of the S2

concrete mix utilizing #8 aggregate prior to its attempted placement in the second WV Tower 4 segment. As a result, the Engineer properly exercised his responsibility when he directed M/N to cease its use.

2. The decision to remove and replace the WV Tower 4 Segments was based on the results of CTL's ultra sonic pulse velocity testing that demonstrated inadequate concrete strength. In addition, the designer of record, URS, determined that there was significant concern regarding the structural adequacy of these tower segments to support the structural loading even if repaired. This concern required the ultimate removal and replacement of the WV Tower 4 Segments. This decision was subsequently supported by URS's calculations and the reported compressive strength test results obtained from the WV concrete core samples. Finally, the Special Provisions of the concrete at Section .26 provide the Engineer with the authority to require removal and replacement of honeycomb areas that exceed 1" depth when supported by a structural review.

E. DRB DECISION

The DRB makes the following determination regarding the Concrete Tower Claim:

1. M/N has failed to establish the fact that the use of #57 aggregate in the S2 concrete mix was defective. Regardless whether the S2 mix using #57 aggregate is characterized as a prescriptive or a performance specification, the honeycombing which manifested itself in the WV and Ohio Tower 4 Segments was the result of M/N's improper means and methods of concrete placement. Further, the DRB finds that ODOT acted properly in accordance with its contractual rights to suspend the use of a S2 concrete mix utilizing a #8 aggregate prior to its formal approval for use on this Project. Accordingly, M/N is responsible for the correction of the defects and deficiencies associated with its improper concrete placement at the WV Tower 4 Segments.

2. The Special Provisions of the Contract set forth specific criteria to be utilized when the quality of concrete strength is questioned. Section .14 establishes that the initial inquiry is triggered when the test cylinders results are 10% less than specified strength. The information presented to the DRB does not establish any test cylinder results which meet this initial threshold. ODOT's assertion that it is entitled to rely upon Section .26 of the Special provisions of the contract to justify the decision to remove and replace the WV Tower 4 Segments is not supported by the terms of the Special Provisions. The Special Provisions define "segment" as a unit of the superstructure and not the substructure. The use of Section .26, however, as an expression of the Director's or the Engineer's exercise of the authority to accept or reject the work of M/N pursuant to MCS Sections 105.01, 105.03, 105.09, 105.11, 105.12 and 106.08 is reasonable. The DRB, however, determines that the requisite structural review required to support the decision to remove and replace the WV Tower 4 Segments was not performed. The use of CTL's ultra sonic pulse velocity test results to establish concrete strength is not supported by this testing methodology. Further, the use of the concrete core compressive test results to establish substandard concrete strength is inconsistent with CTL's own interpretation of these results.

> Accordingly, the DRB determines that the use of CTL's ultra sonic pulse velocity test results to support the decision to remove and replace the WV Tower 4 Segments is a constructive change to the Contract. The DRB determines that neither ODOT nor M/N properly addressed the structural necessity of removing and replacing the WV Tower 4 Segments by conducting the necessary investigation in the affected areas.

As a result of the foregoing, the DRB finds that M/N has established some limited entitlement to support its Tower Concrete Claim, but limits that entitlement to 25%. Accordingly, ODOT is relieved of 75% of the responsibility for the removal and replacement of the WV Tower 4 Segments.

Submitted this 10th day of March, 2006.

John J. Petro

John J. Petro Chairman

Barry Miller

Barry Miller Member

J. Paul Silvestri

J. Paul Silvestri Member