**DISPUTE REVIEW BOARD REPORTAND RECOMMENDATION**

 **SH 96 BRIDGES KIOWA, OTERO, & CROWLEY COUNTIES, CO**

 **CDOT PROJECT NO. FBR 096A-039**

 **DISPUTE 1A CONCERNING SURVEY ERROR QUANTUM**

**Hearing Date:** June 17, 2013

**Hearing Location:** CDOT Region 2 Office 1480Quail Lake Loop Colorado Springs, CO

**Hearing Attendees:** Tom Jackson – Structures, Inc. - President Shawn Horton – Structures, Inc. – Project Manager Ken Hawkins – S/I Parsons Brinkerhoff – Director of Engineering Karen Rowe – CDOT – Region 2 South Program Engineer Paul Westoff – CDOT – Resident Engineer Tom Bronniman – CDOT Project Engineer John Sabo – CDOT/AECOM – Highway Deputy Dept. Manager Beth Sprague – CDOT/Atkins – Scheduler Leo F. Milan, Jr. – CDOT – Sr. Assistant Attorney General

**Background:** On June 30, 2010, Structures, Inc. (Contractor) was awarded a Contract by CDOT for $2,908,694 for a Modified Design/Build Project for the replacement of four bridge structures on SH 96 in Kiowa, Otero, & Crowley Counties, Colorado. A Notice to Proceed was issued on August 18, 2010. The Contract was a Completion Date Contract with a completion date of May 27, 2011.

 The Project required the design and replacement of bridge structures and the associated earthwork and paving of approximately 100 feet for the approaches. The Contractor chose to use precast concrete boxes for the structures.

 The Contract included the Standard Specifications for Road and Bridge Construction dated 2005 and any Special Provisions for this Project and Revised Standard Specifications along with technical provisions for the Modified Design/Build features of the Project.

 When the Contractor began the layout work for the Project based on the design completed by its Consultant, Parsons Brinkerhoff (PB), it was discovered that the survey data that had been provided by CDOT was in error. This required a redesign of the Project which resulted in delay to the Project. CDOT has modified the Contract for the additional design and survey work but there is a disagreement on the length of the delay caused by the incorrect survey data furnished by CDOT.

**Joint Statement of Dispute:**

 CDOT provided survey data for the design of the project that contained inaccurate information. CDOT acknowledges responsibility for the resulting delay in the project. This dispute is concerning the length of the delay, the compensation for the delay and subsequent release of Liquidated Damages for such time extension warranted. CDOT has offered the contractor 40 days of compensable delay to the project as was determined from a CPM Baseline schedule review conducted by Atkins, a CDOT consultant. Structures, Inc. contends that the 40 days offered does not account for the total float consumed when the delay was completely out of Structures’ control and was based on information previously determined to be accurate. CDOT and Structures, Inc. request the DRB provide a recommendation as to the number of days the contract was delayed and the amount of compensation for those days based on a cost of extended overhead of $1,202/day as agreed to by both CDOT & Structures, Inc. as was determined from a CDOT conducted external audit.

**Pre-hearing Submittal:**

In addition to the Bid Plans and Specifications for the Project,both parties provided the DRB with Pre-hearing Submittals per Spec. Section 105.23(e) which included but were not limited to documentary evidence relevant to the issues, serial letters, e-mails, speed memos, daily logs, handwritten notes and schedules. Both parties provided the DRB with their lists of attendees. The Contractor also provided supplemental information at the start of the hearing that was discussed during the pre-hearing phone conference. The DRB allowed the use of any supplemental information that had been used in previous negotiations but did not allow the use of the resource loaded schedules since they had not previously been submitted to CDOT.

 The DRB pointed out that neither Party had complied with all the requirements of Spec. Sections 105.22 (d) and (e) in that the pre-hearing submittal documents were incomplete.

**Contractor Presentation on Schedule Impact and Delay:**

 The Contractor stated that its bid was low by $35,129 on a $2.9 million contract and was under the Engineer’s estimate by $534,793. Its bid was based on evaluation of time, materials, equipment and labor to complete the work. At bid time, it understood that work would be taking place at multiple locations concurrently, but that each bridge would be at different stages of construction. To minimize cost, flexibility to use resources was required.

 After award, the Contractor developed a Baseline Schedule based on the need for flexibility. The schedule contained float. CDOT does not have the right to consume the float for their convenience. CDOT created conditions that resulted in delay to the Project, compressed time, lost flexibility and stacking of work. Float, when considered a shared resource, does not equally account for sharing of risk.

The Contractor felt that CDOT’s schedule analysis was inaccurate for the following reasons:

1. The analysis does not allow time to review the revised plans, explore if there are any cost impacts, disseminate the information to all subcontractors and suppliers, procure/review shop drawings etc. The original Released for Construction (RFC) drawings based in the incorrect survey were prepared in 91 days. Since the plans had to be redone, it seems the same time should be allowed. CDOT’s analysis allows 77 days of delay based on the revised survey data provided by CDOT to the Contractor on 12/10/10 and the revised RFC plans completed by PB on 2/25/11.
2. Based on CDOT’s acceptance of the Schedule of Values and Method Statements it should be reasonable to assign the resources to the schedule for a fair comparison of how the float would have been allocated to level the resources. The leveling of resources changes the Substantial Completion Date to 5/2/11. Based on schedules with resources leveled, the Dispute 1A delay is from 6/8/11 to 7/28/11, a total of 50 days and not the 40 determined by Atkins. Atkins’ schedule analysis also does not account for the 14 days of review time for the Contractor and subs and suppliers to review the revised RFC plans.
3. Atkins’ analysis does not account for the Memorial Day, Independence Day and Labor Day holidays. Atkins does not give credit to the Contractor for producing float by accelerating the schedule.
4. The allocation of resources seems to be a fair assumption because the Baseline Schedule contained ample opportunity to level resources in the form of float.

By adding resources to the schedule, the holidays that could not be worked and the 14 days for review of the revised RFC plans, results in a substantial completion date of 8/15/11 which is 68 days later than the original date and not the 40 as determined by Atkins. When an issue delays a project, which is not the fault of either party, then the float may be considered a shared resource. In this Dispute this is not the case since CDOT was at fault by not providing accurate survey data and CDOT should not be allowed to use the float.

The Contractor has engaged in numerous meetings, emails, letters and on-site visits to resolve the problem but has not received cooperation from CDOT. The delay caused by CDOT should be considered nonexcusable delay by CDOT per Spec. Section 108.07(c)2. The Contractor has been actively trying to resolve the issue since 11/30/10 and has financed the remedies for 2.5 years. CDOT has also unfairly withheld LD’s and owes the Contractor $312,000.

**CDOT Presentation on Schedule Impact and Delay:**

 CDOT’s position is that float is co-owned and used on a first come first served basis. Float is not at the beginning of the Project. The Critical Path is the path that shows no float. The Contractor is the one who makes the schedule and could delay the start of work if there is float. CDOT has accepted the determination that the survey error caused delay and costs which have been addressed in a CMO issued to the Contractor. Beyond the delay included in the CMO, the remaining delays and costs were solely under the control of the Contractor. The stacking of work and acceleration referenced in the Contractor’s Position Paper was a decision made by the Contractor and not forced by CDOT.

 CDOT’s Consultant said that float ownership in legal terms is owned by the Owner, Contractor or Project. Total float belongs to the Project on a first used basis. In the Baseline Schedule, the float is in the activities and there was no Critical Path due to the seeding activity and its constraints. The Baseline Schedule shows an underestimate of time based on the Method Statements and production rates. Resource loading is not required by the Specs. The resourcing that has been added to the schedules is new information. Atkins’ analysis eliminated the constraint for seeding to arrive at a delay of 40 days.

 The Contractor says the free time at the beginning of the Project was used by CDOT. CDOT has argued that float is co-owned. Per the contract, the Contractor was to provide a CPM schedule that showed a Critical Path and a Critical Path is defined as the succession of activities with zero float. The Contract states in Spec. Section 108.03 that a CPM schedule shall be used, that the Critical Path is that path through the schedule which, if delayed, will cause a delay to project completion.  The Contract also states in section 108.08 (d) that delays that do not affect the final contract completion date will not be a basis for a change in the contract time and, by extension, if there is no change in contract time, there is no compensable delay.

 CDOT is not responsible for Contractor caused delays. Any free time or float that was available was either consumed by the Contractor at the beginning of the project or by poor management of the remaining work and contract time. CDOT’s analysis shows that the delay caused by the error in the survey data was 40 days.

**Contractor Rebuttal on Schedule Impact and Delay:**

 The Contractor disagreed with CDOT’s position because the Contractor did have to stack work and equipment. The seeding constraint was to show the total estimated time for the Project.

 Float does not belong to the party at fault in a delay. The incorrect survey data was under the control of CDOT.

 The Contractor leveled resources to capitalize on the resources. If the schedule showed no Critical Path, it should not have been accepted.

**CDOT Rebuttal on Schedule Impact and Delay:**

 By Spec., holidays should have been built into the schedule as well as the 14 days for review. Activity durations are the Contractor’s responsibility. The float is co-owned by the Project.

 CDOT has agreed to pay for 40 days of delay but the Contractor has refused to sign the MOD which is the Contractor’s business decision. The Contractor is due money but CDOT wanted to wait until all issues have been resolved to go to the Bridge Enterprise for the additional funds.

**Additional discussion on Schedule Impact and Delay:**

The Contractor stated that the three holidays in question were not on the Baseline Schedule as the completion date was prior to the holidays. The Contractor’s position on the 14 day review time was in the Spec. Schedule.

 The Contractor stated that the revised Released for Construction drawings were received on February 11, 2011 but CDOT’s schedule analysis gave no time for it to review the revisions along with its subs and suppliers to determine what the impact was.

**Notes:**

1. The DRB stated that the resource loaded schedules would not be considered since they had never been presented to CDOT in any of the negotiations or in the Baseline Schedule or updated schedules.
2. The DRB stated that the issue on payments from CDOT to the Contractor would not be discussed by the DRB since neither party had asked the DRB to consider payment issues.

**Questions by the DRB on Schedule Impact and Delay:**

1. **To CDOT:** What are the dates listed in Exhibit A, Project Special Provisions - Commencement and Completion of Work (Page 87)?

The bids were opened on June 24, 2010, the Contract awarded on June 30, 2010 and the Notice to Proceed given on July 28, 2010. (**NOTE:** The Pay Estimates show a Notice to Proceed Date of August 18, 2010.)

1. **To Contractor and CDOT:** Technical Requirements Section 2, Project Management –Work Breakdown Structure (Page 8) specifies the scheduling requirement items to be included in the schedule. Why were all the required items not included in the Baseline Schedule and was the schedule accepted by CDOT? Were monthly schedule project narratives and schedule updates submitted?

The Contractor said that the schedule was intended to cover the construction. Monthly updates were submitted.

CDOT stated they didn’t know if the schedule was rejected. They added, “It was accepted by non-rejection.”

1. **To Contractor:** The Contractor said that there were 14 days for review of the revised RFC plans by the Contractor. This is not listed in the Contractor’s pre-hearing submittal. Where is the review time shown in the schedule?

The Contractor stated it was not shown in the schedule.

1. **To CDOT:** CDOT stated there was no Critical Path shown on the Contractor’s schedule. For a delay to occur the activity must be on the Critical Path. If that is the case, then why did CDOT agree to pay 40 days for delay?

CDOT stated the survey delay was not on the Critical Path but that they had agreed to pay for the delay.

1. **To CDOT and Contractor:** What controlled the time for the seeding as shown in the Baseline Schedule?

CDOT said the Specs. control seeding times based on the ground not being frozen.

**Summation Statement by Contractor on Schedule Impact and Delay:**

The Contractor’s position is that a party at fault has no right to use the float. The Contractor stated that it did not increase the activity lengths in the revised schedule. It proposed alternate materials to save CDOT money but did not request V.E.’s.

 The Contractor said it was entitled to the increased costs of the work, which includes the delay costs and a time extension.

**Summation Statement by CDOT on Schedule Impact and Delay:**

CDOT admitted responsibility for the delay caused by the incorrect survey data and acknowledged 40 days of delay at the agreed $1,202 per day. Additional design and survey costs have been included in the MOD.

 CDOT stated that both parties have not been timely in reaching a settlement. What CDOT has offered the Contractor is fair.

**Quantum Presentations on Schedule Impact and Delay Costs:**

Both Parties agreed to the CDOT Audit costs of $1,202 to be applied to any delay time decided by the DRB.

**Findings:**

1. TECHNICAL REQUIREMENTS SECTION 2 – PROJECT MANAGEMENT requires the Contractor to submit a CPM schedule that includes at a minimum all of the *Salient Design and Construction Components.* The salient features were to be broken down into enough subcomponents to accurately track production on the project. The schedule was also to be cost loaded. The Baseline Schedule submitted by the Contractor did not meet these requirements in that the schedule contained no design activities, did not indicate a Critical Path and was not cost loaded. This section also requires the submission of Methods Statements. Nothing was provided in the Contractor’s pre-hearing submittal or at the hearing that indicated this requirement was met.
2. TECHNICAL REQUIREMENTS SECTION 2 – PROJECT MANAGEMENT requires the *acceptance* of the Initial Schedule by the CDOT Project Engineer. During the hearing, CDOT acknowledged this had not been done.
3. TECHNICAL REQUIREMENTS SECTION 2 – PROJECT MANAGEMENT in the Invoice Documents section requires the Contractor to submit Updated Monthly Progress Schedules. In addition, a Progress Schedule Narrative is also required. Although the Contractor did submit some updates, they were not done on a monthly basis as required and did not show delay activities or added activities.
4. The updating requirements in Finding 3 above, requires the CDOT Project Engineer to review and approve the monthly updates. The section also states, *No invoices shall be approved nor payment made if there is not a current accepted Monthly Progress Schedule in place.* Again, CDOT did not follow these requirements.
5. TECHNICAL REQUIREMENTS SECTION 3 – QUALITY MANAGEMENT under Project Development states, *The Contractor shall develop a project design schedule which satisfies the requirements of the project and identifies tasks to be accomplished by the Contractor and sub-contractors.* Nothing was provided in the Contractor’s pre-hearing submittal or at the hearing that indicated this requirement was met.
6. TECHNICAL REQUIREMENTS SECTION 3 – QUALITY MANAGEMENT under Project Development also states, *The design schedule shall be accepted by the CDOT Project Engineer prior to starting the work.* Nothing was provided in either party’s pre-hearing submittal or at the hearing that indicated this requirement was met.
7. Spec. Section 108.07(d)4 requires the Contractor to submit with its time extension request *a schedule* *revision as defined in subsection 108.03*. The Contractor failed to comply with this requirement.

1. CDOT acknowledged that the initial survey that was provided to the Contractor was incorrect and subsequently provided corrected data to the Contractor. This caused a delay while the design plans were corrected to reflect the correct survey data.
2. The Schedule Update of 12/25/10 indicates that the Contractor delayed the start of the Work at Site 1, Install Erosion Control, from 10/11/10 to 10/22/10 (11 calendar days). No explanation was given for the delay and no delay activity is shown on the schedule.
3. The Schedule Update of 2/28/11, which was submitted by the Contractor after the revised Released for Construction plans were issued, shows a Substantial Completion Date of 6/17/11. The schedule analysis performed by Atkins that considered the delay shows a Substantial Completion Date of 6/15/11.
4. Spec. Section 212.03, Seeding Seasons in Areas under 6,000’ requires the seeding to be done after spring thaw which is defined as *the earliest date in a new calendar year in which seed can be buried ½ inch into the surface soil (topsoil) thru normal drill seeding methods.* In the southeastern portion of Colorado, this could easily be April 1. Accordingly, the Contractor could have begun seeding in early April and was not constrained to start seeding after May 2 if the other work required to start seeding was complete.
5. The Baseline Schedule without Constraints that was prepared by Atkins shows a Critical Path and a Substantial Completion date, including seeding, of 4/6/11 which does not conflict with Spec. requirements as discussed in Finding 11 above. Accordingly, it is felt the completion date used by Atkins in its schedule analysis should have been 4/6/11 “But for “the delay caused by the erroneous survey data, the Contractor’s schedule appears reasonable. With the exception of some extended activity durations shown in the as-built schedule dated 10/21/11 which were not explained in the pre-hearing submittals or at the hearing, the Contractor’s actual durations were close to the Baseline Schedule durations. Some of the extended durations shown in the as-built schedule, like paving and striping, make no sense and are probably due to intermittent operations over a longer period of time rather than actual periods of work which should have been shown as separate activities in the schedule updates.
6. Adding the initial start of construction delay by the Contractor of 11 days covered in Finding 9 above to the Baseline Schedule Substantial Completion date of 4/6/11covered in Finding 12 above, results in a revised Substantial completion date of 4/17/11. Comparing this revised date of 4/17/11 to the Substantial Completion date of 6/17/11 based on the revised schedules covered in Finding 10 above, shows a 61 day delay to the Substantial Completion Date. Therefore, the delay is considered excusable and compensable. In addition, the delay resulted in the Memorial Day holiday now being in the work period. Since the Contractor could not work on the holiday, one additional day of delay should be added to the 61 days, resulting in 62 days of delay.

**Recommendations:**

1. Based on the above Findings, it is clear that a Critical Path Schedule, including the design activities, was never submitted and approved nor were Monthly Updates submitted and approved each month as required by the Contract. Accordingly, it makes it impossible to perform an accurate delay analysis. **Therefore, using the rationale in Findings 12 and 13 above, it is recommended that 62 calendar days be added to the initial Contract Completion date of May 27, 2011 which results in a revised Contract Completion date of July 28, 2011.**
2. Based on the CDOT Audit, the parties had agreed to a daily extended jobsite overhead rate of $1,202.42 per day. **Accordingly, it is recommended that the Contractor be compensated for 62 days of delay at $1,202.42 per day resulting in a Contract increase of $74,550.04**.

Respectfully submitted, this 23rd day of July 2013.

Dispute Review Board



Henry J. Nave

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JohnL. Tracy

 W. H. Hinton II