**DISPUTE REVIEW BOARD REPORT**

 **AND RECOMMENDATION**

 **US 160 AT S. BROADWAY – CORTEZ, CO**

 **MONTEZUMA COUNTY, CO**

 **CDOT PROJECT NO. STA NH 1601-062**

 **DISPUTE CONCERNING DIFFERING SITE CONDITION**

**Hearing Date:** April 3-4, 2014

**Hearing Location:** CDOT Region 1 Office

 18500 East Colfax Avenue

 Aurora, CO

**Hearing Attendees:** Ken Lawson - Lawson Construction Co - President

 Jim Sampson - Lawson Construction Co. - Project Manager

 Brian Erickson - Lawson Construction Co. - Project Manager

 Kirk Speer - Lawson Construction Co. - Project Engineer

 Mark Straub - CDOT HQ - Area Engineer

 Mike Coggins - CDOT - Resident Engineer

 Craig Glazier - CDOT - Consultant Project Engineer (HDR)

 Bruce Tonilas - CDOT - Schedule Reviewer (HDR)

 Ryan Sullivan - CDOT – Assistant Project Engineer

**Background:**

Lawson Construction Company (Contractor) was awarded a contractby CDOT for $4,771,589.45to reconstruct Highway US 160 at South Broadway in Cortez, CO. The Project was approximately one mile long and consisted of removing the existing asphalt pavement and base course, reconditioning the subgrade, and the installing a 9” concrete pavement. There was associated drainage, utility, electrical, traffic signal and striping work. The Notice to Proceed was issued on June 20, 2012 with a completion date of December 15, 2012. Final Acceptance occurred on May 2, 2013.

Section 7 of the Contract incorporates the Plans, the Standard Specifications for Road and Bridge Construction dated 2011 and any Special Provisions for this Project and Revised Standard Specifications.

The Contractor discovered that the existing subgrade material seen in the utility excavation at 7th Street was not the material that was shown in the boring logs included in the bid documents, Plan Sheets 58 – 69. The material shown on the boring logs was Class 6 and Class 2 material which per CDOT Table 703-3 (Classification for Aggregate Base Course) in the CDOT Standard Specifications is a 3” minus material. The Contractor brought this to CDOT’s attention as soon as it was discovered. This same differing site condition existed to some extent throughout the entire Project.

CDOT agreed there was merit for the changed condition concerning the subgrade. The Contractor submitted a Revised Request for Equitable Adjustment for costs and time on April 2, 2013. The CDOT Project Engineer in a letter dated May 17, 2013 took exception to the costs and backup submitted by the Contractor and offered a settlement which was paid to the Contractor in the next Pay Estimate. Letters and meetings on the REA continued with no settlement reached. In their letter dated December 6, 2013, the Contractor requested the initiation of the DRB process per Spec Section 105.23.

**Joint Statement of Dispute:**

CDOT and Lawson Construction **agree** on the following facts regarding the project:

The cobblestone laden subgrade found underneath the existing asphalt pavement throughout the project work limits was a differing site condition.

The permanent pavement markings could not have been completed prior to the original completion date of December 15, 2012 due to the manufacturer recommendations and CDOT specifications regarding moisture and temperature requirements.

Due to a redesign of the signal mast arm at the intersection of US 160/491, this mast arm could not be installed until after the original completion date of December 15, 2012.

The project was not completed by the original contract completion date of December 15, 2012.

CDOT and Lawson Construction Company **disagree** on the following:

The $292,146.60 that CDOT has paid Lawson Construction Company for having to utilize a different and slower method to process the cobblestone laden subgrade is equitable and adequate compensation.

Lawson Construction Company should be paid their requested amount of 163,285.65 for costs incurred to other bid items for delays Lawson Construction feels were caused by CDOT.

The 28 Additional working days CDOT granted Lawson Construction, along with time not being charged on days when extra work was completed beyond the original completion date, is a fair amount of additional time for CDOT caused delays.

Upon analysis of the as-planned versus as-constructed schedule, it was determined that the schedule impacts resulting from the differing site condition (Cobblestone Subgrade) did not significantly impact the critical path. The most significant schedule impacts occurred prior to the discovery of the cobblestone subgrade throughout the project work limits.

Lawson Construction was working on other projects which impacted their ability to mobilize and begin work on this project late in June and early July when the weather was advantageous to meet the milestone and contract requirements.

CDOT assessing $82,617.25 in Liquidated Damages /Traffic Control costs to Lawson Construction Company for the 14 days the project was in penalty.

**Pre-hearing Submittal:**

In addition to partial Plans and Specifications for the Project,both parties provided the DRB with Pre-hearing Submittals per Spec. 105.23(e) which included, but were not limited to, documentary evidence relevant to the issues, letters, emails, speed memos and handwritten notes. Both parties provided the DRB with their lists of attendees. At the hearing, CDOT provided Plan Sheets No. 76 to 86 marked up to show the paving dates. The Contractor also brought aerial photos and a chart showing paving productivity.

**Hearing:**

The hearing was conducted in three parts:

 Costs related to the differing site condition

 Schedule impact due to the differing site condition

 Associated costs due to the differing site condition

**COSTS RELATED TO THE DIFFERING SITE CONDITION**

**Contractor Presentation on Costs Related to the Differing Site Condition:**

The Contractor said its method of subgrade excavating at bid time was to remove the old asphalt and then excavate the subgrade by trimming directly into dump trucks with a Gomaco 9500 trimmer. This was attempted but did not work due to the size of the cobbles encountered in the existing subgrade. The existing material turned out to contain material from 6” to 18” minus not 3” minus as shown on the bid documents. The trimmer sustained substantial damage.

The Contractor then tried ripping the subgrade with a Cat 14H grader but the 100,000 grader just slid over the large cobbles. Then Contractor then brought in a Cat 320 excavator do dig out the cobbles.

After discussions between the Contractor and CDOT, CDOT issued Speed memo #44 which changed the concrete from 9” to a minimum of 7” with 8” placed where possible. The goal was to disturb as little of the cobblestone layer as possible. The transverse concrete joints were changed from 15 feet to 12 feet and a new concrete paving unit price of $44/SY was agreed to. CMO #2 was issued on October 19, 2012 incorporating the change into the Contract.

The Contractor said the change in site condition was a cardinal change that governed the subgrade work on the entire project and slowed all the work down. This also caused a loss of momentum and resulted in the paving operation being very inefficient. In order to protect the subgrade, they paved when they could even though some areas were small. The subgrade also resulted in difficulties in driving the basket pins into the subgrade.

The contractor said CDOT said all rocks which would result in point loading on the concrete had to be removed. The existing curb and gutter was to remain which also caused problems in the removal of the cobbles if they extended under the gutter. Because of the cobble removal, the Contractor said it had to go to full width on the subgrade prep so it would not damage any of the new concrete pavement while removing the cobbles. They were also working in a confined area with high speed traffic that was head-to-head. All of this resulted in the increased costs of $542,993.48 which they have requested from CDOT.

**CDOT Presentation on Costs Related to the Differing Site Condition:**

CDOT acknowledged there was a changed condition and revised the pavement sections as shown in their Pre-hearing Submittal, Attachment 16. The 14H grader was used minimally but was able to get the subgrade to the correct elevation in some areas. Speed Memo #44 agreed to pay the Contractor the Original Plan Quantities for the Unclassified Excavation, plus one added inch due to the reduced concrete depth, and Reconditioning to compensate the Contractor for the cross hauling and the reworking of the subgrade material. CDOT proceeded in good faith in issuing the Speed Memo and never expected a $500,000 change request from the Contractor. If this would have been known at the time, CDOT would have used Force Account.

The Contractor’s first REA dated February 6, 2013 for $411,364.93 had no breakdown of costs. At a meeting to discuss the REA, CDOT requested the costs be broken down by day. On April 2, 2013, the Contractor submitted a revised REA for $542,993.48 where the labor and equipment hours went up substantially from the initial REA. CDOT has daily diaries that show what was being done and does not agree the costs shown by the Contractor all relate to the changed condition. CDOT agrees there were added costs but every cost on the job was not due to the cobbles. An example is the excavator which was doing other work on the Project and was not only used for the subgrade. On 11/10/12 the skid steer and Otoniel (?) were working with the paver at 7th Street.

CDOT said they compared the hours submitted by the Contractor with their diaries. This might not be 100% correct. If the diaries were lacking or if there was a difference, CDOT gave the Contractor the benefit of the doubt. The added costs were added by increasing the quantities for the Unit Price payments. Some trucks included by the Contractor were used for other work such as hauling the Class 6. The same was true for trucks used to haul concrete. The trimmer was used from 7th Street south to the end of the project. The size of the cobbles varied greatly.

The costs that the Contractor submitted in the REA included every cost rather than the added cost for the cobbles. CDOT came up with the total added costs and hours of equipment as shown

on Page 4 of their Pre-hearing submittal. This is heavy as the excavator was also used for muck excavation which was paid for in CDOT’s analysis. CDOT also used the Bid Unit Prices for equipment where they had them which were more than the operated equipment costs submitted by the Contractor. This amounts to about $25,700 more than if the Contractor’s prices were used.

CDOT said based on Spec 102.05 - Examination of Plans, Specifications, Special Provisions, and Site of work, CDOT could have said there was no merit in the Contractor’s request. CDOT also said the Contractor also said that the 12 foot transverse concrete joint spacing and difficulty in driving the basket pins slowed the production. The Contractor should have included this in the revised paving unit price that was a part of CMO #2.

**Contractor and CDOT Rebuttal/Discussions:**

The Contractor said there should be no discussion of Spec 102.05 since CDOT already said there was merit.

The Contractor said it was difficult to analyze where people were. The work side was jammed with equipment and the traffic side was plugged with traffic. There was a parabolic crown of 6 to 6 ½ inches.

 The picture CDOT showed of the blade moving base was not real in that they had cobbles everywhere. CDOT said that the picture was in front of the paver.

The Contractor said it had not seen the CDOT daily reports. (There was some discussion on this since CDOT had offered in a pre-hearing email to provide the reports electronically since there were more than 700 pages. CDOT also included their equipment review in Attachments 6 and 7 of their Pre-hearing submittal.) CDOT’s methodology for using their daily reports was outlined in CDOT’s letter to the Contractor dated May 17, 2013 and the Contractor never asked CDOT for the daily reports.

The Contractor said the added costs in the revised REA resulted from looking deeper into their records and that its costs were for the subgrade work if they were not paving.

CDOT emphasized that the equipment costs shown on Page 4 of their Pre-hearing Submittal were based on their records and that equipment time shown in the Contractor’s REA included equipment that was being used for other work like curb and gutter removal and muck excavation. The CDOT records were kept by three engineers and two inspectors. The Contractor has never submitted daily records that show when they did subgrade work.

The Contractor went over their time card procedures and said the men had to record their time and the equipment that they used. The men are cautious on this recording because it determines how they are paid. The Contractor also must provide certified payrolls per the Fed’s 1273.

CDOT agreed that men were on the job but disagreed with where the costs were charged. The skid steer was used some of the time to build the business access ramps but was included in the costs the Contractor used for preparing its REA for the changed condition. The Form 10’s prepared by the Contractor show the hours but not what was done. Another example is the water truck being included in the costs when it was only used in the Class 6 work. (The Contractor said the Class 6 work was a separate cost code.)

CDOT said they tried to separate out the men and equipment that were working on other work and that if the DRB needs more information, they will provide it if it would help. Everything was not CDOT’s fault. CMO #2 was to cover the costs for the changed concrete paving and the Contractor should have taken all the costs into consideration when it submitted its Unit Price for CMO #2.

The Contractor said its paving production was reduced by half. This resulted in the concrete plant being on standby which the Contractor has not charged for. Its best paving day was 500 CY and it only averaged 250 CY. Other equipment had to be on the job but could not be used efficiently which the Contractor did not charge for. The Contractor passed out the Pink Sheet showing their lost production. (CDOT reference Attachment 8 to their Pre-hearing Submittal which shows the as-built schedule days for paving.)

The Contractor said it had reviewed the time that was not applicable in their REA and would deduct $52,107.94 for labor and equipment used before September 29, 2012 (CDOT Attachment 4) and $20,395.26 for Class 6. This results in a revised REA amount from the Contractor of $178,343.68. This had not been discussed with CDOT before the hearing.

The Contractor said some costs could have been missed by CDOT. CDOT replied that the method they used was the only method they had to make an evaluation and if there was any question, they gave the benefit of the doubt to the Contractor.

**Questions by the DRB on the Differing Site Condition:**

1. To Contractor: What costs codes were used in the REA?

 Codes 100102 (Project Management), 203000 (Excavation), 203002 (Blading), 203010 (Muck Ex), 203016 (Subgrade Prep) and 203500 (Trim Subgrade) - Hours were included to 3/29/13.

2. To Both: Were cobblestone areas documented?

 The Contractor said that there was cobblestone throughout the Project. CDOT said not all areas were documented.

3. To Both: Were the Escrow Bid Documents reviewed? What is the Escrow listing in the Contractor’s submittal?

 Both said the Escrow Bid Documents have never been opened. The Contractor said the Escrow list in its submittal was for schedule durations.

4. To Both: How was the sawing and sealing paid?

 Both said it was in the unit price for the concrete paving in CMO #2.

**SCHEDULE IMPACT DUE TO THE DIFFERING SITE CONDITION**

CDOT explained that based on discussions with the City of Cortez, the City allowed 24/7 work if the Project could be completed in one construction season. This resulted in the December 15, 2012 Contract Completion date.

**Contractor Presentation on Schedule Related to the Differing Site Condition:**

The Contractor said the Milestone 1 schedule issues are no longer part of the dispute. It wants to look at the schedule and how it relates to the Liquidated Damages and non-payment of Traffic Control.

On September 14, 2012 CDOT changed the size of the traffic signal mast arm which required new shop drawings that were eventually approved October 11, 2012 with an expected delivery date of approximately 21 weeks which would be in March 2013. The mast arm actually arrived in February 2013 and was then installed.

In addition to the mast arm problem, at about this same time, the Traffic Striping Subcontractor had discussions with the manufacturer of the striping material who stated they do not recommend installing this type of permanent pavement markings after November 1 or before April 1 in Colorado due to temperatures and moisture. CDOT then decided that Lawson Construction should install the pavement markings in April 2013 when the weather was suitable.

Therefore, due to both the mast arm revision and the constraints on the striping there was no way that the Contractor could complete this project within the Original Contract Completion Date of December 15, 2012 and the Project would not be completed until the spring of 2013.

The Contractor said it bid one project but ended up building another one due to the subgrade problems and the way it had to pave. CDOT’s Attachment 10 to its Pre-hearing Submittal covers the 28 days of added time and how CDOT charged the Working Days. There was both Contract work and extra work that was performed after December 2012. The Contractor said it could have performed the remaining work concurrently with the traffic light installation and the final striping but CDOT directed the Contractor to do some work in February 2013.

The Contract began as a Completion Date Contract but was changed to a Working Day Contract by CDOT. CDOT did not apply the time correctly per Spec 101.93 where miscellaneous work was done. The Contractor had agreed to come back in the spring and complete the work when the weather was good. They ended chewing up time with partial crews to do miscellaneous work rather than doing all the remaining work concurrently.

The Contractor said that CDOT could have suspended the time and come up with a new completion date. If CDOT would have applied Working Days properly, there would be no Liquidated Damages (LD’s). If CDOT had not required the winter work in February and the remaining work could have been done concurrently, there would be no LD’s.

The subgrade problem caused delays and pushed concrete work into the winter. This is compensable delay. It had to then come back and work during the winter with limited crews. At the same time, it was waiting for the signal pole that had been changed by CDOT. The project could not have been completed until the striping was done and the manufacturer recommended no work until April.

**CDOT Presentation on Schedule Related to the Differing Site Condition:**

CDOT said it was trying to mitigate the impact to the Contractor by going to Working Days. The mast arm change and the striping being done in the spring did not extend the time for completing the other work. On December 15, 2015, there was a lot of Contract work remaining. Other than for the safety critical work, CDOT did not instruct the Contractor on when the work was to be done. CDOT went out of its way not to charge time. CDOT tried to give time to help the Contractor as shown in CDOT Pre-hearing Submittal Attachment 9.

When the mainline work started on September 29, 2012, the Contractor was already 42 days behind schedule. The cobblestone issue then arose when the subgrade prep for the mainline began. Attachment 8 covers the paving work and is depicted on the marked-up Plan sheets showing paving dates and the area paved. The Contractor never met its planned paving production and there is question whether the planned production was achievable. By the Utilities Provision, the Contractor should have anticipated some delay due to utilities. CDOT’s schedule analysis gave some time for utility delay which CDOT was not required to do. The final striping work took twice as long as shown on the Contractor’s schedule.

The 42 days lost by Milestone 1occurred in June, July and August of 2012 due to lack of performance by the Contractor and not because of the later cobblestone problem. Whether directed or not, the safety critical work is to be performed by the Contractor. The street lights not working was the source of numerous complaints from the public, especially in the dark months of winter. Arrow Electric was off the job from November 20 to December 10, 2012.

CDOT felt it was fair to go to Working Days. CDOT did not force the Contractor to work except for safety critical items. The original schedule showed paving from mid-November to mid-December. The weather in March 2013 was much nicer than the weather in November 2012. There was no reason the caisson work for the signals could not have been done in 2012.

**Contractor Rebuttal:**

The Contractor said they did not question CDOT’s fairness. They assumed the treatment of the cobbles was OK but that they should have gotten more time and LD’s are another question. Per Spec 108.08, CDOT should have negotiated a new completion date and not unilaterally chosen the Working Day method. The subgrade delay was an excusable delay.

The Contractor said the reason there are so many days of paving shown on CDOT’s record of paving on the Plan Sheets is that they could not get a lot of subgrade ready due the cobbles and they wanted to keep the subgrade paved as soon as possible to protect it. CDOT was not impacted by the added time but is responsible for the added costs. CDOT could have suspended time and waited until spring when the striping and mast arm could be completed.

The Contractor discussed their pink sheet on paving production versus what they bid. In some cases they worked overtime and weekends. But for the cobble problem, they would have been done on time except for the mast arm and the striping. The Utilities Provision calls out 50 days of utility work which would not meet the Milestone 1 completion date and Spec Special on Page 65 said they would be paid for the utility work per 108.08. If the mast arm and striping could not be done until spring, why didn’t CDOT change the time for the changes CDOT required? The Contract could not be completed until the striping was complete which means that there was concurrent delay.

The Contractor said it had men and equipment on site that sat idle while waiting for decisions. They could have completed the work in 28 Working Days if they were not charged for partial days and days where they could not be efficient. The piecemeal approach was not an efficient use of their time. They had a meeting February 7, 2013 in Durango where they said they would finish the work in March or April.

If CDOT would have followed the Spec for time application, there would be no LD’s. The concrete crew worked on subgrade prep to keep the job going. The concrete tickets show the time when the paving was being done.

**CDOT Rebuttal:**

CDOT questioned the info show on the pink sheet. What happens to the schedule when the crews are gone? The Contractor’s Method Statement said they planned to place 250 SY per hour. Twelve hour days in the summer are not the same as twelve hour days in the winter. The Contractor had inefficiencies and the Escrow Documents reflected 10 hour days.

CDOT questioned how Arrow Electric impacted the work when the Contractor had to wait for conduit that was under the paving or by not having personnel on the job some days. (The Contractor said they never held up paving because they moved to another location if Arrow had not completed their work.) The lights were wired wrong when they first tried them.

CDOT requested a Method Statement from the Contractor on how to mitigate the impact from the cobble work but never received one.

**Questions by the DRB on Schedule:**

1. To CDOT: Why did CDOT use the Working Day approach rather than follow Spec 108.08(b) for a Completion Date Contract?

 CDOT said it made the decision based on the time of year (winter) and the holiday season which decreased the Contractor’s exposure.

2. To Contractor: Were schedules submitted per Spec 108.08(d)4 reflecting delays?

 The Contractor said no. The completion was delayed until spring for striping and the schedule updates showed impacts.

3. To CDOT: Why did it take until October 2102 for the Baseline Schedule to be approved?

 CDOT said there were missing activities and logic problems, all of which are documented in Speed Memos.

4. To CDOT: What was the concrete rework due to design error and was there schedule impact?

 CDOT said it was CDOT’s problem and the work was done March 3-16, 2013 while Contract work was also being done. No time was charge for these days.

5. To CDOT: Did the mast arm or striping work delay any other work?

 CDOT said no.

6. To CDOT: What days granted by CDOT were on the Critical Path?

 CDOT said an impact schedule was never submitted by the Contractor. The as-built Schedule reflects the actual progress. Of the 28 delay days shown on Item 1 of CDOT delays from June 20 to September 29, 2012, the only item on the Critical path was the City of Cortez drainage work which was not shown on the Original Baseline Schedule.

**ASSOCIATED COSTS DUE TO THE DIFFERING SITE CONDITION**

**Contractor Presentation on Associated Costs Due to the Differing Site Condition:**

In addition to the costs due to the cobble problem, there were additional costs to complete the work in the spring and more overhead costs due to the added time. Some curb work, some rework and some Class 6 were pushed into the winter. In some cases, crews were not available which resulted in inefficient and out-of-sequence work that was dictated by weather. They had to mob and remob in the spring and there were additional overhead and motel costs. Work was done in the winter in February and March.

The Contractor looked at its costs and offered a credit at the hearing of $54,705 for Unit Price work that was paid by CDOT. Their total for Associated Costs is now reduced to $ $108,580. All of their costs and their analysis are in the Pre-hearing Submittal book.

**CDOT Presentation on Associated Costs Due to the Differing Site Condition:**

CDOT requested a detailed breakdown of all the costs in the Contractor’s REA. Some of the costs included work that CDOT had already paid for. The Contractor threw in all his costs even if they were paid for otherwise. The Bid prices should have been enough to pay for the work. The 3/29/13 REA included labor and equipment used for Contract work, as well as, extra work.

The Contractor also wants the added cost for all concrete bought from a supplier. They then added 16%.

The Contractor had to come back in February for some safety critical work and then came back in March to complete the work. The weather in March 2013 was much better than the weather in December 2012. The Contractor has requested eight weeks of overhead and per diem for the cobble impact and another four weeks for work in the spring. CDOT has asked the Contractor for backup for their costs but has never received them. The Contractor included costs for the removal and replacement of curb and gutter and the damaged paving panels in the costs which is work the Contractor was responsible for.

**Contractor and CDOT Rebuttal/Discussions:**

The Contractor said they had to spend 12 more weeks on the Project due to the delays and inefficiencies caused by the cobble problem. Their original schedule showed completing on time. They also showed delays on their schedule updates but were tied to a deadline. CDOT would not accept a schedule with a late completion date.

The as-built schedule shows they went from 5 to 15 days per phase for the unclassified excavation. The same applies to the reconditioning. Each schedule had notes which are not shown on the schedules they provided in the Pre-hearing submittal. (CDOT said they always responded to the notes in their review and the notes are in the files.)

The Contractor said CDOT insisted the Contractor meet the dates in the Contract. In some cases this was shown by shorter durations in the schedules but they went to overtime and weekend work to get done. They could have finished early without the cobble problem and CDOT added work which took time to do.

CDOT said it will not approve a Baseline Schedule that does not show finishing on time. The Contractor was 42 days behind for Milestone 1. CDOT asked for a Method Statement for the recovery schedule but never received one.

The Contractor said CDOT approved the revised schedule after the completion of Milestone 1 which was 42 days behind schedule. The revised schedule required more work in shorter time. The cobble problem had to be overcome before they could pave and they paved every day they could even though some of the paving areas were smaller than planned.

CDOT has the plant tickets for concrete. On September 7, 2012 they placed 297 CY and 341.5 on October 13. On October 2 they placed 500+ CY and 594 Cy on October 26 which shows they could reach their planned performance if they had the area. The CDOT diagram of paving shows good days and bad days. They had a concrete plant and paving crew of 35 men. On only 6 of the 49 paving days were they able to pave for more than 8 hours. On 11 of the 49 paving days they were able to pave for less than 4 hours.

The Contractor said that due to the inefficiencies caused by the cobble problem, the 18 items of work listed in CDOT’s January 4, 2013 letter could not be completed until the spring of 2013.

Their original plan was to use two different paving machines and hand placing for the concrete paving that was shown on their paving plan and phasing plan. Their concrete plant can produce 200 CY per hour and their estimate was based on placing 600 CY per day. They never attained this production.

CDOT said the Contractor used the same crew to prep and pave. They asked what records the Contractor had to show what affected the low production and where they were delayed. CDOT had anticipated paving in August but the first paving on Phase 1 was done on October 13, 2012. Paving late in the year can be done but requires heat and the days are shorter.

**Questions by the DRB on Associated Costs:**

1. To Contractor: What is the breakdown for the $54,000 credit?

 Remove and replace curb and gutter and extra work by Unit Prices. There is no repair or punch list work. CDOT said there was some more work that needs to be credited that was included on Pay Estimate 7 and subsequently agreed to by the Contractor totaling $15,795.40.

2. To Contractor: What are the paving plan and the phasing plan?

 There was no plan laying out the paving like on the as-built provided by CDOT. There was a plan showing the joint plan and the proposed progress was in the schedule.

3. To CDOT: Did CDOT reject any update schedules that showed a late completion?

 No update schedules were rejected that showed a late completion. Any schedule that was rejected was documented with a Speed Memo.

4. To Both: What and where is the Original Baseline Schedule?

 After some discussion, CDOT provided a copy of the original Baseline Schedule marked “Initial Schedule” which was submitted to CDOT prior to the pre-construction conference.

5. To Contractor: Where are the delays shown on the schedule?

 The update schedule dated 10/8/12 shows the delays and was the “Recovery” schedule.

6. To Both: Were records kept on a daily basis recording the cobblestone impacts?

 Both said no. The Contractor said there was no subgrade that did not have cobbles. The difference was how the cobbles were removed.

7. To CDOT: What work that was done in the spring of 2014 could have been done before the December shutdown?

 New curb and gutter and median noses

 Install remaining electrical conduit

 Pull wire and electrify all street lights

 Erect monotube cantilevered overhead sign structure

 Construct new pedestrian ramps

 Install new pedestrian sign posts

 Place concrete pavement at Keesee Motors

 Place soil retention blanket at Johnson Building

 Install audible pedestrian buttons at the 7th Street intersection

8. To Both: Who created the Form 10’s that were in the Contractor’s Pre-hearing Submittal?

 The Contractor said they prepared the Form 10’s using their cost records.

9. To Contractor: What makes up the 49 days of paving and when did weekend work start?

 The 49 days start with the mainline paving on October 13, 2012 and go until the paving on December 17, 2012. Weekend work began on Saturday, August 4, 2012 as shown on the 8/30/13 as-built schedule. (Both agreed that the 8/30/13 schedule reflected the as- built record.)

**Summary Statement by Contractor:**

The Contractor said it was improper to evaluate the job based on the schedule. You need to understand the job gets built in the field and not on paper. The superintendent decides what is needed to get the job built based on constraints. There was 60 mile per hour traffic next to the lanes where they were working. Their plan was to do the inside lane first but this changed. The inlet at 7th Street could have waited as this area had never drained properly. CDOT should have helped move forward since school was to start. Once the mainline work was started there was no other place for the traffic to go. They presented a paving plan and how they were going to meet the schedule. Then they hit the cobbles. There was over $10,000 in damages on the trimmer caused by the subgrade. They then brought in the Cat 14H grader and the Cat 320 excavator which they had not planned to use.

 They wanted to move job forward and helped CDOT determine how to proceed. It took CDOT 10 days to make the change in pavement thickness. This was a cardinal change. The job went from simple to difficult. They had the horsepower to do the work. The problem was not their fault. They had other work and had to do the Project with the crews that were provided to the job. CDOT knew how they intended to do the work when they started.

The reality is CDOT got a savings with their bid. They want the added costs paid by CDOT that are due to the delays caused by the subgrade problem.

**Summary Statement by CDOT:**

The documents show how CDOT worked with the Contractor. The Contractor did not start the job as they planned in their initial schedule. How could the inlet not be installed if it was at the low spot on the Project? Where would the water go? CDOT did not slow the job down or dictate people. CMO #2 was agreed to and costs for the paving and all related costs should have been included in the price the Contractor gave CDOT.

CDOT tried to be fair in compensating the Contractor based on what their records showed. Their analysis, based on the as-built paving layout, showed no impact to the paving. The Contractor’s planned production rate was high considering the constraints, traffic and areas that had to be left open.

CDOT explained what they feel they could justify and were fair throughout the job. They asked for information from the Contractor to justify its costs but never received it. The 28days of extended time were the best CDOT could come up with and they provided details to the Contractor which have never been addressed by the Contractor.

There is a big difference between an August day and an October/November day. The Contractor never provided a time impact analysis. There is not a big change in the time as planned versus the actual time. CDOT placed staff on the job based on the Contractor’s initial plan to start paving in August. Early in the job there was very little going on.

The Contractor claims a cardinal change. The specs say the contractor can do his own investigation. CDOT did its due diligence on the Plans. Where there were Plan errors, CDOT tried to mitigate. CDOT is proud of the final results and admits there was extra effort by both the Contractor and CDOT. Cortez is happy with the final job.

**COSTS RELATED TO THE DIFFERING SITE CONDITION**

**Findings:**

1. CDOT agreed there was merit on the differing site condition. The Contractor claimed the differing site condition was a cardinal change.

2. Spec 104.02(c) Significant Changes in the Character of Work, states:

 *The term “significant change” shall be construed to apply only to the following circumstances:*

 *(1) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction.*

Spec 104.02(c) also states:

 *If the alterations or changes in quantities significantly change the character of the work under the Contract, whether such alterations or changes are in themselves significant changes to the character of the work, or by affecting other work cause such other work to become significantly different in character, an adjustment, excluding loss of anticipated profit, will be made to the Contract.* ***The basis for the adjustment shall be agreed upon prior to the performance of the work.*** ***If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable***(emphasis added).

3. Reference to Spec 102.05 by CDOT is not appropriate. Regardless of what the spec says, the courts, in general, have held that contractors can rely on testing performed by the owner when the results of such tests are made available to bidders. In addition, the Spearin Doctrine of implied warranty of the construction documents held that the owner by offering the documents for bid purposes, impliedly warrants their accuracy for the use intended.

4. After several requests by CDOT for the Contractor to justify its costs, the Contractor continued to insist that it costs were accurate as late as its letter dated November 4, 2013 to CDOT. The Contractor’s REA was based on a modified total cost approach. Spec 105.22 states:

 *All disputes and claims seeking damages calculated on a Total Cost or Modified Total Cost basis will not be considered unless the party asserting such damages establishes all* ***the legal requirements therefore*** (emphasis added*.*

 In a later version of Spec 105.22, CDOT expanded the language on total cost that lists the legal requirements that reflect previous court decisions. The spec states:

 *All disputes and claims seeking damages calculated on a Total Cost or Modified Total Cost basis will not be considered unless the party asserting such damages establishes all the legal requirements therefore, which include:*

 *(1) The nature of the particular losses makes it impossible or highly impractical to determine them with a reasonable degree of accuracy.*

 *(2) The Contractor’s bid or estimate was realistic.*

 *(3) The Contractor’s actual costs were reasonable.*

 *(4) The Contractor was not responsible for the cost overrun.*

The Contractor’s use of modified total cost fails under two of the above provisions.

 (1) The Contractor was aware of the changed condition before it began the subgrade work and could have kept records of the actual extra work performed and the related costs on a daily basis. The Contractor said it did not keep any records other than its total cost records for the Project. Spec 105.22(a) states:

 *Throughout the dispute, the Contractor and the Project Engineer shall keep complete daily records of extra costs and time incurred, in accordance with the following procedures:*

1. *Daily records shall identify each operation affected, the specific locations where work is affected, and the potential effect to the project’s schedule. Such records shall also reflect all labor, material, and equipment applicable to the affected operations.*
2. *On the first work day of each week following the date of the written notice of dispute, the Contractor shall provide the Project Engineer with the daily records for the preceding week. If the Contractor’s records indicate costs greater than those kept by the Department, the Project Engineer will meet with the Contractor and present his records to the Contractor at the meeting. The Contractor shall notify the Engineer in writing within three work days of any inaccuracies noted in, or disagreements with, the Department’s records.*

 (3) The Contractor’s costs are not reasonable as many of the costs that the Contractor included in its REA were costs prior to September 29, 2012 which had been settled earlier and costs for labor and equipment that related to other items of work not associated with the changed condition. CDOT’s letter of May 17, 2013 stated, *costs for trimming, water truck, Class 6 placement, equipment working on other construction activities, etc. have all been rejected by CDOT. CDOT has utilized the numerous daily diaries produced by CDOT’s project management staff to recreate what took place on the project during this period on a daily basis and try to validate the information provided by Lawson Construction Company. Upon reviewing all the supplied data, CDOT has eliminated any equipment, operator, laborer or trucking hours that can’t be verified by CDOT’s daily documentation. CDOT then took all the hours for equipment, operators and trucks that they can verify were used to process the cobblestone subgrade and multiplied them by a current contract bid price for the corresponding piece of equipment or utilized an average bid price from CDOT’s 2012 Cost Data book for a piece of equipment.*

 The Contractor in its November 4, 2013 letter continued to insist that its modified total cost REA for $542,993.48 was correct and never addressed the issues raised by CDOT concerning the Contractor’s analysis. During the hearing, the Contractor said it had reviewed the time that was not applicable in their REA and would deduct $52,107.94 for labor and equipment costs before September 29, 2012 (CDOT Attachment 4) and $20,395.26 for Class 6. Other than for questioning CDOT had not provided the daily records, the Contractor did not address the equipment time not allowed by CDOT.

5. The methodology CDOT used to develop its allowed costs as outlined in CDOT’s October 29, 2013 letter and its Pre-hearing Submittal and as was explained and discussed during the hearing appears reasonable and based on the daily records that CDOT kept. CDOT’s allowed costs total $292,146.60 which has been paid by CDOT through Pay Estimate #14.

6. Several documents that were included in the parties’ Pre-hearing Submittals and that were referenced during the hearing were not signed by the Contractor and/or CDOT. Since there were no objections by either party to the documents that were used in hearing, the DRB assumes that what was submitted was correct and agreed to without signatures.

7. The Contractor requested $76,656.57 for extended overhead associated with the differing subgrade. The costs were composed of 8 weeks of overhead and 508 days of per diem.

 For all practical purposes, the last day of work performed by the Contractor until work resumed in 2013 was December 17, 2012, 2 days beyond the Original Contract Completion Date of December 15, 2012. Accordingly, due to the late start by the Contractor and the 2012 work suspension starting only 2 days after the Contract Completion Date, extended overhead, including the per diem, is not applicable.

 In the extended overhead costs, the Contractor requested 8 additional weeks for the lab trailer. As is discussed in the Schedule Impact Section, Item 5, the lab trailer was delivered more than 8 weeks later than what the Contractor showed in the Original Baseline schedule.

**Recommendations:**

1. A review of the additional compensation methodology presented by CDOT appears fair and equitable and in accordance with Spec 104.02(c). Accordingly, it is recommended that the following compensation be paid to the Contractor, if not already paid, for costs attributable to the differing site condition due to the subgrade.

 Additional equipment hours $116,325.00

 Unclassified Excavation 98,670.00

 Muck Excavation 14,580.00

 Reconditioning 62,571.60 **Total $292,146.60**

2. The Contractors request for 8 weeks of extended overhead and per diem costs is without merit.

**SCHEDULE IMPACT DUE TO THE DIFFERING SITE CONDITION**

**Findings:**

1. The pre-construction conference was held on June 15, 2012 and the Notice to Proceed was issued on June 20, 2012. The Contractor’s Original Baseline Schedule that was submitted on June 8, 2012 showed the first work on the Project, 7th Street Intersection Underground, was to start on June 22, 2012. The work on 7th Street did not actually start until July 18, 2012, 26 days later than originally scheduled. In addition, the Contractor’s initial Baseline Schedule showed setting up the field office on June 18, 2012, this did not occur until July 9, 2012, 21 days later than planned.

 The Removal of Asphalt Mat at the 7th Street was originally scheduled to start July 12, 2012 but actually started August 27, 2012, 46 days later than originally scheduled. Likewise, the concrete paving for 7th Street was originally scheduled to start July 20, 2012 but actually started September 7, 2012, 49 days later than originally scheduled.

 Delay and time issues related to the Milestone 1 date have been settled by the parties. However, the work at 7th Street delayed the work starting on the mainline section of the Project.

2. The project could not be completed by the completion date of December 15, 2012 since the changed mast arm length delayed the delivery until the spring of 2013 and the striping material manufacturer recommended that the striping material not be applied from November until April in Colorado. Both parties signed MCR #3 for the delays on February 6, 2013 which stated, Any *claims for additional impact costs or for more time over and above the 7 days already provided for these changes, will not be considered.*

3. The Contract was a Completion Date Contract. Spec 108.08(b) states:

***Completion Date Contract.*** *When the Contract specifies a completion date, all work under the Contract shall be completed on or before that date. No extension of the completion date will be allowed for inclement weather, foreseeable causes, or conditions under the control of the Contractor.*

 *If all work under the Contract is not completed on or before the specified completion date,* ***contract time will be assessed for each additional calendar day in accordance with subsection 108.8 (a) 2***(emphasis added)*.*

 Spec 108.08(a)2 states:

 *When the work is on a calendar day basis, one calendar day of contract time will be assessed for each calendar day from the date that Contract time starts including Saturdays, Sundays, and holidays. Less than full time charges may be made on those days when conditions, which are beyond the control of and unknown to the Contractor, make it impossible to prosecute the work on items controlling the completion of the work with full, normal efficiency. Less than full time charges may be allowed for inclement weather only when the Engineer directs the Contractor not to work for the safety of the traveling*

 *public. When less than full time charges are to be assessed, the following procedures will be followed: One whole day of contract time will be assessed for each calendar day on which the work is prosecuted during six hours or more of the Contractor’s daily working schedule; one‑half day will be assessed for each calendar day on which the work is prosecuted for at least two hours but less than six hours of the day; contract time will not*

 *be assessed when the work is prosecuted for less than two hours.*

By going to a Working Day basis, CDOT was more lenient in time application than would have been governed by the Contract as stated above. CDOT also indicated in the hearing that days were not charged when extra work was being performed and that if there was any doubt it gave the benefit of the doubt to the Contractor.

 CDOT’s letter of January 4, 2013 clearly outlined the scope of the remaining work, an explanation of the days that were added to the remaining Working Days, the safety critical work that had to be completed by mid-January 2013 and how the Working Days would be charged.

4. Project Special Provisions - Commencement and Completion of Work states:

 *The Contractor shall not plan to work July 4, 2012, August 19-21, 2012, August 31- September 3, 2012, November 21-25, 2012.*

There were no restrictions on weekend work other than as stated above. There were numerous Saturdays and Sundays where the Contractor did not work but it could have.

5. Based on the CDSOT Timelines, CDOT Pre-hearing Submittal Attachments 9 and 10, there were days when the Contractor did not have crews or had a minimal crew on the Project but work could have been done. The period from September 12 to September 20, 2012 highlights the lack of production.

 Spec 620.06, Field Facilities, states:

 *Facilities shall be on the project, leveled and ready for use* ***prior to the start of any operations*** (emphasis added). The Original Baseline schedule showed the Field Lab being delivered on June 25, 2012 but it was not delivered until August 21, 2012. The Contractor wanted to start removing asphalt on August 14, 2012 but CDOT stopped the Contractor from removing asphalt until August 27, 2012 when the lab was ready for use.

6. Spec 108.08(d)(4) states:

 *A schedule revision as defined in subsection 108.03 shall accompany the request . The Schedule as revised shall clearly indicate that the activity or activities delayed were critical or have become critical due to the delay.*

 During the hearing, the Contractor said a schedule analysis was not submitted as required above and that it only submitted monthly updates.

7. The original Baseline schedule shows a total of 20 days for Unclassified Excavation and Reconditioning. The approved Baseline schedule shows a total 20 days for these 2 items while the As-built schedule shows a total of 30 days. This reflects an increase of 10 days for the subgrade work. The added equipment hours that were offered by CDOT of $204,508.13 ($188,028.13 + $16,480) shows that there was considerable work done due to the changed condition which undoubtedly required more time. The $188,028.13 reflects 881.35 added equipment hours for 5 pieces of equipment (exclude trucks). Assuming concurrent use of all the equipment at 10 hours per day, results in 17.6 days.

 CDOT allowed the Contractor an additional 5 days for the utility work at 7th Street which were not totally justified based on the Utility Special Provision and added 4 days for Muck Excavation which was already in the Contract. This would offset some of the time above for added equipment.

 CDOT Time Analysis added 7 days for the added work due to the subgrade but the analysis above of 10 days (Scheduled vs. Actual) is considered more accurate.

8. CDOT’s concrete paving Schedule Impact Analysis (Pre-hearing Submittal Attachment 8) shows 52 days for paving in the Approved Baseline Schedule. The As-built Schedule analysis by CDOT shows paving was done on 90 days. During the hearing, the Contractor said there were 49 days of paving. There was no discussion of the difference in paving days.

9. CDOT Pre-hearing Position Paper in the time analysis, credited back to CDOT 7 days for the elimination of the Median Cover. In all of its schedule versions, the Contractor indicated the median cover was concurrent with Curb and Gutter work. The Contractor’s duration for Median Cover as listed on its durations for Escrow Documents shows 5 days. Although there was nothing in the submittals or during the hearing that discussed this credit, it appears that the 7 days that CDOT took credit for were excessive based on concurrent work.

10. The Original Baseline schedule showed 5 days for Final Striping and Signage. The approved Baseline schedule showed 7 days. CDOT indicated in Pre-hearing Submittal - Attachment 10 that 13 days were charged for striping. However, in Attachment 12 CDOT said that 3 days (April 16-18) had dust and weather problems. Accordingly, there were 10 days of actual striping work excluding grinding which could be done concurrently with the striping.

11. CDOT criticized the Contractor for not coordinating the spring 2103 work so that multiple subs and the Contractor were working on the same day. The Contractor gave no rebuttal to CDOT’s comment.

12. Based on the foregoing, the added time for the spring 2013 work should be changed as follows:

 CDOT additional working days 28

 Add back Median cover days (Finding 9) 7

 Add 3 more days for the subgrade problem (Finding 7) 3

 Total working days to complete the work 38

CDOT working days charged 42

Deduct bad weather days for striping (Finding 10) - 3

 Total charged days 39

13. The Original Baseline Schedule showed the Installation of Traffic Control Devices beginning on June 25, 2012. Actual installation started on July, 9, 2012, some 14 days later than first planned. Accordingly, CDOT was required to pay 14 days less for Traffic Control at the beginning of the Project which should negate the additional Traffic Control costs in 2013 which CDOT deducted from the Contract.

**Recommendations:**

1. CDOT’s use of the Working Day time count rather than the use of the Calendar Day method as was required by Spec 108.08(b) definitely favored the Contractor, especially considering the time of year the remaining work was done.

2. In 2013, the Contractor performed work that was required to complete its Contract which consisted of uncompleted work and repair work. The Contractor also did additional work requested by CDOT, as well as, the work that was delayed due to the 2013 delivery of the revised mast arm and the striping that had to be done in the spring per the manufacturer’s recommendations. In accordance with Findings above, no Liquidated Damages should be charged to the Contractor.

3. The Contractor should not be backcharged for Traffic Control Costs.

**ASSOCIATED COSTS DUE TO THE DIFFERING SITE CONDITION**

**Findings:**

1. Within the REA, the Contractor gave no detail for the hours claimed other than for his Form 10’s and daily labor/equipment lists. The Contractor’s Job Cost from January to May 2013 show the following labor hours which do not appear to relate directly to work put in place:

 Cost Code Description Hours

100100 Supervision 186.5

 100102 Project Management 1,279.0

 100500 Drivetime/Mob 296.5

 412901 Cleanup 206.0

 412999 Bump Grinding 38.0

 605000 Winter Protection 190.5

 626000 Mob 237.4

 626120 Batch Plant Take Down 217.0

 999999 Repair Call Back 193.5

 Total 2,844.4

 Total Job Cost Hours 4,380.4

Less Total from above -2,844.4

 Hours for other work 1,536.0

 Contractor REA Labor Hours 2,521.0

 Accordingly, it appears the REA contains almost 1,000 more hours than the Job Cost hours.

 The work in 2013 was listed in CDOT’s letter of January 4, 2013. Some of the remaining work was Unit Price or Contract work and work added by CDOT. Some of the remaining work was for removal and replacement of work damaged by the contractor.

2. It should be noted that the Contractor requested an additional $36,714.00 ($31,650 + 16%) for extended overhead for the work performed in 2013 which was composed of 4 weeks of overhead and 235 days of per diem. As was stated by CDOT during the hearing (See Question 7 by the DRB), a great deal of the work done in 2013 could have been done in 2012.

 Some of the work added by CDOT was done concurrently with the Contractor’s completion work.

3. CDOT Pre-hearing Submittal - Attachment 10 reflects there were14 Working Days which were not charged because the Contractor or its subs were performing Extra Work. CDOT also said the Revised Baseline Schedule showed a duration of 7 days for the striping work and the striping work had to be done in the spring of 2013. Accordingly, the Contractor worked for a total of 21 extra days in the spring of 2013 for the extra and striping. Since the Contractor was 21 days late in starting the field office setup as discussed in Finding 1, the overhead expenses saved by the late start offsets the added overhead in the spring of 2013.

**Recommendations:**

1. The Contractor’s request for additional costs for work due to delays from the subgrade differing site condition is without merit.

2. The Contractors request for 4 weeks of extended overhead and per diem costs is without merit.

3. The Contractor’s request for a concrete premium due to the purchase from a ready mix supplier rather than its own concrete batch plant is without merit.

Respectfully submitted, this 2nd day of May 2014.



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William P. Caldwell

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L. G. Duncan

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W. H. Hinton II