

Construction Scheduling Contracts

Mike Mazoch, PE
Assistant Area Engineer
Bell County

Current Projects and Staffing

REASON FOR CONTRACTING FOR SCHEDULE REVIEW

- ▶ Current Belton Area Office Engineering Staff is composed of 29 FTEs of which 2 are supervising Engineers (AE, Asst AE)
- ▶ 2 Project Engineers each assigned to an IH 35 Project

THREE IH 35 PROJECT

- 2 Traditionally Staffed with Consultant Schedule Review
- 1 Upcoming Consultant Construction Management

Current Projects and Staffing

▶ 4 Pass Through Finance Projects

- 2 City of Killeen
- 1 City of Temple
- 1 City of Harker Heights

Current Projects and Staffing

- ▶ 3 US Highway Projects
 - ▶ 1 SH Project
 - ▶ 3 FM Roads
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State Provided

- ▶ Contract Time Schedules
 - ▶ Baseline Schedules
 - ▶ Monthly Schedule Updates
 - ▶ Daily Work Reports, Diaries, Estimates, Correspondence, and Copies of Change Orders
 - ▶ Time Impact Analysis Documentation
 - ▶ Plan Sets
 - ▶ Proposal and Addendums
 - ▶ TCP Narrative for Reviewing the Sequence of Work
 - ▶ General Notes, Special Specifications and Special Provisions
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Services Provided by Engineer

- ▶ Preliminary and Baseline Schedule
- ▶ Review Schedule Updates
 - Submit Schedule Review Reports
 - Compare Actual Construction Status to Update
 - Develop Project Schedule Status Reports (PSSR)
- ▶ Time Impact Analysis (TIA)
 - Review and analyze TIAs in accordance with special provision
 - Coordinate with Area Office and/or District Office to determine validity of the TIAs
 - Assist in analyzing Delay Claims
 - Provide report for granting or rejecting additional time
 - Review overhead documentation for compensable delays
 - Recommend scheduling alternatives to mitigate impact resulting from conflict
 - Perform independent TIAs as an alternative to the contractor's submittal

Deliverables

- ▶ **Baseline Schedule Review Reports**
 - Complete Checklist for Schedule Reviews
 - Detailed listing of Schedule Deficiencies comment log
 - Recommend to accept or reject
 - Draft AE letter

Base Schedule Review

CSJ: 0015-02-048,ETC				County: McLennan			
Project:I-35 Section 3A(2)				Highway: IH-35			
Contractor: James Construction LLC				Sched. Name: 0412			
Row	Yes	No	N/A	Item			
1			X	Has the Contractor submitted a disk in accordance with time frames in special provision?			
2	X			Is the schedule submitted in specified format?			
3				Full CPM	X	Basic CPM	
4	X			Is the schedule compatible with Primavera Project Planner or SureTrak as required?			
5	X			Has the Contractor identified a qualified Project Scheduler?			
6	X			Are any activity durations more than 20 working days?			
7	X			If yes, are exceptions acceptable?			
8	X			Does the schedule follow the planned Traffic Control Plan?			
9			X	If no, has the Contractor submitted a written request to change TCP?			
10	X			Is the project completion date within allowed number of working days and months?			
11				Days Allowed	1210	Months Allowed	48
12				Days Required	1178	Months Required	46
13			X	Has the Contractor included resource loading if required?			
14	X			Is/are critical path(s) clearly discernible and accurately identified?			
15	X			Is all contract work included?			
16	X			Are activity durations reasonable for amount and complexity of work?			
17		X		Are activity descriptions clear and unambiguous?			
18	X			Is schedule free of major blunders?			
19	X			Other than start and finish activities, do all activities have predecessors and successors?			
20	X			Is the level of detail appropriate for complexity of project?			
21		X		Is there an imposed finish date?			
22	X			Is the use of constraints kept to a minimum?			
23	X			Are logical calendars set up?			
24	X			Are the calendars reasonable (i.e. not overly optimistic) and is weather considered?			
25	X			Are major holidays set up as non-work days?			
26	X			Do activities use appropriate calendars?			
27	X			Is a logical coding structure set up?			
28	X			Are activities properly coded?			
29	X			Can the schedule be organized logically using the coding structure?			
30							

Schedule Acceptable According to specifications? Yes <input type="checkbox"/> No <input type="checkbox"/> Reasons documented above	
Date: 6/22/2012	Reviewer Name: Scott Hutchins

Note: The Engineer's review and acceptance of the Contractor's Project Schedule does not relieve the Contractor of any of its responsibility for the project schedule, or of the Contractor's ability to meet interim milestone dates (if specified) and the contract completion date, nor does such review and acceptance expressly or by implication warrant, acknowledge or admit the reasonableness of the logic, durations, manpower or equipment loading of the Contractor's project schedule.

Base Schedule Comment Log

Project:	I-35 3A-2, CSJ 0015-02-048, Etc			Submittal:	McLENNAN COUNTY IH 35 3A-2 0412 (06-15-2012)
Reviewing Agency:	TxDOT Waco			Contractor Name:	JAMES CONSTRUCTION GROUP, L.L.C.
Reviewer Name:	Hutchins & Crowley			Responders Name:	
Submittal Date:	June 15, 2012			Resubmittal Date 1:	
TxDOT Comment Date:	June 22, 2012			TxDOT Resubmittal Comment Date:	
Action Codes:					
A - Agree, Contractor will Comply				F - will be corrected later	
C - Disagree, Contractor and Reviewer Resolution Required					
D - Delete, Reviewer Withdraws Comment					
E - Exception, Resolution Required				x - comment closed	
N/A - Not Applicable				NO RVW - area not reviewed (clouded)	
Reviewer	Schedule ID	Comment No.	Page or Sheet No.	Reviewer Comment	Contractor Response
DRC/PSH	0212/0312	1		The quantity for storm drain RCP installation totals around 20,000 LF in the P6 schedule but the bid items for this work total to approximately 48,000 LF. The scope for storm drain RCP does not appear to be fully represented in the schedule.	Reviewed & revised quantities. Added activities for drainageruns that were missing. All drainage runs are represented with the exception of driveway pipe.
DRC/PSH	0212/0312	2		Per the bid items there is approximately 40,000 LF of permanent concrete traffic barrier. This item of work does not appear to be represented in the schedule.	Added SSCB activities.
DRC/PSH	0212/0312	3		There does not appear to be any activities for placement concrete rail on Ret Walls or bridges.	Added rail activities.
DRC/PSH	0212/0312	4		Per the bid items there is approximately 12,000 CY of rip-rap to be placed through-out the project. Although this item is often considered "filler" or subsidiary work, because of the quantity and the number of bridges on the project that required rip-rap placement prior to setting beams some form of representation of this work is reasonable. Many Ramp Gores contain large areas of riprap also.	Added activities at bridge headers only. 6,000 cy of the 12,000 cy is stone riprap.
DRC/PSH	0212/0312	5	8.2.B.2	The outstanding right-of-way parcels listed in the Contract Special Provisions Section 000--2341 are not included in the schedule.	Baseline schedule is the "perfect world", therefore no activities have been made. We will address on update #1.
DRC/PSH	0212/0312	6	8.2.B.2	The outstanding 3rd party (work not included in contract) utility adjustments listed in the Contract Special Provisions Section 000--2341 are not included in the schedule.	Contractor cannot build a schedule on work not included in the scope of contract. We will address on update #1 if owner provides status.
DRC/PSH	0212/0312	7		There does not appear to be any activities for the Submittal/Approval for the permanent soil nail walls.	Added submittal, review & approve and fabricate activities.
DRC/PSH	0212/0312	8	8.2.B.2	There are 188 activities with no value in the Quantity of Work data field (some of these do have it included in the Activity Description) and 777 activities with no value in the Production Rate data field.	Reviewed and added quantities and production rates where they were missing.
DRC/PSH	0212/0312	9		There are 136 sets of 2-4 activities each with duplicate activity descriptions. Adding a prefix identifying Phase/Stage/Location can provide clarity to the schedule and assist with logic reviews within the scheduling software.	All activity ID's have a pre-fix designating the phase, stage and discipline of work. Location is shown in the activity code header.
DRC/PSH	0212/0312	10		The only submittal activities in the schedule are for bridge beams and then a generic activity of all wall submittals. Are there additional long lead submittals that should be represented and monitored? Also, because the owner has a set period for the review and approval of a submittal it is helpful to track this process with at least two activities per submittal - "Prepare and Submit Item x" and "Review and Approve Item x".	Added review and approve activities.

Base Schedule Letter Approval

June 22, 2012

Mr. Randall Rosenbaum
Project Manager
James Construction Corporation
5880 West US Hwy 190
Belton, Texas 76513

RE: CSJ 0015-02-048, IH 35, McLennan County Contract Schedule 0412

Dear Mr. Rosenbaum:

We have reviewed your P3 contract schedule 0412. Your Baseline Schedule 0412 is Approved with the following comment and modifications.

Comment: This Baseline schedule depicts an early completion date of 4/18/2016, which is 38 days earlier than the 1210 contract days.

Make the following modifications:

1. Add an Activity for SH7/FM 107 Open Roadway and tie the FM107 Hammock to the SH 7/FM 107 Open Roadway with a Finish to Finish Tie.
2. Change the Calendar on Activity TC3802 to a Contract Time Calendar
3. Add the additional major holidays to the Contract Calendar through the end of 2016.
4. Once these minor changes have been made, Schedule "F9" the project with a Data Date of 6/25/2012.
5. Save schedule 0412 and send a new 0412.PRX file to my office.
6. Make a copy of Schedule 0412 with a new name, and then use the new schedule to begin the update process.
7. The Updated schedule should be progressed thru the TxDOT Estimate Closing Date, typically around the 25th of each month.
8. Please review Special Specification 008-086 for schedule maintenance, updating, revisions and time impact analysis procedures.

If you have any questions, please give me a call at 254-939-3778.

Sincerely,

Ali Bashi, P.E.
Belton Area Engineer

Enclosure

Deliverables

▶ **Schedule Updates Progress Schedule Review Report**

- Recommend accept/reject
- Summary of Findings
- Identify Future Potential Future Critical Path Impacts

Draft AE letter

Complete Checklist for Progress Schedule Review

List Schedule Deficiencies

Run Claim Digger with written explanation of Report

Revised Schedule Report

Sample of Contractor Project Narrative

*TxDOT Project: 1M 0354(235), ETC
CSJ: 0015-02-048*

*Contractor: James Construction Group, LLC
Prepared by: Josh Little, Project Engineer*

*County: McLennan
Hwy: IH 35*

*Area Engineer: Ali Bashir, P.E.
Date Prepared: 07/27/2012*

Monthly Project Narrative July 2012

Summary of July 2012

Number of days worked in the month **25***. Number of weather days impacting work in the month **1**.
Number of holidays impacting work in month **1**.

Work accomplished during the month: (Major work started/continued/finished; Phases or Milestones started/finished; or other significant accomplishments)

- Set project limit signs and barricades.
- Set PCTB Phase 1 Stage 1
- Prepped ROW along SBFR, cleared and grubbed trees from Big Elm Creek up to Deer Creek
- Stripped topsoil along SBFR
- Demolished existing Big Elm Creek SBFR bridge
- Removed riprap at Big Elm creek and
- Excavated abutments for new bridge
- Installed silt fence and construction entrances along SBFR
- Laid culvert 898

Issues and Concerns

Description of problems encountered during the month:

- Need AT&T plans approved for construction, Isbell was scheduled to come in July 9th however they cannot start without approved cable prints.

Anticipated delays (cause/corrective action needed/impact to other work, milestones, or completion date):

Pending items and/or potential impacts of change orders or other delays:

Project Schedule Summary

List changes made to the project schedule, including added/removed activities, changes in sequence or activity relationships, or changes to calendars:

Plot of current critical path attached: yes no Reason plot not provided: _____

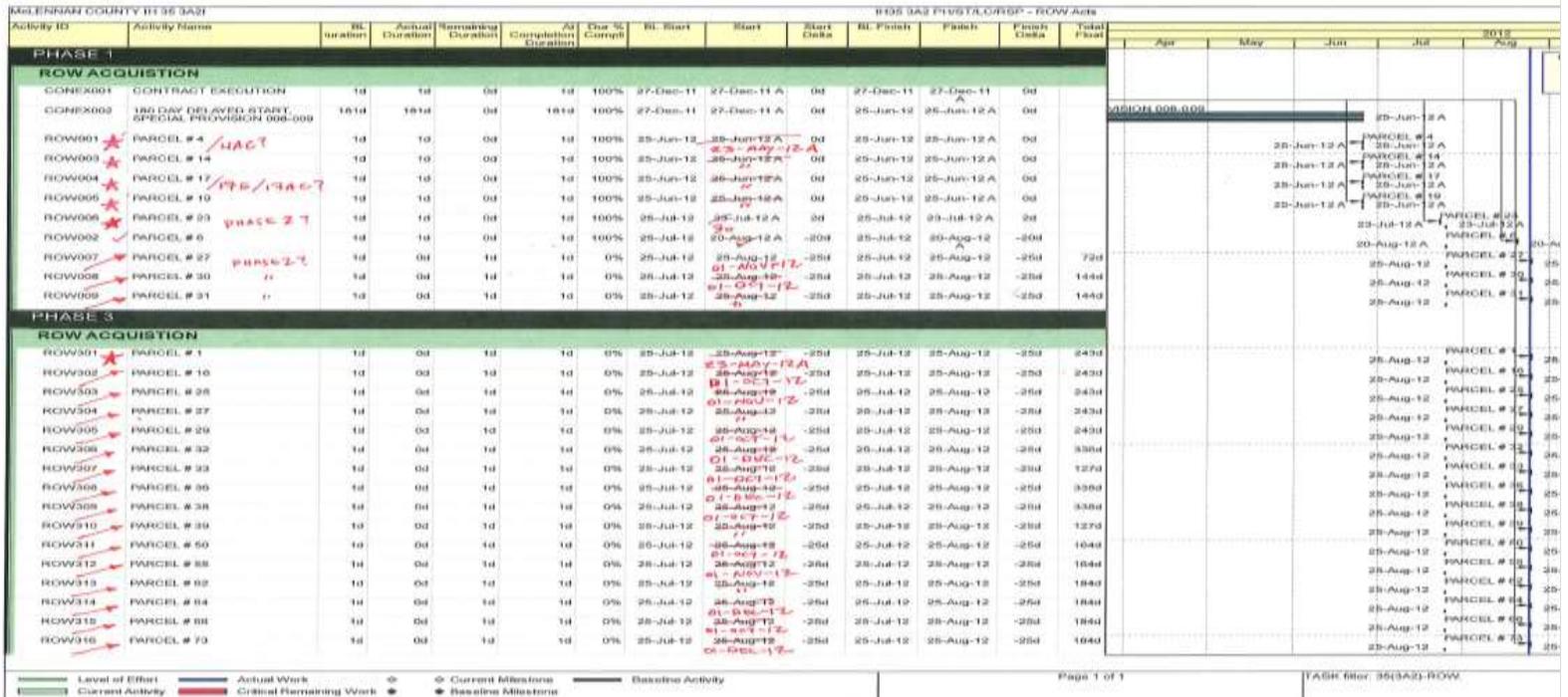
Plot of 3-month look-ahead report attached: yes no Reason plot not provided: See above.

Sample of Review Response

In reviewing the updated Parcel Clear Dates Detail reports, several issue regarding ROW acquisition activities in the schedule have become apparent:

- 6 cleared parcels that are identified in the P3 schedule have incorrect actual finish dates (clear dates).
- 18 parcels that have not been cleared but are identified in the P3 schedule have incorrect forecasted finish dates (clear dates).
- 15 parcels that have not been cleared are not identified in the P3 schedule.

An annotated schedule print-out and Parcel Clear Dates Detail reports are shown below.



Updated Schedule Approval Letter

September 14, 2012

Mr. Randall Rosenbaum
Project Manager
James Construction Corporation
5880 West US Hwy 190
Belton, Texas 76513

RE: CSJ 0015-02-048, IH 35, McLennan County Contract Schedule Update #2, P3 Project ID 3202, Data Date August 25, 2012

Dear Mr. Rosenbaum:

We have reviewed your P3 Update #2 schedule, Project ID 3202 with a Data Date of August 25, 2012 and Accept as Noted this submittal with the following items being the noted points of exception:

1. The paving calendar (Calendar 3) is still only showing 50 working days for the October 2013 - March 2014 and October 2014 - March 2015 periods. The October 2012 - March 2013 period is showing a more realistic 100 working days. Please review this calendar to confirm it was intended to be this restrictive during the 2013-2014 and 2014-2015 periods and consider adjusting for consistency and to more accurately reflect the likely seasonal conditions.
2. The previously critical Phase 1, Stage 1 in-progress activity EW1105 – “EXCAVATE 863+00 TO 975+00” had a logic deletion this update that left it without a Finish successor. An activity without a Finish successor implies the finish of the activity could extend out indefinitely without impacting the overall project. Please review and correct in the next schedule update.
3. In reviewing the updated Parcel Clear Dates Detail reports, several issue regarding ROW acquisition activities in the schedule have become apparent:
 - a. 6 cleared parcels that are identified in the P3 schedule have incorrect actual finish dates (clear dates).
 - b. 8 parcels that have not been cleared but are identified in the P3 schedule have incorrect forecasted finish dates (clear dates).
 - c. 15 parcels that have not been cleared are not identified in the P3 schedule.

See the Comments for further details. Please review and correct in the next schedule

Consultant Fee Schedule

- ▶ Preliminary and Baseline Schedule
 - ▶ Schedule Updates
 - ▶ Time Impact Analysis
- 

CLOSING REMARKS

- ▶ NO TIME IMPACT TO DATE (MITIGATION)
 - ▶ BENEFICIAL TO CONTRACTOR/TXDOT
 - ▶ TIME SAVINGS TO AE OFFICE
 - ▶ EXPERTISE IN SCHEDULE
 - ▶ DETAILED ANALYSIS
 - ▶ OUTSIDE OBJECTIVE OBSERVER OF PROJECT
- 